

**Developing Supports for Conversations About Teaching:  
Negotiating Problems of Practice in Researcher-Practitioner Collaborations**

by

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## **Abstract**

This is a study of the importance of “problem negotiation” in collaborations between teachers and researchers. The study presents contrasting cases of negotiation involving two different networks of teachers in Chile, each of which was involved in using a web-based tool intended to facilitate conversation about teaching practice. The first phase of this research employs a Design-Based Research (DBR) approach, through which each network engaged with the researcher in iterative cycles of design to shape and improve the tool. In the second phase of the research, the features of problem negotiation in the first stage of the implementation were defined and analyzed. Problem negotiation is the first, and perhaps most important, phase of the Design-Based Implementation Research (DBIR) methodology (Penuel, Coburn, & Gallagher, 2013). This methodology provides guidance in developing interventions for use in practice that are sustainable and scalable (Fishman, Penuel, Allen, Cheng, & Sabelli, 2013).

This study contributes to our understanding of DBIR by exploring the negotiation of a problem of practice employing qualitative methods for capturing participants’ perspectives and features of the context that might play a role in the intervention. The analysis used interviews, observations, survey, and document data to investigate the process of negotiating a problem of practice and the evidence of commitment and/or differing views to understand how they affected the success of the intervention.

The study took place in the context of a national reform initiative in Chile that has encouraged the emergence of teacher professional networks. Several cycles of design, enactment, analysis, and redesign were used to enhance the tool to support conversations about teaching practice. In the first network, problem negotiation involved top-down coordination with policy-makers and a network coordinator. The researcher introduced the tool and mediated its use by participants. Teacher participation was not consistent, highlighting a potential misalignment on the “problem” being addressed through the intervention. In the second network, problem negotiation was more bottom-up, with all participants engaged in deciding that the intervention was something they wanted to explore in response to a particular problem. The tool use was more independent and involved active participation, suggesting a better understanding of the problem of practice we were addressing.

Other key findings of this study include the importance of exploring the contextual features of partners’ realities in researcher-practitioner collaborations and identifying the different dimensions of their contexts, for example, the role of authority figures and the particularities of the practitioner groups such as collegiality and shared experiences. Overall, this study identified implications for negotiating problems of practice between researchers and practitioners that highlight the brokering role that some actors play in the process. Related to brokering, the study’s implications stress the relevance of negotiating access through key actors, involving different authority figures in problem negotiation, collectively defining goals for the endeavor upon which all partners have agreed, and anticipating expectations that can influence the process of negotiating problems of practice.

## Chapter 1

### Introduction

#### 1.1 The journey of researching teachers' conversations about teaching

*This journey begins with a researcher who set off to study professional networks (PNs) in her home country. In 2011, the researcher, whom we will call “Florenxia,” learned about the English teachers professional networks in Chile and wanted to know more about them, as the idea of networks strongly resonated with her interests in collaborative learning among teachers. She decided to conduct an exploratory study of the PNs and traveled from the United States to Chile to talk with some PN members and the English Opens Doors (EOD) program, the government agency that supported the PNs. In this study, Florenxia learned a great deal about how the PNs were organized, the kinds of goals they had, and their general functioning. She got to know them through site visits and talking to their members. From this experience, Florenxia recognized that the PNs were potentially amazing places for teachers to learn about their teaching. PN members were having many conversations that seemed a fruitful ground for going deeper in understanding their work as teachers. However, they were mostly focused on exchanging teaching materials, reaping just a fraction of the potential benefits of the network to members.*

*As an outsider in that context, Florencia had a realization: from what she knew about learning how to teach, she thought they might benefit from using a technology to support their conversations. There was also a special desire that she developed from her own experience as an elementary teacher: She was committed to partnering with teachers in any project she would begin, working with them to develop the project and facilitating their learning from each other.*

*Hence, Florencia designed a research project to collaboratively develop technology-based supports for conversations that teachers have around their teaching practice. She was thinking about a wiki tool that would make it easy for teachers to share examples of their practice and discuss them together and, in the process, allow them to learn about teaching. She was aware that teachers might more readily embrace the project if they were involved in its design and implementation, so she worked intensely to recruit teacher participation. Almost two years after she had first learned about the English teachers' professional networks in Chile, she was again traveling to the country to begin a collaborative project with one of these PNs in Santiago. As before, the government agency connected her with the coordinator of that PN, whom will here be called "Monica"<sup>1</sup>. Florencia was an outsider to the network and was there offering help with a problem that she had identified from an earlier exploratory study of teachers' learning and her experience with those PNs. Florencia knew that having deep conversations about their teaching could help teachers learn about teaching and eventually improve in their job. She was there to help, and although she was eager to involve teachers in the process, getting them to participate proved difficult. Monica, the*

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<sup>1</sup> All names are pseudonyms (except for Florencia, of course).

*coordinator, worked tirelessly to get the teachers on board, but something seemed not to be working.*

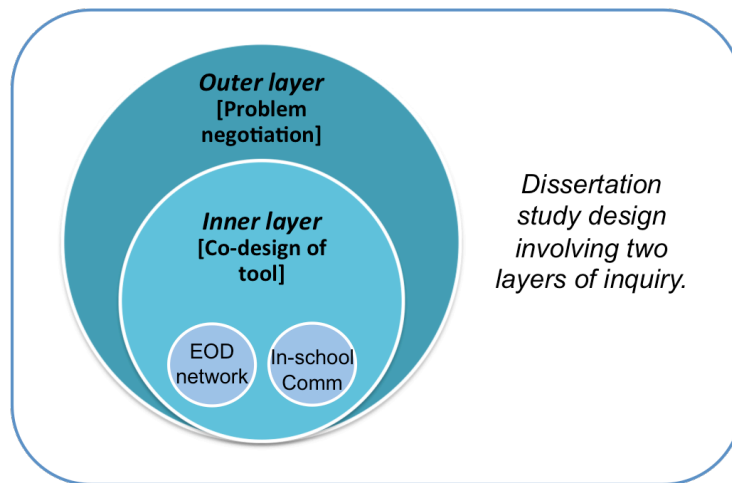
*Then, Florencia was confronted with a contrasting experience. Another network that was beginning to work as a community needed help getting started. They were already interested in learning from one another and wanted to focus their collaboration around their teaching. The coordinators of that community, whom we will call here “Eduardo” and “Sofia,” came to Florencia and asked about her project and the wiki. They wanted to use and make that system their own and discussed with Florencia the best ways to do so. The coordinators brought important knowledge about the teachers in their community that was used in conversations to situate the project and define the goals together. Ricardo and Sofia looked for support in their school and were strategic in inviting teachers to participate in the community. They worked with the teachers in the definition of norms for participation and invited Florencia to take part in that conversation, too. During the implementation of the project, although the process was not free of difficulties, teachers in this community engaged with the idea of talking about their teaching.*

*Florencia started to realize that in creating collaboration with the teachers in these two networks, their initial approach and conversations around the project goals and definitions for participation were important. It became an imperative for her to look more closely at the process of negotiation that she and the teachers conducted in each network. So she stepped back and looked at the two cases, investigating the features of the negotiation that took place in each one. Florencia saw that there was a layered reality in this investigation of the two cases. In one layer, she saw the collaboration with*

*the networks to develop a tool to support teacher conversations. In another layer, she saw the process of negotiating the problems that she and the teachers wanted to focus on in their collaboration. She saw that this understanding could be useful for future collaborations between researchers like her and practitioners like the teachers in the networks.*

This story provides a simplified account of the journey of conducting this study. The characters in this story include two groups of teachers and a researcher –me– collaborating to develop a web-based tool – a wiki – to support teacher conversations. One layer of this dissertation, the study of these cases, is surrounded by another layer, the study of a particular phenomenon, problem negotiation, which took place during the implementation of the project with the networks (See Figure 1). In other words, this dissertation is a study of problem negotiation in research in which collaborating with participants is a key element of the study design. Through the study of collaboration with the two teacher networks, I sought to understand how the process of negotiating problems of practice to be addressed in an implementation program unfolds and what implications this negotiation has on teacher groups’ work. Teaching improvement is influenced by different factors; teachers’ professional interaction with peers for learning about practice is particularly salient (Darling-Hammond & McLaughlin, 1995; Putnam & Borko, 1997). Because conditions for interactions in which teachers can exchange views and understand their own and others’ practices are hard to achieve, teachers need support in facilitating encounters with colleagues and developing collaborative interaction around teaching practice. Technology offers useful tools that can act as scaffolds for such communication

and collaboration. In supporting teachers' collaborative interactions, the question of what they need and how those needs could be addressed emerges strongly, urging teachers and those working with them to negotiate the problems that want to solve.



**Figure 1:** Layered design for dissertation study.

Negotiating the problems of practice that practitioners – teachers – and researchers seek to address is a fundamental phase in conducting collaborative research with practitioners. In the problem negotiation phase, the focus of the collective enterprise is explicitly identified, discussed, and negotiated. This process is facilitated by the disposition to listen and understand one another's perspective, involving not only knowing what each participant brings to the research, but acknowledging what might be needed to develop common understanding in working together towards a common goal. In this way, as Penuel, Coburn, and Gallagher (2013) propose, researchers and practitioners can position themselves as partners in building knowledge that is usable and can influence educational change.



## 1.2 Problem negotiation in participants – researchers collaboration

### 1.2.1 *What is the problem in negotiating problems?*

Simply defined, a *problem* can be a situation or matter that is difficult. It also can be a question or proposition to be addressed through inquiry. In research, there is not much difference between these two definitions. In any case, stating the problem that one seeks to understand is necessary to delimit the reasons why the research needs to be done (Creswell, 2008). Then, why is it necessary to understand problem negotiation in conducting research that involves participant-researcher collaboration? Design-Based Research (DBR), a central methodological approach in this study, relies on collaboration among different actors to design, implement, analyze, and re-design an innovation. Where there is an innovation that people want to develop over time, revising the development and adjusting the features of the innovation requires strong alignment among those involved.

Being aligned does not mean being in complete agreement on each and every detail of the project, but to share common views on what the innovation is trying to address and how that could be done. There is a problem that those involved in the research need to see from common points of view, even if their ideas about how to address the potential solutions are not completely in agreement. Considering a more concrete context, for instance, if teachers and researchers want to work together to develop supports for teacher learning, they need to have a common view about that learning, the need of supports for achieving that learning, and the innovations that can bring those supports. They need to agree upon the problem that the innovation is offering to address for the innovation to be sustainable, otherwise practitioners might not get the

support they need. Arriving at a common view and agreeing on the problems is not an automatic phenomenon. It is a process where all involved need to share perspectives and negotiate ideas on what problem they want to work and why. The problem then becomes the object of the negotiation process.

This study identifies the features of problem negotiation in the implementation of a DBR project to develop supports for teachers' conversations about teaching in professional networks. Problem negotiation is then examined in the context of the two teacher networks where the project was implemented. Both cases represent the effort to advance professional development for teachers that is grounded in their practice and happens as an ongoing effort (Borko, 2004). Practice orients the project's design, including the collaborative development of a technology tool to support conversations about teaching in several cycles. The way the project unfolded in each of the cases highlighted the importance of looking more closely to problem negotiation as a component in doing DBR and particularly as it has been described in the emergent Design-Based Implementation Research (DBIR), as the search for alignment and common understanding between researchers and practitioners in partnerships (Fishman, Penuel, Allen, & Cheng, 2013).

### *1.2.2 Problem negotiation and innovation: relationship and challenges*

To influence educational change, we need new ways to approach the problems of practice that might be affecting the possibilities for instructional improvement through innovative designs. Innovation becomes central as a means of addressing the need for change, and, in the case of DBIR, it is part of the co-design endeavor (Penuel et al., 2013; Penuel, Roschelle, & Shechtman, 2007). To arrive at the processes of co-designing

innovation, negotiating the problems of practice that the partnership wants to address is critical. The success of the innovation, both in its design process and implementation, can be strongly influenced by the negotiation phase. Things can go well if partners are able to identify the problems, find common ground about the relevance of those problems for the project, and agree on courses of action to address them. But they can also go poorly and that is a call for more study of problem negotiation in research-practice collaborations and how they influence the development of innovation.

### **1.3 Supporting teachers in learning from each other**

#### *1.3.1 Teachers learning from each other*

Teaching can be seen as a complex and unnatural activity (Ball & Forzani, 2007), which means that teachers need more than innate skills to create opportunities for student learning. Given the need for learned skills, teachers need opportunities to develop them, opportunities that can be provided through professional development (PD). Researchers have worked to define what it means to become a teacher and how to sustain improvement of teaching skills over time (e.g., Ball, Sleep, Boerst, & Bass, 2009; Darling-Hammond & Richardson, 2009). One of the essential components of teacher improvement is PD as an ongoing and long-term effort (Borko, 2004).

The complexities of teaching create challenges for PD that highlight the need for finding avenues by which teaching practice can be further developed. Research suggests that forms of PD that encourage learning through active participation, with content that relates to subject matter classroom practice, a focus on student learning, sufficient duration, and collective participation are likely to lead to greater improvements for

teachers (Darling-Hammond & Richardson, 2009; Desimone, 2009; Kooy & van Veen, 2012). There is also evidence from reviewing contemporary approaches that PD can be situated in the practice of teaching (Borko, Jacobs, & Koellner, 2010). Moreover, professional development needs to be collaborative and collegial (Borko, 2004). *Teacher professional networks* are one vehicle for professional development that is supported by all of these findings. Teacher professional networks foster collaboration and joint work through interaction in professional communities focused on teacher learning (Ball & Cohen, 1999; Borko, 2004). Some of these communities can be found within the boundaries of schools, where subject-specific teachers gather to study practice (e.g., Little & Horn, 2007), and can also emerge across subject-areas (Thomas, Wineburg, Grossman, Myhre, & Woolworth, 1998), and across schools (Kooy, 2006).

Teacher professional learning communities and teacher learning have been investigated in a variety of ways (e.g., Borko, 2004; Darling-Hammond, 1993; Lieberman & Wood, 2002; Little & McLaughlin, 1993), leading to the development of a range of approaches to support particular practices (Horn, 2010; Lieberman & Wood, 2002; Little & Horn, 2007) that can enhance teachers' capabilities. Professional learning communities have been found to have a positive effect on teaching practice and student learning (Vescio, Ross, & Adams, 2008). Therefore, some agreement exists about the benefits that participating in professional learning communities can have for teachers.

Since 2011, I have studied PNs in the Chilean English Open Doors (EOD) program from the perspective of teachers' experiences. EOD is a government program to improve English language teaching in publicly funded schools, thereby increasing opportunities for students' English learning. One of this program's initiatives is to

encourage the creation of professional networks for English teachers, where teachers from different schools in one district gather periodically around topics related to teaching and learning English as a foreign language. The EOD program has been influential in motivating the emergence of teacher PNs in Chile; before its inception there were scarce opportunities for teachers to collaborate and gather together around pedagogy and teaching practice. Indeed, most classroom teacher's work is solitary in Chile, as it is in other countries (Avalos, 2011). This situation is further exacerbated by the conditions of English teachers' work environments: Typically they have at most one colleague with the same subject focus. To help teachers overcome this challenge, the EOD program facilitates professional connections by motivating teachers to create and sustain PNs (MINEDUC, 2009a). Teacher participation in these PNs seems to be a positive opportunity for further reflection on and sharing of teaching practice, helping to inform policy and practice (Lieberman & Grolnick, 1996). However, little research has been done around the Chilean PNs as instances of teacher professional development. My focus is on how teachers' interactions in PNs can be better sustained, with an eye towards developing supports that would work for a broad range of PNs.

### *1.3.2 Technology as tool to support teachers' collaboration and mutual learning*

The use of technology emerged early in this research as part of the strategy designed to support collective discussion of teaching practice in networks/communities. The potentialities of computers for supporting collaboration among people, such as mediating communicative interaction among participants in a collaborative task, regulating the task, and administering roles (Kumar, 1996) are all reasons that back up the use of technology. Also, technology has become more and more pervasive in Chile.

There has been an intense penetration of personal computers, cellphones, and Internet connectivity among the population, and schools have been part of that process (Hinostroza, Labbé, Brun, & Matamala, 2011). Therefore, in thinking about how to support teachers in having conversations about their practice in ways that can be independent of place and time, using a web-based tool can be a powerful opportunity. In addition, I have been a long-standing user of technology to support collaboration and in my teaching, with extensive experience in researching collaborative learning mediated by technology (e.g. Gómez et al., 2013; Nussbaum et al., 2009). Using technology in this project seemed like a natural way to design supports for teachers in learning about their practice in collaboration with their colleagues.

In this study, technology is considered as a tool to support the activity of looking at teaching and sharing opinions and reflections around practice. It is not the center of the activity, nor does it carry any other value than supporting the sharing of artifacts, such as videos, texts, images that represent teaching practice, and sustaining collective sharing of perceptions about those artifacts in the form of collegial conversations. Today's progress in web-based tools offers the possibility of creating environments where people can share different kinds of resources and facilitating communication of those people around the shared resources. These capabilities, combined with the possibility to adjust the environment to people's needs and the ability to access it from different places and at different times make the tools a convenient way to support collective interaction and collaboration.

## **1.4 Context: two cases for studying problem negotiation**

As explained earlier, this study used a DBR approach where two teacher networks participated in collaboration with me as researcher. These two teacher networks are the context for this study, and this study is the inner-layer of my research. The two cases are examined with a focus on the problem negotiation stage that was part of implementing a collaborative project with them. In the following section, I provide some background for the present study and then briefly describe the two cases that are context for this study.

### *1.4.1 Background of the study*

A relevant background component of the present study is an exploratory study of the Chilean PNs that I conducted for over 10 months during 2011-2012 with a small sample of networks. The aim was to develop a rich description of the professional networks' goals and activities, identify the features of "success" as described by participants, and determine to what extent participants saw connections between their participation in the PNs and their teaching. In this study, I investigated three professional networks in the Metropolitan Region of Chile where Santiago, the capital, is located. I selected the professional networks following criteria I defined to support representativeness of different networks characteristics. The criteria were diversity in terms of grade level of the teachers, type of school administration, and variety in years of network existence or maturity.

As an initial step towards understanding the work of teachers in the PNs based on the features of the exemplars in the exploratory study, I found that PNs offer relevant occasions for community building and networking among English teachers in a given

locality. I observed that teachers share materials and strategies to teach English, organize activities to enhance students' opportunities to practice the English language, and provide mutual support to cope with the challenges of their work. I learned about the accomplishments of the networks, particularly the activities that involve students' participation (Gomez, 2012). In addition, I found that the networks were beginning to exhibit an orientation toward discussing particular features of their teaching, integrating English as a foreign language in their contexts, and analyzing teaching practice.

The findings in the exploratory study provided two signs of the PNs' value that supported further study around the PNs work: 1) that teachers in these networks have developed a sense of community that enables members to open their practice to others' opinions and to receive suggestions. This allows them to include collegial activities explicitly oriented toward discussion of their teaching practice, enhancing opportunities for learning about practice in the networks; and 2) that their collegial work might need supports to effectively produce the shift in orientation toward discussing teaching practice. This understanding of the networks provided an initial ground for the design of the present study and motivated the pursuit of ideas that might support teachers in networks/communities to go beyond getting together to share their practices and learn from one another in collaboration.

#### *1.4.2 Professional networks and learning communities as the context*

The context for studying problem negotiation in this dissertation is that of the teacher professional networks in Chile; particularly, two groups. One is a veteran network of discipline specific teachers from different schools who have been developing activities in association for a many years. The other group is an emergent community of



elementary teachers from a single school. The former considers itself a network, in that it connects teachers from different schools. It is also part of a broader initiative from the Chilean Ministry of Education to create networks of teachers. The latter has been conceived as a learning community of teachers within the limits of one school, with plans to expand their activity to include teachers in other related schools. Despite this difference, both groups can be characterized as teacher communities oriented toward providing conditions for learning about teaching in collaboration with peers.

### **1.5 Study overview**

In this study, problem negotiation between participants and researchers is approached as a methodological feature, reviewing some of the literature that has emerged to highlight its role in conducting research that is participatory and collaborative. Then, problem negotiation is analyzed in the two teacher communities/networks cases, which are the context to understand its features and identify its implications in specific processes of research implementation. In concordance, the questions guiding this research are the following:

- RQ1: What are the features of problem negotiation in two contrasting cases of teachers using a web-based tool to support conversations around teaching practice?
- a. What are the ideas that teachers want to discuss in conversations with peers within each network?
  - b. What are the ideas that are actually discussed in conversations with peers within each network?
  - c. How are ideas negotiated in each case between participants and researcher?

RQ2: What are the implications of these different negotiations for how teachers used the tool that supported conversations around teaching practice?

- a. How is the use of the tool related to the process of problem negotiation in each of the networks?
- b. What are the similarities and differences in the problem negotiation process between the two contrasting cases?

Guided by qualitative methods of inquiry under the framework of DBR (Design Based Research Collective, 2003), I analyzed data from individual interviews, a small survey, observation of meetings, and activity in the web-based tool designed for the project with the two networks. The analysis involved different rounds of coding data in text format to identify emergent themes and categories. Data from the survey were organized and frequencies calculated. In writing the findings, I used literature on teacher learning in communities, collaboration among teachers, and DBIR to help me understand the features of implementation in the two cases.

Chapter 2 of this dissertation describes the conceptual framework for this study, including a review of relevant literature on learning theories and teacher communities, learning from professional development for in-service teachers, and collaborative learning mediated by technology. The chapter includes a description of ways in which teachers can be supported in learning about practice in communities and teachers' interactions related to change. In addition, I describe the conceptual foundations of DBR, as an antecedent of DBIR, and some of its features. This section provides an account of problem negotiation from the perspective of research around DBIR. In Chapter 3, I provide a detailed description of the methodological approach used to conduct the study

of supports for teachers' conversations about practice in networks and of problem negotiation. I offer a view on the use of qualitative methods in conducting DBR and DBIR and how these perspectives assisted me in approaching this research. Then, I describe the research design, including details about the research site and participants, the intervention, my role in the research, how data were collected and treated, and the plan for analysis.

In Chapter 4 and 5, I provide a thorough description of each of the two cases that provide the context for the study of problem negotiation. In these chapters, I describe the implementation of the project for developing a tool to support teacher conversations in each network. In these accounts, I consider the data from interviews, meeting observations, surveys, and teachers' interactions within the wiki. For each case, I analyze project implementation with an eye on the negotiation stage and highlight the main ideas that help us to understand the role of problem negotiation in each case's implementation. With a similar focus, in Chapter 6, I step back to look at the two cases and contrast the features of problem negotiation they present, illuminated by a DBIR approach. In contrasting the two cases, I intend not to make clear-cut differentiations, but to observe each in light of the other. The findings described in Chapters 4 and 5 for each case provide a picture of the problem negotiation process that serves to illuminate what happened in the other case, including details on the implications they can have for research employing DBIR in general and problem negotiation in particular. Finally, in Chapter 7, I elaborate on some of the insights provoked by this study about the process of negotiating problems in researcher-practitioner collaboration and discuss issues in research that involves different national contexts.

## Chapter 2

### Conceptual Framework

#### 2.1 Overview

This study focuses on the intersection of opportunities for collective teacher learning, the support of conversations about teaching practice in teacher professional communities, and the relationship of teachers and researchers in the process of negotiating the problems of practice that they want to approach. This conceptual framework represents my stance regarding the topic of this dissertation: The study of negotiations between participants and researcher around the problems of practice that are discussed in professional networks that aim to help teachers understand and improve their teaching practice. There are at least three subtopics that intersect in this focus. The first is the *opportunities to discuss and work around teaching practice* that teachers find in professional networks or communities that meet face-to-face regularly; the second is the *features of teachers' conversations in professional networks* and their potential to develop understanding around teaching practice as studied through the development of supports in a process guided by Design-based Research (DBR); and finally, the third is the *process of negotiation between teachers and researchers* during the design of supports for conversations about teaching practice from the perspective of Design Based Implementation Research (DBIR).

This dissertation is about developing interventions to support teacher professional communities and their learning about practice, including how researcher and participants negotiate problems of practice. I initially used a DBR perspective to inform the co-design process conducted with two teacher networks and later included a DBIR perspective to support the understanding of problem negotiation in developing such interventions. I expect that these perspectives for research can provide the means to improve the process of working collaboratively with participants in creating supports for their work as professional networks.

My stance towards this conceptual framework is that of integrating different theoretical approaches in a way such that they together provide a lens through which to understand reality and generate insights (Ravitch & Riggan, 2012). This stance can be described as dialectical, following Jennifer Green (2007), because it uses different theoretical perspectives that together contribute to the understanding of different aspects of the phenomena under study. Consequently, in this chapter I provide a view on these different theoretical approaches and research. I describe the problem and context of this dissertation, connecting the theory about teacher learning, teacher learning in professional communities, teacher interactions and teacher collaboration with the perspectives of DBR and DBIR, which support the process of conducting educational research in collaboration with participants.

## **2.2 Learning in communities**

### *2.2.1 Learning theory and teacher communities*

In this study, and in general, I identify people's learning as deeply connected to the context and culture in which they are situated. In this way, my understanding of learning closely engages with sociocultural theory and situated cognition (e.g. John-Steiner & Mahn, 1996; Lave, 1991; Lave & Wenger, 1991; Vygotsky, 1978). Situated cognition theory understands people's learning as intimately related to the social and cultural context where it occurs, meaning that learning involves interaction with other people in activities that happen within a particular culture and environment. Situated cognition theory shares ideas with many other relevant theories such as critical theory (e.g., Freire, 1993) and everyday cognition (Rogoff & Lave, 1984), as well as with theorists such as John Dewey and his notion of "learning by doing." In this study, situated cognition theory influences the perspective of learning that I consider and particularly the relevance of looking to the context in which participants interact and understanding their activities situated in that specific context. Looking to the context means being immersed as much as possible in the physical places and activities that are characteristic to the participants in their communities and capturing the features of their interactions and the nuances of the meanings they exchange. This can help researchers gain an understanding about the research site and participants that might provide rich details on their practices, perceptions, and values. In order to make more explicit the role of situated cognition in this study, I provide an overview of the theory, describing its central features and the history that is part of its tradition.

Despite the similarities among different learning theories, the theory of situated cognition is particularly related to the socio-cultural theory of learning, historically associated to the ideas of Lev Vygotsky and his colleagues (e.g., Leont'ev) and successors (e.g., Luria, 1976; Wertsch, 1991). Relevant to these ideas is Vygotsky's "claim that higher mental functioning in the individual derives from social life and ... the claim that human action, on both the social and individual planes, is mediated by tools and signs" (Wertsch, 1991, p. 19). Learning and tools have an important relationship in a situated understanding of cognition. Knowledge is seen as a tool embedded in social context, which makes it necessary to grasp the culture in the context of use of knowledge/tools (Brown, Collins, & Duguid, 1989b). Then, learning to use a tool involves incorporating the belief system of the culture in which the tool is used. For instance, supporting teachers' conversations in a web-based environment requires a design that is sensitive to the particularities of teacher culture in a particular context, such as the context of Chilean English teacher networks. They might have a particular practice such as communicating in English language only, even if it is not their first language, because it has a meaning for these teachers that goes beyond their main language of communication in a Spanish language context. A new teacher just entering the network would need to know the practice to be able to use the tool on the web.

The theory of situated cognition, also called situated learning (Lave, 1991)<sup>2</sup>, is a response to the assumption that learning can be separated from the context in which it occurs, as sometimes happens in formal learning contexts, which dissociates knowledge from doing in learning (Brown, Collins, & Duguid, 1989a). Cognitive information-

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<sup>2</sup> Following Driscoll (2005), I integrate 'situated cognition' and 'situated learning' into a single framework and use the terms interchangeably.

processing oriented theories have separated the knowledge that someone can recall, demonstrating declarative ability, from the knowledge that is demonstrated by doing something, demonstrating procedural ability (Driscoll, 2005). Rather than dividing declarative and procedural knowledge, situated cognition integrates the two within a single framework. In this framework, cognition is understood as social and situated (Kirshner & Whitson, 1997). *What* is learned is intimately related to *how* is learned and to the activities carried out as part of learning in a particular context (Brown et al., 1989b). From a situated cognition perspective, one cannot separate knowledge from its context of use if the goal is to produce learning. Knowledge, context, and learning are connected and understanding the work of teachers in network and what they might learn through conversations about teaching practice requires looking to those practices in context and through their activity in that context.

Fundamental ideas behind a situated perspective on learning come from Lave and Wenger's (1991) understanding of learning as a change in identity that occurs by participating in *communities of practice*<sup>3</sup> and the notion of apprenticeship that draws on Lave's anthropological research on Liberian tailoring (1996). Her study found that apprentices developed knowledge and skills of the practices involved in tailoring through a process of growing participation in those practices. The presence of those with more and those with less expertise in the practice allowed for increased understanding of the practice by observation of masters and practicing activities that masters do. She observed

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<sup>3</sup> For Lave and Wenger, "a community of practice is a set of relations among persons, activity and world, over time and in relation with other tangential and overlapping communities of practice" (1991, p. 98). Their notion of community of practice refers to a form of co-participation where learning can be located. Wenger (1998) further elaborated the notion of community of practice in what became his social theory of learning.



that this learning process could prompt a change in identity because the apprenticeship context assumes the existence of a trajectory in which the newcomer will develop necessary expertise to become a master. Lave and Wenger explain this trajectory in the concept of “legitimate peripheral participation” (1991) that is observed in apprenticeship such as that practiced by tailors in Liberia. This concept can be seen in different communities where there is a process of becoming a practitioner of certain practice, such as in teaching in a school, or in becoming a more knowledgeable network member through mentorship from a senior member.

Lave and Wenger (1991) define learning as participation in a community of practice where it is possible for those who participate in the community’s main activity to develop knowledgeable skills and identity. For example, people participating in a web-based environment that shares examples of teaching practice are allowed to first “lurk” around; it is legitimate to observe what more experienced participants do and not to contribute immediately. Novices can read the examples of those with more expertise in teaching or in the community practice and that way learn about the tone, the resources used, and the way participation in the environment is managed. Novices may start developing minor involvement and be mentored by experienced members after a period of time. Later, they can start contributing until becoming more experienced in the practice. Through this trajectory, their identity is transformed from novices to more experienced participants, and their participation changes, moving them from the periphery to the core of the practice. Importantly, identity change happens not only in the individual participants in the community, but also in the community itself through their participation. Therefore, legitimate peripheral participation involves production and

reproduction of the practices in the community through increasing centripetal participation (Lave, 1991), with newcomers assuming a new identity as full participants in the community.

Since its inception, the theory of situated cognition has formed the basis of many studies that embrace the idea that learning is deeply connected to the situation in which it is acquired. The theory was built in Lave's studies of apprenticeship (1988, 1991) and the study of everyday cognition (Carraher, Carraher, & Schliemann, 1985; Lave, Murtaugh, & de la Rocha, 1984) that further fed the development of a new understanding of learning as a social practice in communities (Lave & Wenger, 1991; Wenger, 1998). One example of the theory's evolution is the emergence of the theory from the study of apprenticeship (e.g., Lave, 1988) to its application to teaching and learning in schools (Collins, Brown, & Newman, 1989). The theory began with studies of how people learned in informal contexts as opposed to more formal contexts such as schooling. This contrast was taken as an opportunity to challenge the structure of formal school classroom teaching and learning in the development of strategies such as cognitive apprenticeship (Collins et al., 1989) that could be embedded in classroom practices with the background intention of changing the way learning is supported in schools.

Another example is my observation of the shift in the original definition of situated cognition theory as being related to concrete situations in a shared physical space to including virtual communities. It is not clear if the main proponents of this theory intended to exclusively connect practices to particular physical spaces, but since they refer to learning that takes place in situations unique to the context, such as tailoring in Liberia (Lave, 1988) or street children calculations in Brazil (Carraher et al., 1985), it

seems that the concrete specific place of learning is relevant. With the development of digital technologies this view of situatedness has been expanded from an idea of space to something more fluid and unbounded. For instance, a space can be an online community established in a virtual environment and supported by the capabilities of the Internet. Moreover, it can be a community that shares a common practice, has similar goals, and uses similar tools (Wenger, 1998).

Developing an understanding of a shared practice is one of the goals that a community of practice, from Wenger's (1998) perspective, wants to accomplish. The potential of virtual spaces for education has led to the building of online communities as new spaces to support learning about a practice (Barab, Kling, & Gray, 2004). In these spaces, people engage with others that might not be part of their everyday context, opening "participants to new senses of identity and identification" (Renninger & Shumar, 2004, p. 183). Virtual spaces for community development are not free of challenges. One of these challenges when encouraging people to participate in systems and environments mediated by computers is the difficulty in making time available to do so (Barab, MaKinster, & Scheckler, 2004). Other challenges in becoming a participant in a virtual community include the barriers to technology use that teachers perceive (Ertmer, Ottenbreit-Leftwich, & York, 2007) and the belief they hold about technology (Ertmer, 2005). When conditions for participation are met, the potentialities of virtual spaces for building communities in which knowledge can emerge among participants are strong.

This description of situated learning theory and the ideas that have further developed from it contributes to my understanding of the opportunities for learning that teachers find in communities and provides a lens for studying these opportunities in the

context of professional networks. Stating one's own perspective on how learning takes place and what is involved in the process is not only important in researching about learning, but fundamental as a framework to observe reality and develop ideas from what is observed.

### *2.2.2 Opportunities for learning in professional communities*

Professional communities that are oriented toward teacher learning provide a venue for teachers to share their profession and be part of the larger community of practitioners (Lampert, 2010). While sharing a space with other teachers may offer opportunities for further development of practice, it does not necessarily mean that teachers will develop new knowledge about their practice that might influence teaching. To enhance their learning about teaching, teachers benefit from participating in networks and teacher communities where they interact with others in activities oriented toward develop new knowledge about teaching practice (Lieberman & Wood, 2003; Little & Horn, 2007). This happens especially when teachers have the opportunity to talk with others about their subject, their students, and their work in the classroom (Horn, 2010). Talking with colleagues about practice is a goal that networks in general want to achieve and need to work on to become more effective in creating opportunities for learning from practice as a group. A further benefit of networks oriented toward learning happens when talking about teaching becomes a collaborative analysis of teaching practice. For instance, teachers in professional networks can learn from making their work public within the network and being helped by peers in clarifying features of their work that could be improved (Lieberman & Wood, 2002). This focus on teaching practice and the development of conversations can be both nurturing and productive in understanding

teaching and improving opportunities for network members' learning. In other words, through reflection about their teaching and discussing with peers and unraveling the complexities of student learning, teachers can be more effective in learning about teaching practice.

As indicated earlier, in professional networks teachers have opportunities to learn about their teaching from interactions in the collective space of the network. For these interactions to be more generative – to provide more opportunities for understanding what it means to teach the subject in a specific context – teachers' conversations need to become more oriented to specific issues of teaching practice and enable inquiry of the practice in their exchanges (Cochran-Smith & Lytle, 1999). Moreover, research suggests that:

...conditions for improving teaching and learning are strengthened when teachers collectively question ineffective teaching routines, examine new conceptions of teaching and learning, find generative means to acknowledge and respond to difference and conflict, and engage actively in supporting one another's professional growth (Little, 2003).

In thinking about how to improve conditions for teacher learning in networks, Little's suggestions could facilitate decisions for designing and implementing teachers' activities in which they engage in critical analysis of practice. Teachers in networks share certain practices that are enacted daily in the context of schools. In the case of Chilean teachers, these common practices come from a shared curriculum mandated for all schools by the central government Ministry of Education, which also offers particular

orientations for teaching (MINEDUC, 2009b). These common practices also come from the teaching culture in which teachers are immersed and engaged in processes that are part of the school system. In the context of analyzing how teachers use data to inform teaching practice, Little (2012) refers to the micro-processes that allow understanding of what teachers do in order to enact the required tasks of their job. She stresses the needs for more methodologically sound research on the micro-processes that take place in teacher practice and points to studies in work processes in domains outside education to help conceptualize practice. Practice is different from behavior and from action in that it is more than doing, and even more than doing with purpose; practice is doing with purpose in a situated context and as part of interactions with others in that context (Cook & Brown, 1999). As Little argues, practice:

...is not solely apparent in or enacted through the moment-by-moment interactions among individuals but is also embodied in routines, in categories and classification systems, in scripts and roles, and in tools and artifacts that exist independent of particular actors and interactions (2012, p. 145).

Practices cross the boundaries of an individual and are part of a shared understanding in groups of people doing a similar job in a similar context. This stresses the importance of describing practices and identifying what makes them more than just an action in a professional context. Moreover, studies of workplace practice that focus on the micro-processes that occur in interactions among people have proven informative for the understanding of “the ways that the members of an organization create shared meaning and activity through interaction, [also] employing methods of observation that

capture what individuals do with one another and with the relevant tools and objects of a field” (Little, 2012, p. 147). This can provide a deeper view of what it means to practice in a profession. Since the study proposed here is bounded by the particular context of the teacher professional communities in Chile, it seems relevant to identify the practices of the network members in their schools in order to be able to see the actual connection between practices of different teachers. Working within these boundaries, it is also possible to look at particularities of the interactions among teachers and the practices that can be described from those interactions.

### *2.2.3 Supporting teachers in the analysis of teaching practice*

There is a growing interest in studying teacher learning in the context of professional communities or networks. The studies I describe here are relevant to this dissertation in that they provide insights into ways to support teachers’ collective conversations. In a school-based research implementation, Kazemi and Franke (2004) described teacher learning in collective work that aimed to understand students’ mathematical thinking through the analysis of student data. The researchers documented teachers’ shifts in participation throughout an academic year in monthly meetings, describing the significance of teachers’ analysis of students’ work and the changes in teacher participation perspectives in this analysis. With a focus on communication at the interpersonal level when sharing students’ work, the researchers identified two shifts in teacher participation. The first shift referred to the collective attention of teachers to details in students’ thinking, and the second shift occurred when teachers started developing possible instructional trajectories in mathematics. Moreover, in this study, the analysis of teaching practice was supported by the use of students’ work that helped

teachers to focus attention on both students' mathematical thinking and possible ways to address teaching of mathematics.

In another example, Curry (2008) studied Critical Friends Groups (CFGs), a reform initiative to encourage the creation of learning communities aimed at talking about practice for the collaborative improvement of teaching (NSRF, 2011). In her study, Curry analyzed the work of six school-based multidisciplinary CFGs and the particular features of their design. The study focused on four CFGs' features: diverse menu of activities, decentralized structure, interdisciplinary membership, and use of protocols for structuring conversations. These features provided opportunities and also constrained the CFGs' goal of improving teaching practice for the enhancement of conditions for student learning. Particularly, the feature of using protocols for discussions can be seen as a concrete support for focusing conversations around teaching practice in a style that challenges the usual interactions among teachers or, as the author states, "conversations about practice that ran counter to traditional occupational norms of teaching, like privacy, noninterference, conservatism, and congeniality" (2008, p. 764). The protocols encouraged the 'deprivatization' of practice and offered explicit instructional advice through providing the space to ask challenging questions and critique the practice of others. At the same time, the CFGs' protocols constrained the discussion of emergent issues and produced certain ritualized patterns in members' discourse that could affect the depth of inquiry in the CFGs.

Both Kazemi and Franke's (2004) and Curry's (2008) studies represent the pursuit of collective discussion around practice. In the latter, the focus is on student work so to develop understanding of students' thinking. In the former, there is a shift in



perspective to the dynamics of the community and the tensions arising from their norms and the interaction of those norms within the school context. Both studies provide insights about how to support teacher conversations in collective spaces oriented to improve teaching practice. However, the particularities of context reveal the need for developing supports that take those particularities into account for designing those supports for teachers' conversations around practice.

In another study, Horn (2010) examined teacher collegial conversations to understand how interactions with colleagues in schools support teachers' informal learning. Through the analysis of two related discourse structures ('teaching rehearsals' and 'teaching replays'), Horn focuses attention on teachers' interactions and the opportunities for potential learning that can emerge from collegial dialog in a school that autonomously developed a learning community. In this case, the author joined a group of teachers with a long history of collaboration centered on mathematics teaching, and she documented their conversations. The ethnographic approach in this study allowed "the investigator to 'make sense' of the world from the perspective of participants" (Eisenhart, 1988) and develop understanding from an insider perspective. The study did not explore the influences of teachers' relationships in the conversations they developed, although given the experience they had cumulated this could be an interesting approach for understanding what other factors affect teacher conversations about practice.

Overall, these investigations are helpful in identifying the types of contexts where teacher collaboration for the analysis of teaching has emerged and the type of activities and supports they have developed in those contexts. Moreover, these studies provide relevant insights into the type of work teachers do when they analyze their own practice

and how it has been studied. Two elements of this work are particularly salient. The first is that in the approaches studied teachers use student work and/or teaching instances enacted by teachers in the classroom to discuss teaching. Therefore, the use of ‘records of practice’ (Lampert, 2001) offers a support for focusing attention on specific aspects of practice (Ball & Cohen, 1999). The second is that the investigation of the analysis of teaching in communities of learning has usually been approached from an ethnographic perspective in which the researcher has a deep involvement in the context and intense collection of data on interactions and conversations among teachers in these groups. These two elements support the idea of considering the particularities of context for developing supports for conversations around practice.

#### *2.2.4 Teachers’ interactions and influences for change*

As is the case in other types of organizations, teachers in schools influence one another through their interactions (Frank & Fahrback, 1999). These can be formal interactions such as school meetings or designated professional development activities or informal interactions such as encounters in the staff room or conversations in the hallway (Penuel, Riel, Krause, & Frank, 2009). Importantly, these interactions influence behaviors of teachers in their teaching practices, which in turn affect their views of practice and eventually lead to change. Educational reform usually expects that professional development leads to changes in practice, but it is difficult to identify what, in particular, best facilitates change (Penuel, Fishman, Yamaguchi, & Gallagher, 2007). In their study, Penuel et al. (2007) found that teachers reported more change when there was collective participation in their professional development activities and, particularly, participation of other teachers from their same school. This supports the idea that having

collegial interaction centered on professional development enhances opportunities for change and development of teacher knowledge.

Social network analysis is a set of methods that allows visibility of the effects that social interactions have on people who are related in some way (Kadushin, 2012) and as such has been growing as an approach used to understand how interactions influence teacher behavior. These methods provide a perspective grounded in statistical models that measure the effects of social interactions on people's behavior changes. Some studies that use these methods have identified how participation in communities of learning can impact social networks (Penuel, Frank, & Krause, 2010) or how teachers informal interactions with others who have participated in professional development activities outside of their schools benefit from their knowledge when they are back in their original schools (Sun, Penuel, Frank, Gallagher, & Youngs, 2011).

Social capital is another potentially useful theoretical perspective in studying the influences of formal and informal social interactions of teachers in their enactment of changes in instruction. Social capital theory was employed by Penuel, Riel, Krause, and Frank (2009) as a lens understand the flow of resources and expertise through social interactions that allow people to access and use resources that can affect change. In studying teacher communities, Penuel et al. (2009) combined social network and interview methods to explore the distribution of resources and expertise within different schools and to identify the reasons for their differing levels of expertise in implementing reform. These researchers provide both an interesting view of teachers' exchange of resources as a function of their social interactions and an example of how those exchanges motivate change in teachers' practice.

### **2.3 Teacher collaboration mediated by technology**

Although teachers have historically developed their practice isolated in the privacy of the classroom (Lortie, 1975), the need for improvement in order to adapt to new and more challenging instructional demands has emphasized the relevance of interaction among teachers. Voluntary interaction among teachers with the shared goal of improving their profession, sharing responsibility for activities, and developing accountability for outcomes may lead to collaboration (Friend & Cook, 1992). However, collaboration is hard to achieve because it requires certain conditions, such as the ones just described, in order to generate benefits for those engaged in working together (Dillenbourg, 2002). Working together with other peers in a highly interactive manner can contribute to learning for those involved, although it is not a natural consequence of such collective work.

Some of the conditions needed for collaboration can be supported by technology. For instance, researchers have shown that collaboration mediated by computers has benefits such as producing a broad range of ideas among participants when working together and distributing participation more equally (Finholt & Teasley, 1998). These strengths of computer-mediated collaboration suggest that collaborative interactions among teachers can be positively supported using technology. Moreover, continuous technology evolution makes tools available that, when appropriately designed, are powerful for supporting collaboration (Deal, 2009). The approach of computer supported collaborative learning (CSCL) is also pertinent to this discussion. CSCL focuses on the development of computer programs to support interaction between peers and group work oriented toward learning. In CSCL, technology mediates interaction between participants

by delivering information, regulating the tasks to be performed, administering rules and roles, and mediating the acquisition of new knowledge (Kumar, 1996). These benefits of CSCL are not spontaneous, however. Researchers have found that social interaction categories such as explanation, argumentation/negotiation, and mutual regulation seem to facilitate learning (Dillenbourg, Järvelä, & Fischer, 2009). Computer-supported collaborative activities that encourage discussion where people have to explain their ideas to one another, provide justification and support for them, and mutually negotiate participation may be productive in creating conditions for learning.

A general idea in CSCL is that collaboration can be supported by engineering CSCL environments through careful design (Dillenbourg et al., 2009). This idea rests in the understanding that collaboration requires support and that certain conditions are needed to achieve collaboration and to receive benefits from the collaborative interaction. Dillenbourg et al. argue that “the purpose of a CSCL environment is not simply to enable collaboration across distance *but to create conditions in which effective group interactions are expected to occur*” (2009, p. 6 italics in the original). Through the use of computers to support collaboration, these conditions for effective group interaction can be created. According to Roschelle and Teasley (1994), the resources provided by computers can support collaboration by disambiguating language that may interfere in communication and overcoming impasses that are natural in social interaction. The mediation on the use of language seems particularly relevant if we think about computer systems that are used by people at distance and where individual’s interpretations can be just as problematic as they can be productive. Moreover, there seems to be agreement on

the limits of this mediation and the need for combining online distance use of the systems with co-present use to support collaboration (Dillenbourg et al., 2009).

Different environments can be useful to support collaboration among teachers when designed carefully and clearly oriented toward creating conditions conducive to effective interaction. Systems that encourage voluntary participation, shared goals, shared responsibility for activities, and accountability for outcomes can be powerful support for collaboration. However, they need to be designed also for sustaining communication and helping to solve problems in mutual understanding, favoring explanations, argumentation, and negotiation of activities by participants.

## **2.4 Researching the design of tools in collaborative implementation**

### *2.4.1 DBR: studying instructional tool design in context*

The goals of Design-Based Research (DBR) methods are oriented to research on learning in context through a process where the design and the study of instructional strategies and tools are enacted in an integrated approach. Continuous cycles are included to produce iteration within the study and between researchers and participants (Design Based Research Collective, 2003). This tradition is rooted in an understanding that the process of creating learning environments to support particular educational goals is part of the research agenda and is supported in the researcher-participant relationship. The methodological alignment that DBR provides in engaging people around theory, implementation of interventions, and measurement of outcomes makes these relationship important (Hoadley, 2004). This methodological perspective offers affordances for developing supports for teacher networks in their process of learning about their practice

in a context that has particular features – for instance, time restrictions, sporadic meetings, diversity of workplaces. DBR provides a perspective to structure a research study where researchers and practitioners can jointly develop strategies to support learning in the professional networks.

The Design-Based Research Collective (2003) described this perspective with five characteristics: 1) the intertwined nature of designing learning environments and developing theories or “prototheories” of learning, 2) both development and research happen through iterative cycles of design, enactment, analysis, and redesign, 3) research in this project should produce theories shareable with practitioners, 4) research must include explanations on how a design works in authentic settings, and 5) uses methods that can provide means for documenting and connecting enactment of designs to outcomes. These characteristics of DBR offer this perspective a profile that makes it a productive way to look at teacher professional development, among other education phenomena. DBR seems particularly suitable to developing new knowledge about modes of teacher professional development that involve the use of online tools which have been scaling but about we still do not know much regarding design and implementation (Dede, Ketelhut Jass, Whitehouse, Breit, & McCloskey, 2009).

#### *2.4.2 DBIR: a new perspective in conducting design-based research*

From the shared purpose of improving access to powerful, effective learning opportunities for all learners (Fishman, Penuel, Allen, Cheng, et al., 2013), Design Based Implementation Research (DBIR) has recently emerged as a perspective in research that is oriented toward using evidence for designing, evaluating, sustaining and scaling educational interventions. This perspective acknowledges the importance of collaboration

among multiple actors in pursuing innovations that are based in sound existing knowledge about the problems of practice that the innovation is trying to address. A common issue in developing educational interventions is the complexity of finding solutions that can be meaningful and effective in different contexts and for different people. It requires a careful look at not only to theories of learning, but also theories of implementation and organizations, which collectively influence the design of interventions and the methodologies used to answer questions (Penuel, Fishman, Cheng, & Sabelli, 2011). In learning what works, for whom, and under which conditions, considering these theories and the participatory engagement of diversity of actors is critical. DBIR seeks to address systemic change from a new understanding of the roles that these actors play in ways “(...) that make it more likely that practitioners can adapt innovations productively to meet the needs of diverse students and that durable research–practice partnerships can sustain innovations that make a difference” (Fishman, Penuel, Allen, Cheng, et al., 2013, p. 137).

DBIR uses various design-based methods to develop solutions to problems of practice and to study implementation of those solutions. These research traditions are part of DBIR’s background as antecedents that inform how to conduct research activities under this perspective and at the same time create space for reconsideration of the methods as they illuminate interventions aimed to sustaining change in education. DBIR can be seen as a new development of *Design-Based Research*. It is listed among the research traditions that precede this emergent perspective for its broad presence in research that aims to contribute to practical solutions to problems. In the learning sciences and education in general, DBR is an approach that involves iterative design and



testing of innovations in learning environments, such as classrooms or other contexts, to improve their quality and capacity to affect change. It involves the creation of theory and tools that can support innovation through the study of implementation and by trying out diverse solutions.

Among other antecedents of DBIR, Fishman et al (2013) mention *evaluation research*, which involves many lines of studies concerned with evaluating interventions; *community-based participatory research*, a tradition that seeks to bring people from outside of academia to participate in research and in this way create space for marginalized views about reality that can be relevant to understanding phenomena; *implementation research* a tradition developed to test the fidelity of implementation by analyzing the conditions by which programs can be implemented effectively; and *social design experiments* that aim to develop new tools and practices that as a whole represent arrangements that researchers and practitioners agree on in close partnership.

Identifying the antecedents of DBIR contributes to understanding the foundations of this novel perspective and sets the stage for learning about its features and basic elements, which are under development, and offers a view on what can be considered DBIR. Penuel et al. (2011) outline four elements that are characteristic of DBIR programs and differentiate them from other design-based research programs and policy research. These key elements (1) begin with a special orientation to persistent problems of practice approached from multiple stakeholders' perspectives, (2) involve commitment to iterative and collaborative design of interventions, (3) seek to develop theory related to classroom learning and implementation by developing systematic inquiry, and (4) seek to develop capacity for change in systems that is sustained over time.

A core idea in these elements is the way in which problems are defined. ‘Problems’ are issues that interact with learning opportunities, blocking or making student access to them difficult; problems here are issues related to practice or how things are done in an educational context. Therefore, under a DBIR perspective, problems need to be defined so that they are centered on practice and in which practitioners are included. For instance, instead of defining a problem that relates to classroom instruction, such as how to develop productive conversations in elementary school, by starting with the literature, DBIR researchers engage in inquiry with elementary teachers, and perhaps other related actors, such as curriculum coordinators. Together they develop a shared understanding of the problem and elaborate some potential ways to address it in a way that is meaningful and relevant to the context.

Collaboration is a fundamental element of the DBIR approach and is necessary in designing interventions that can be taken up by practitioners. In this way, researchers, teachers, school and district leaders, and policy makers engage in the process of designing, developing, testing, analyzing and redesigning interventions aimed at addressing the problems of practice that they have identified. Improving learning environments in classrooms for students has been of intense interest for learning scientists, but because of the difficulty of affecting change in terms of scaling and reproducing innovation from this perspective, some researchers have begun to shift focus to the learning of teachers (Penuel et al., 2011) and organizations (Honig, 2008).

In this effort, research knowledge and theories in the available literature is another key element for developing DBIR. Theory is used to make decisions regarding how to address the problems of practice researchers identify and as a way to promote quality in

research while developing new theories in the process. DBIR aims to develop and refine theory through systematic inquiry (Cobb & Jackson, 2011). This theory includes explicit ideas about how to support classroom learning, prepare teachers and administrators to implement programs, and coordinate implementation (Penuel et al., 2011). Knowledge that has been already developed in other investigations and theories tested in different fields contribute in identifying potential perspectives to address the problems of practice that emerge in a particular context. For instance, learning theories are used to support decisions about how to design instruction to improve conditions for learning. However, most importantly is to develop theories that can help in the understanding of the phenomenon under study and illuminate courses of action.

Sustaining change is possible when there is installed capacity to replicate and adapt interventions that focus on improving learning opportunities. Developing this capacity is a DBIR concern and has been identified as a key component of this emergent methodological perspective (Fishman, Penuel, Allen, Cheng, et al., 2013; Penuel et al., 2011). I would argue that is one of the most important differences between DBR and DBIR, as it brings the idea of making a good idea that works for one context and with one group of people better suited to work in other contexts and with other people.

As a way to illustrate these elements, I provide a small view inside one study that has systematically engaged in the process of iterative design interventions while collaborating with different actors. The Middle School Mathematics and the Institutional Setting of Teaching (MIST) project at Vanderbilt University “seeks to develop an empirically grounded theory of action for improving the quality of mathematics instruction at scale” (Cobb, Jackson, Smith, Sorum, & Henrick, 2013). This project has

been highlighted by several DBIR scholars (e.g. Penuel et al., 2011; Russell, Jackson, Krumm, & Frank, 2013) as an example of the embodiment of DBIR elements. Regarding the first element, “focus on persistent problems of practice from multiple stakeholders' perspectives” (Penuel et al., 2011, p. 332), MIST project focuses on a long-standing problem of practice that has scarce research on which to support decisions (Cobb et al., 2013) and looks to include different stakeholders perspectives, including school and district leaders, teachers, and experienced coaches. The project aims to contribute to the improvement of quality mathematics instruction by focusing on teacher learning, an area of educational change that has proven difficult to affect. Project researchers approached the challenge of working with teachers by considering research on mathematics education and identifying what counts as high-quality mathematics teaching, teacher learning, and teacher professional development. They have developed a theoretically sound understanding of teacher improvement and have worked collaboratively with different actors to test and refine “conjectures about supports and accountability relations that scaffold and press for teachers’ reorganization of their instructional practices” (Cobb et al., 2013, p. 323). This commitment to collaboration and iterative design of strategies and supports is representative of the second element of DBIR and also connects to the third element in showing “a concern with developing theory related to both classroom learning and implementation through systematic inquiry” (Penuel et al., 2011, p. 332).

MIST’s primary research goal is to develop a theory of action intended to guide district leaders in designing policies or strategies to improve middle-grade mathematics instruction. Their theory is “also intended to serve as a tool to explain why particular strategies may or may not achieve the intended results” (Russell et al., 2013, p. 170). The

project uses Argyris and Schön's (1974, 1978) ideas of theories that are developed for people to make things happen. That is, the project aims to lead the process of events that will produce solutions to problems and develop explanations and predictions regarding what would happen if the solutions were implemented. Developing goals is an important part of a theory of action. In MIST, researchers identified district leaders' goals, developed theories for instructional improvement in math, and contrasted them with the theories that district leaders were using. They then provided feedback and recommendations to leaders on how to adjust the theories and make them more effective (Russell et al., 2013).

Finally, regarding the fourth DBIR element defined by Penuel et al., MIST work is "concern[ed] with developing capacity for sustaining change in systems" (2011, p. 332). Researchers use the context of MIST to test, refine, and elaborate empirically grounded theories of action for improving the quality of instruction in large school districts at scale. This theory of action, which draws on findings from the first phase of the project, is intended to generalize to other districts that are reforming middle-grade mathematics given a set of assumptions (specific goals for students' learning, specific visions of math instruction, etc.) and conditions (contextual features such as number of novice teachers, disparities in achievement, etc.). Design-based research is typically used to improve teaching and learning at the classroom level, but MIST adapted that purpose to study, theorize, and contribute to instructional improvement at the scale of large districts. The strategies developed by MIST were tested and improved at the level of a district instead of the classroom, using the strategies designed by district leaders instead

of their own, and in a timespan that went beyond the typical 1-lesson duration to fit the timescale of a school year (Russell et al., 2013).

#### *2.4.3 Problem Negotiation: confluence on problems of practice*

In studies that involve researcher/participant collaboration for designing educational interventions, the “focus on persistent problems of practice from multiple stakeholders’ perspectives” (Penuel et al., 2011) can be instrumental for the success of the intervention. DBIR studies therefore call for different perspectives to converge and be used together to find the best solutions to problems of practice that have been jointly identified. Investigating these solutions is central to the endeavor that Research-Practice Partnerships (RPP) (Coburn, Penuel, & Geil, 2013) engage in and requires identification and deep understanding of the problem of practice under investigation. Developing understanding is a basic requirement for partners to collaborate and develop designs to address the problems of practice iteratively (Penuel et al., 2011).

Researchers and practitioners come from different subcultures and might not share views on what can be done to address a problem of practice, requiring acting in a space in which the focus of their work can be negotiated (Penuel et al., 2013). I understand here the idea of negotiation as a process by which different individuals or groups exchange ideas to reach understanding on something that is of interest to both parties. Negotiation is central in RPP and participatory research, as highlighted in studies that involve participants in contexts such as the one in this dissertation study. This happens usually in areas such as public health, research with indigenous communities, and research in international contexts (e.g. Potvin, Cargo, McComber, Delormier, & Macaulay, 2003; Wilmsen, 2008). Discussions about negotiation centrality have emerged

as researchers and practitioners begin to realize that programs oriented toward solving problems in practice can hardly affect change if they do not consider the context and experiences of those who are involved in such practices. Moreover, negotiation can be effective only when partners are aware of the need for one another to address their own and shared goals, and this is only possible when partners are considered equal (Potvin et al., 2003). This kind of participation in partnerships is still an area under development in education research, and in DBIR where future research and development is needed to “position researchers and practitioners as partners in educational change” (Penuel et al., 2013, p. 238).

Converging ideas of what matters to solve a problem of practice can produce many different opinions depending on who is involved in the conversation. As noted above, in RPP, differing views of the context and the problems of teaching and learning can produce important misalignments. Penuel, Coburn, and Gallagher (2013) describe a case of a partnership between Bellevue District and the University of Washington where researchers and practitioners tried to repurpose a science curriculum and encountered several challenges because of their different perspectives about what needed to change. This differing view of problems and solutions highlighted the importance of finding common ground where people from different subcultures with different opinions and perspectives could find a local solution. As the authors note in citing Galison, this can be seen as a *trading zone* or “social spaces where people can debate and exchange ideas, and they are also material spaces where people engage in various forms of “place-making”: building collaboratories, creating new types of organizations, and organizing coalitions for action or reform” (1997, p. 238).

In this example, two interesting concepts help in understanding how partnership members arrived at solutions in the trading zone (Penuel et al., 2013): One concept is achieving some form of *resonance* in those called to implement an innovation or explicitly arriving at ideas that provide a shared meaning regarding the problems at hand. For instance, teachers in a school called to implement a new curriculum need to identify the contents and strategies in that curriculum as something that makes sense to them, because they know it or because it is responsive to their context. The other concept refers to the development of a *hybrid language* that can act as a symbolic representation of the partnership. Many times, researchers come to sites with plenty of sophisticated terms in a discourse that is not necessarily followed by participants. Likewise, although less influential because of researchers' positions of power, participants may use concepts and language in the research site that are not accessible to researchers. Softening the contours of this divide seems necessary to create open and direct communication, facilitating dialogue and understanding between partners to favor the definition of problems in research-practice collaboration.

In addition to the conceptual tools of resonance and hybrid language, another useful concept is that of a *broker* (Wenger, 1998). A broker is a person – it can be also a group of people doing brokering – who creates connections between different contexts and “can introduce elements of one practice into another” (Wenger, 1998, p. 105). As Wenger notes, this is a term that Penelope Eckert introduced to explain how school youth are constantly bringing new ideas, interests, styles, and news to their groups. A broker seems to be able to cross boundaries easily with the purpose of introducing ideas and, especially, practices from one world to another or from one community of practice to



another. The concept of broker is very useful for studying negotiation in RPP in that it provides a framework for understanding how partners exchange ideas. A broker, in the act of brokering, makes it possible for ideas originating in one group to hook in with those in the other group. The job of a broker entails complexities; in Wenger's perspective, "it involves processes of translation, coordination and alignment between perspectives. It requires enough legitimacy to influence the development of a practice, mobilize attention and address conflicting interests" (1998, p. 109). Also, in direct connection with the potentiality of affecting negotiation, a broker can create connections between practices in transactions that seek to produce learning by introducing elements of a practice into another practice. For instance, in RPP a schoolteacher leader who is also a professional developer for a research project, due to her multi-membership experience, can connect the practice of teaching a school discipline with that of a new instructional practice that research wants to introduce. Through her participation in these two contexts she can support negotiation in a unique way, brokering with the groups to connect their practices. I believe these conceptual tools can be helpful for understanding the negotiation process in this research study, as I identify the features of such negotiation process.

Additionally, Penuel, Coburn, and Gallagher (2013) propose a useful perspective on how to approach problem negotiation in practitioner-researcher partnerships by describing a set of challenges that have emerged from studying partnerships. The challenges are:

- Defining clear roles and lines of authority for action,
- Building boundary practices for collaborative design,

- Anticipating the “counter-normative” in establishing the partnership,
- Involving people at multiple levels of the system, and
- Constructing multiple frames for the work for use in different settings.

Defining clear roles and lines of authority can be helpful when encountering conflicts within the partnership. Having a common understanding of who to contact when issues arise and what path to follow in solving them may eventually help overcome conflicts. Then, anticipating the roles and the authority figures – based on expertise in the topics involved in the partnership – can contribute to more fluidly finding solutions to potential problems. Regarding the second challenge, Penuel et al. (2013) highlight that all participants in the partnership can feel part of building a project together. This is done by organizing joint work and building boundary practices to make sure that everyone has space to contribute and have not only their voice heard but also see their contributions playing a role in the implementation.

Another challenge is to anticipate the “counter-normative” in establishing the partnership, identifying what aspect of the innovation might go against the norms and cultural aspects of the groups working in the partnership. This challenge requires particular sensibility from every partner regarding the expectations that the others have for the innovation and knowing what could be conflicting with those expectations. A fourth challenge the authors mention is involving people at different levels in the systems. Given high turnover in schools and districts, it is important to get people at different levels to become part of the partnership, so when there is turnover at a higher level (such as the principal), remaining members hold the collective memory of the project and sustain buy-in of other members. Finally, partners need to build connections

between the realities of each, facilitating communication and understanding of one another's context. In this way, partners are able to bridge the cultural divide between researchers and practitioners.

#### *2.4.4 DBR and DBIR in this study*

Of all the research traditions described in section 2.4.2, Design-Based Research (DBR) is the most deeply connected to this dissertation study. I included DBR in the methods used for the intervention carried out with teacher professional networks in Chile. The intervention involved cycles of design, enactment, analysis, and redesign of scaffolds for conversations about teaching practice among networks members in a process of co-design between teachers and researcher (Cobb, Zhao, & Dean, 2009; Design Based Research Collective, 2003). This intervention gave substance to the further argument of this dissertation as a study of the conditions necessary for negotiating problems of practice in collaboration between participants and researchers – a concern that can offer insights about implementation. The potential of an intervention to affect change and be sustained over time is what connects this study with the “Implementation” component of DBIR.

## **Chapter 3**

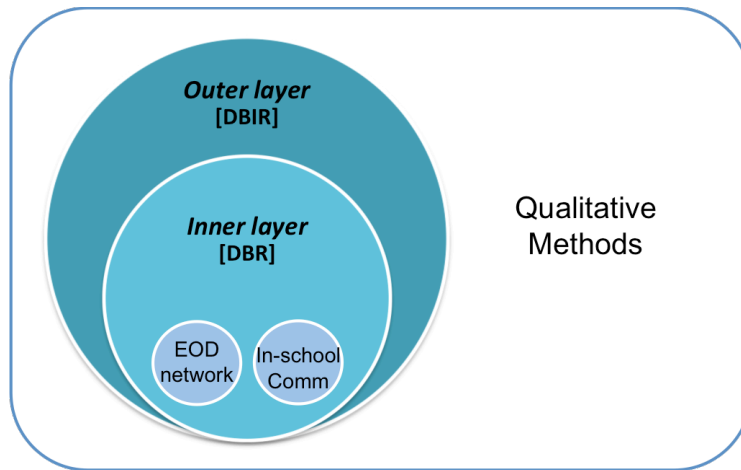
### **Methods**

#### **3.1 Methodological stance**

This study is oriented toward understanding the features of participant-researcher negotiation in a design-based research study to develop supports for conversations about teaching practice in teacher professional networks. The focus is on identifying features of the negotiation process, describing the implications of such negotiation for teachers' involvement in an intervention. My methodological stance in this study includes two perspectives: Design Based Research (DBR) and Design-Based Implementation Research (DBIR). These two perspectives are not mutually exclusive nor unrelated, but complementary in that both involve methods for approaching the inquiry in a way that is respectful of the context and considers participants as active actors in the research project. DBR played a more central role in one part of the study and DBIR on another part of the study, but both perspectives work together in the quest for illuminating features and describing processes in a particular context when conducting research that is interrelated with practice.

This study has a structure that includes two studies in different layers. The inner layer is the study on developing tools for supporting teachers' conversations about teaching practice within two professional communities in Chile. The outer layer is the

study of the negotiation that took place in the first study and how that negotiation might have shaped teachers' participation and use of the tool that was meant to support their conversations about teaching. The outer layer, in some ways, represents a meta-study of the inner layer. It looks at the features of negotiation in an intervention that required participant-researcher collaboration and contributes to understanding how the inner layer study was affected by the process of negotiation. In other words, the outer layer uses the inner layer to illustrate the ways negotiation worked in two different phases with different groups of participants. In these studies, the two methodological perspectives included in this dissertation play a role by contributing to developing a process of design, enactment, assessment, and redesign in the inner layer study and the negotiation process that took place. Qualitative methods are used to capture participants' perceptions, ideas, and experiences regarding the implementation in the inner layer study. Figure 2 provides a schematic view of the relationship between methods and studies, and Table 1 describes their respective roles.



**Figure 2:** Relationship between methods and studies included in this dissertation.

Methodological perspective	Inner layer	Outer layer
Design-based Research (DBR)	Cycles of joint design with participants and documenting of the process to iteratively improve intervention.	
Design-based Implementation Research (DBIR)		Apply DBIR problem negotiation understanding to the study of negotiation in participants-researcher collaboration in designing supports for conversations about teaching.
<b>Methods used: Qualitative</b>	Describe intervention process in two teacher learning communities from observation notes, survey data, memos, and interviews with participants.	Use descriptions, memos, and interview data to identify features in negotiation of problems of practice to be addressed by intervention.

**Table 1:** Methodological perspectives and role in this dissertation.

The inner layer of this study incorporates the work conducted with two groups of teachers. One corresponded to a professional network of teachers of English that emerged under the umbrella of the English Open Doors program, which I am calling the *EOD network*. The other group of teachers was a community hosted within one private school, which I am calling the *In-school community*. These two groups of teachers can be seen as

teacher communities, as both gather teachers who share goals and organize their activities to achieve those goals with a focus on learning about their teaching (Ball & Cohen, 1999). The EOD network is a distributed community: Teachers have a shared curriculum – English – and a shared practice in teaching, but do not have a shared context, making it likely that each member has differing needs. The In-school community is located within one school where members share a context of similar students, same leadership, same access to resources, and likely share similar problems, but they teach different subjects, which gives them a different set of issues. In the following section, I describe the relationship between DBIR and qualitative methods, highlighting the use of these perspectives in this study.

### *3.1.1 DBIR and qualitative methods*

DBIR is oriented toward developing research that provides sound explanations for how educational interventions work and how we can make them better, contributing to advancing teaching and learning in context (Fishman, Penuel, Allen, & Cheng, 2013). Much research can be solid and make use of rigorous methodology to answer questions, yet not consider how interventions may work in particular contexts. Context is given an important place in DBIR and Design-Based Research (DBR). The goals of DBR methods are oriented toward research of learning in context through a process where the design and the study of instructional strategies and tools is enacted in an integrated approach. Cycles of design, enactment, analysis, and redesign are considered to produce iteration within the study and between researchers and participants (Design Based Research Collective, 2003). This is rooted in the understanding that the process of creating learning environments to support particular educational goals is part of the research agenda and is

supported by the researcher-participant relationship. This is a relationship that develops in a place and a space; namely the context of implementation that researchers need to examine and embrace in order to develop solutions that can be responsive and effective in that context.

For understanding context, researchers need to look closely not only at the visible facts of the research setting, but also at the meanings that participants and they themselves construct separately and together. In this study, understanding the meaning of collective experience and participants' learning from their perspective is consistent with the qualitative ethnographic tradition. Eisenhart points out that:

[f]rom this perspective meanings and actions, context and situation are inextricably linked and make no sense in isolation from one another. The “facts” of human activity are social constructions; they exist only by social agreement or consensus among participants in a context and situation (1988, p. 103).

The social constructions that participants and researchers build through DBR are possible to understand only by looking at details and offering descriptions based on the perceptions of people involved. Qualitative methods are often used within DBR approaches, providing tools such as individual and group interviews, field notes, and researcher reflective memos that serve as descriptive data for developing an understanding of the context and the meanings that emerge from people in that context.

Although DBIR considers the use of a wide range of methods from both quantitative and qualitative traditions, there is evidence that recommends using methods that are specific to the idea of designing interventions with participants in context, such



as classroom-based design-research methods (Cobb, Confrey, diSessa, Lehrer, & Schauble, 2003). In one DBIR study, researchers found it relevant to use quantitative measures to unpack the role of social networks among teachers and other actors in a school, identifying the ties among participants that might not be visible otherwise (Russell et al., 2013). There was also a search to understand the content of the relationships that those ties were making explicit, which was done through the use of qualitative methods. These methods looked to the content of the interactions to provide an understanding of how people worked together, what kind of ideas they shared regarding teaching, and the resources they exchanged that might influence their teaching. Likewise, other studies that use survey-based research methods and randomized controlled trials can elaborate theory and generate empirical findings by also using case studies that provide a descriptive and detailed account of learning in an intervention (Russell et al., 2013).

### *3.1.2 DBIR methods applied to this study*

As noted at the beginning of the chapter, this study aims to understand how participants and researcher negotiate a problem of practice to be addressed in a design-based research intervention and uses such intervention to illustrate the process by which both participants and researcher worked in creating shared meaning. The intervention employed design-based research methods to develop supports in collaboration with participants in cycles. DBR offered affordances for developing supports for the professional networks in their process of learning about their practice in a context that has particular features – for instance, time restrictions, sporadic meetings, and diversity of workplaces (Gomez, 2012). DBR provided a perspective to structure a research study in

which researcher and participants could jointly develop strategies to support learning in the professional networks. Consequently, the study was designed to include several cycles of design, enactment, analysis, and redesign in a cycle timespan that was brief – about a month – and to allow teachers in the networks to engage in each part of the cycle. Before, during, and after the cycles, I, as researcher, collected data on teachers’ perceptions, face-to-face meetings, and teachers’ interactions within the online tool developed for the intervention.

The “implementation” component was included in this design-based research study at the time of analysis, which showed issues in the DBR study that helped focus this work in the DBIR. At this point, it might be important to briefly describe the process by which I came to realize that this was a study that could contribute to developing new understandings of DBIR. I began this dissertation informed by a previous study of a group of three Professional Networks (PNs) of English language teachers in Chile (Gomez, 2012). In this study, I learned that networks have varied goals and usually conduct activities related to exchanging teaching materials and creating opportunities for students’ sharing of language skills. I also gained access to the policy agency that supported the creation of these networks in the country – the Ministry of Education's English Opens Doors (EOD) Program – and learned that these networks originated as a response to the need of ongoing professional development for teachers of English in the country. This policy innovation was informed by research on professional learning communities showing positive gains for teachers participating in these communities, and therefore recommending a focus on creating these PNs (MINEDUC, 2009a).

In the study with teachers in the PNs, I learned about the kinds of problems of practice that they wanted to work on and the needs they were looking to fulfill by participating in PNs. Overall, they were interested in exchanging curriculum materials and sharing with others their experiences in teaching. Although teachers had a declared interest in discussing ways to improve their teaching, most of the experiences shared in the meetings observed in the study focused on relieving stress from work. In addition, from the perspective of an EOD representative interviewed in the study, teachers in PNs are interested in sharing and developing instructional materials, discussing lesson plans, assessing student progress, practicing the use of English language, and, in general, developing activities in which students can use English (MINEDUC, 2010). Overall, something that all the PNs I studied were doing was talking about their work at monthly meetings. They consistently held conversations about aspects of their teaching that were satisfying, problematic, or moving in some way.

Thus, I wanted to study PNs conversations as a way to understand how teachers' talk could be a means for learning and improving teaching practice. This meant to me, based in part on communities of learning and teacher learning research (e.g. Ball & Cohen, 1999; Borko, 2004; Darling-Hammond & Richardson, 2009), that teachers in PNs have access to spaces in which they can discuss their teaching in very specific ways, looking at concrete examples of practice. In reflecting with others around specific aspects of practice, teachers might be able to develop a deeper understanding of how to improve teaching in their disciplines. The Chilean PNs emerged with an orientation; a declared intention of building a space for teachers to do something similar to what has been described in the communities of learning literature. Conversely, the policy that created

the PNs as part of the EOD initiative for English language learning in the country placed high value on the creation of communities of learning, called Redes Pedagógicas Locales (Local Pedagogical Networks). In their official documents, these professional networks are included as a strategy to enhance the profession through sharing of experiences, collaboration around teachers' interests and needs, joint development of curriculum materials and strategies, and collective reflection to build shared pedagogical understanding (Education Resolution document issued by Ministry of Education, 2003). However, my observations of teachers' work in PNs showed a somewhat different reality, in which intended collective reflection about teaching seemed eclipsed by other needs and interests. Although legitimate and potentially productive, these needs and interests seemed to take teachers away from reflecting about specific aspects of their teaching practice.

Based on previous research, I proposed a study aimed to develop supports for teachers' conversations in professional networks so they could become more oriented toward teaching practice. As stated previously, this would improve opportunities for learning about practice in interaction with colleagues. The study used DBR as the approach to develop these supports, consistent with my conviction about the importance of including participants in the design of interventions in order to favor their engagement and disposition toward implementation, make their voices heard in the design process, and build the tools collaboratively. For reasons that are explained elsewhere in this dissertation, the initial design of the study was directed to English teacher networks, but then also included a group of teachers who were interested in getting together and becoming a network. This group, the In-school community, emerged within one school,

gathering teachers from different elementary level disciplines that shared goals similar to the EOD network regarding sharing teaching experiences and exchanging ideas about practice. Therefore, the DBR process was implemented with these two teacher communities.

This story is relevant as it helps in visualizing the context of the teacher communities that were part of the DBR intervention, a context that might offer clues about how to design and implement supports for teachers who are part of professional groups, offering them opportunities to grow in their knowledge about their practice.

### **3.2 Study Design**

To study problem negotiation in implementing an intervention aimed to develop supports for teacher conversations about teaching practice in professional networks, I set up a design for implementing the intervention and collecting data about the process. The study was divided in three phases: 1) developing supports with a first network, 2) implementing the designed supports (web-based tool) with a second network, and 3) analyzing the process of implementation and the role of problem negotiation in both networks individually and together.

The first phase was guided by the design of the intervention, which involved gaining access to the professional network that was going to participate in the intervention, agreeing on ways for working collectively to design a web-based tool; engaging in micro-cycles of design, enactment, assessment and redesign; and collecting data on use, perceptions, and design process. These data helped to inform changes in the tool and to document the trajectory of the activity of talking about teaching practice. In

this sense, the collection of data served the purpose of developing the tool and informing the research about teachers' adoption of a form of conversation focused on their teaching practice. The second phase utilized the tool designed in the first phase and the experience gained with the first network to adapt and redesign the supports for a second network. With this second community, micro-cycles of design, enactment, assessment, and redesign were implemented, and data on participants' perceptions was collected. The third phase included analysis of the process of negotiation of the problems of practice, using a review of literature and data from the first and the second network to illustrate negotiation and identify the potential influence of such negotiation on how participants engaged in the intervention. In the following subsections, I provide more detail about these phases, including intervention, data collection instruments, and procedures. But first, I describe the site and participants.

### *3.2.1 Site and participants*

The study took place in the context of a national reform initiative in Chile that has encouraged the emergence of teacher professional networks. Although originally designed to gather teachers within different disciplinary areas, because of special policy support and a decided commitment to develop English as a foreign language learning in the country, the PNs that thrived were those that congregated teachers of English. The teachers in these PNs come from different schools within a district and meet face-to-face periodically. This study is comprised of one professional community of English teachers who are part of the EOD PNs and one community that emerged within a private school. As explained before, the main difference of these two communities is that the EOD network is distributed – includes teachers of English from different schools – and the In-

school community is localized, including teachers who work in the same school teaching different subjects. These two communities participated in co-designing wiki-based scaffolds to support their conversations about teaching practice (e.g. Cobb et al., 2009; Penuel et al., 2011) and were studied from the perspective of the negotiation of problems of practice. In the following, I provide some information regarding the background of these two networks.

The PNs that emerged from the EOD program usually gather between 8 to 20 teachers and are led by a coordinator who is a teacher selected from among the network's members. These networks are locally originated, usually within a district administered by a municipality, and include members who work in different schools in the same district. According to an EOD program representative and the report of an external assessment requested by the EOD program (MINEDUC, 2009a), PNs' goals are highly diverse. Among their goals, it is possible to find some that are specific, such as assessing English learning in some grade levels and developing plans to improve areas that might not be performing well, as well as some that are broad, such as improving teaching practice. A particular feature of these networks is their level of autonomy. A network's members define the goals and activities of their PNs, and each is independent in its functioning. Networks are free to create their annual plans defining specific objectives for the year, as well as planning for each month's activities. Since their inception in 2003, the PNs have received support from the EOD program in the form of partial funding, advice, and priority access to diverse activities organized by the Ministry of Education. However, some of this support has not been sustained over time, as the program has suffered from

changes in priorities and subsequent allocation of resources within the central government.

The EOD network in this study included 11 teachers who worked in a medium-low income district in Santiago, Chile. The PN was selected following a convenience criterion; the priority was access to a consolidated group of teachers. The reason for that was the need to work with a group that had a preexisting predisposition toward learning about their practice through interaction with colleagues. Since the study aimed to create supports for conversations among members, encouraging them to do that was not the primary goal. A teacher of English language who has been the network coordinator for four years led the selected PN, which has been functioning for about eight years. She has organized the group so that teachers can meet regularly to plan and conduct activities for the students and for themselves. The autonomy that many EOD PNs show is also a feature of this PN, but it suffers lack of institutional support. The network is not seen as part of the schools' approach to professional development, nor as a means for teachers to develop new strategies for student learning. They are on their own, and that impacts not only practical aspects of the network life, including meeting times – meetings are scheduled on Fridays once a month after 6 p.m.—but also more profound aspects, such as recognition of the effort put into organizing activities for students or improving teachers' practices.

Teachers in the EOD network worked in schools that receive public funding but are privately administered; these types of schools are called “private subsidized” and have become prevalent in the Chilean school system landscape (Bellei, Contreras, & Valenzuela, 2008), accounting for more than 40% of school enrollment (Elacqua, 2012).



Some of these teachers work in more than one school; a common practice among Chilean teachers, where salaries are calculated by hours taught in the classroom and may vary depending on the demand, generating complex economic conditions for these professionals (Bellei, Valenzuela, & Sevilla, 2009). The members of this PN meet once a month in one of the member's school. Their communication with other members between meetings was uncommon, mostly comprised of informative emails from the PN's coordinator.

In-school community was incorporated in the study in the second phase, after finishing the DBR cycles with the EOD network. This network was comprised of seven members, two of which acted as coordinators. The teachers represented different disciplinary areas, such as Spanish language, mathematics, English language, social sciences, and the natural sciences, but all worked from 1<sup>st</sup> to 4<sup>th</sup> grade in a single private school at a middle-income district in Chile's third largest city. The coordinators were the school's technology specialist and the counselor of the elementary level. They had developed an interest in professional networks when they worked with teachers outside of the school as part of their Masters studies. At the time of the study reported in this dissertation, each of the coordinators was also teaching at local universities, which provided them with ideas about how to develop teaching practice with in-service teachers. These ideas planted the seed for creating a network of teachers within the school where they work, an initiative that was awaiting support. The support came in different forms: First, at the time of the study, I had known one of the coordinators for more than a year, and several times we had talked about our respective interests, leading to the realization that working together might fulfill the interests and needs of both. The

second form of support emerged from the administration at the private catholic organization that runs the school and three others under the same spiritual and academic direction. In formal and informal conversations, the network’s coordinators promoted the idea of a teacher network with the principal and other authorities. They wanted the network to begin working with teachers within their school, but to open eventually to teachers in the other schools run by the catholic organization. With these supports in place, In-school community started meeting in the last months of 2013. Teachers were invited to participate after a simple selection process based on their disciplinary strength, their disposition to talk about their teaching, and their willingness to interact professionally with peers within the school and from other schools. Table 2 presents basic information about the two communities that participated in the study.

Network	Year established	Active members	School administration	Community
<i>EOD network</i>	2006	11	Private subsidized	Urban district in country’s capital, <b>middle-low</b> income
<i>In-school community</i>	2012	7	Private	Urban district in country’s third largest city, <b>middle</b> income

**Table 2:** Basic information about teacher professional communities involved in this study.

### 3.2.2 *Supporting conversations about teaching*

Ongoing professional development in the form of participation in professional networks is one of the ways that experts suggest to support improvement of teaching practice (Ball & Cohen, 1999; Borko, 2004). However, activities in these networks need to be oriented toward practice and give teachers occasion to talk and cultivate knowledge

about practice. Talk with colleagues is something that most teachers in professional networks do, as they probably talk with colleagues within their schools. In the case of the two Chilean PNs involved in this study, teachers meet voluntarily to share with others what they do in their teaching and to organize activities for their students.

To support PN members in developing conversations about teaching I designed an intervention that sought to scaffold these conversations within a PN by creating a system oriented toward develop their knowledge about practice. A fundamental understanding behind this design is that people learn in interaction with others situated in a particular cultural context. As expressed in the conceptual framework, I adhere to the idea that cognition is social and situated (Kirshner & Whitson, 1997) and is responsive to the cultural features of the context, which shapes what is learned and how it is learned within its boundaries. In this design, I considered the particularities of a disciplinary group: the Chilean teachers who participate in professional networks that are part of a central government policy reform initiative for professional development in the country or that emerge as a particular need within a school.

The design involved activities in a web-based environment that was offered to participants as a tool to scaffold conversations. The expectation was that participants would continue conversations during face-to-face meetings that were motivated by conversations held online and vice versa. The goal was that by using the tool, PN members would engage in talking about teaching practice mediated by ‘artifacts of practice.’ Following Rabardel (1995), in this design, *artifacts* are defined as outcomes of human activity, elaborated for a human activity with a precise aim. The human activity here is the act of talking about teaching practice, and the artifacts are examples of

teaching selected to motivate exchanges of ideas about teaching among participants. Artifacts included in the tool are concrete representations of teaching practice, such as videos, detailed descriptions of practice, student work, or teacher journals. The tool had a basic design that allowed teachers to start talking about practice and to contribute and expand this design. PN's members and I, as researcher, worked together in redesigning the tool's features to make it more suitable for encouraging conversations around practice and, eventually, for achieving other goals defined by the PN. I note that the development of the tool is not the primary focus of this work. Rather, the goal is to understand how a series of scaffolds function to support teachers' learning in a PN. The specific tool is merely a vehicle for this purpose.

This intervention considers the idea of *scaffolding* as the process by which more knowledgeable peers or teachers provide assistance for learners to be able to succeed in problems that are difficult to solve without support (Quintana et al., 2004). In particular, in this intervention the scaffolding is embedded in a technological system that facilitates participation and provides support for the task of centering professional networks' conversations about teaching practice. Groups of teachers, who gather with the intention of learning about practice and improving their teaching, face the challenge of developing activities that can help produce this expected learning. This means that their activities need to be intentionally oriented toward teaching – i.e. focusing on the subject matter and its relationship to the students and the context, encouraging talk with peers about practice, making teaching public, and developing inquiry of practice. Such an orientation is difficult to achieve just by getting together, making it important to support teachers so that they can succeed in the task.

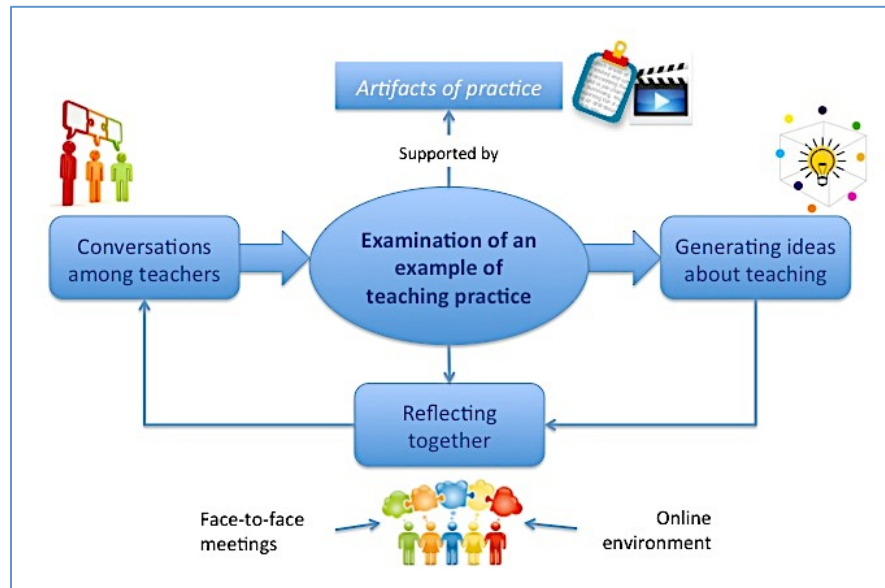
Although the original idea of scaffolding included only the idea of assistance from people, as noted by Quintana et al. (2004), it has also been used by researchers when studying technological supports for learning. In an understanding of scaffolding that includes technological systems, the support comes from tools designed to provide a new approach for conducting a task that makes it easier and more productive. The tool in this intervention is a website that can be modified easily to provide scaffolds that are responsive to the users' needs. The tool has been created to support developing asynchronous conversations around teaching practice when PN members are not physically together. Face-to-face meetings and the online tool complement one another; online activity can help motivate face-to-face conversations and vice versa.

The intervention intended to support the network by creating opportunities to:

1. Orient conversations toward teaching practice and generate ideas about teaching. Some sources for these ideas can be teaching methods, teaching philosophy, beliefs about students, the role of teachers and students in teaching and learning, among others.
2. Focus on particular features of teaching through the use of 'artifacts of practice' from teachers within the network.
3. Participate in a virtual environment in which networks member will interact in the time between meetings and access the artifacts of practice.
4. Collaborate with peers in the network to discuss and develop deeper understanding of their own teaching practice. For instance, peers might characterize the pedagogical orientation of a practice, identify and contextualize

its components, and explain how to enact a teaching strategy so others can understand it.

5. Engage in the process of assessing and redesigning the features of the tool.



**Figure 3:** Model of the intervention to support conversations focused on teaching practice in PNs.

As Figure 3 shows, the strategy began by encouraging conversations about teaching practice among teachers with a focus on the components of their practice. Some of these components of practice, among others, include preparation, enactment and assessment of teaching, decision making in these different stages, interaction with students, and interaction between students and content. To support focusing on practice, the teachers shared ‘artifacts of practice.’ The review and discussion of these artifacts was intended to help teachers collectively generate ‘ideas about teaching’ by being a starting point for stating assumptions, discussing perspectives in the intersection of subject knowledge, students, and context. In sum, the intervention facilitates interaction between network members by which they arrive at definitions of what they understood

about the practice being analyzed and draw interpretations as they evolve in comprehension of what it means to teach in their particular contexts. The main environment for the collective analysis of practice is the online tool, which is complemented by the usual monthly meetings.

The intervention was set up to better understand the implementation of this strategy so it can be useful for other PNs in the future. Network members helped develop this understanding through participating in the collaborative design of the strategy. Indeed, member participation is key for developing a strategy that can be responsive to the network's needs in terms of learning about teaching practice and can provide adequate tools for discussion of instances of teaching through the provision of artifacts of practice. Because network members participate at all stages of the intervention, it is important that participants and researcher share understanding of the problems to be addressed by it (Penuel et al., 2011).

The initial design of the tool included scaffolds suggested in the literature on teacher professional networks that support conversations about teaching practice. To leave space for PN members' participation in the development of the tool, the scaffolds designed in the initial version were limited. It was expected that they would evolve through the intervention. Table 3 describes the features of the tool, the scaffolding strategy that these features represent, and the theory that supports the scaffolding.

<b>Tool feature</b>	<b>Scaffolding strategy</b>	<b>Supporting theory</b>
<i>Artifacts of practice</i>	Support teachers in focusing on practice when sharing about their teaching. The artifacts provide concrete examples that initially may be about others' practice and eventually will emanate from participants' own practice.	Helping to situate professional development in practice through the use of records of practice (Ball & Cohen, 1999).
<i>Guiding questions</i>	Encourage adoption of a critical perspective about the teaching observed through guiding teachers in their discussions.	Design and implementation of activities in which teachers engage in critical analysis of teaching practice (Little, 2003). Making teachers' work public within the network and being helped by peers in clarifying features of their work that can be improved (Lieberman & Wood, 2003).
<i>Exclusive online space</i>	Provides a space for participants to interact with fellow PN members in between monthly meetings, supporting exchanges in an anytime-anyplace modality.	Benefits of learning communities that use an online environment to share materials, discuss topics of interest and analyze student work (Beach, 2012).

**Table 3:** Tool features and scaffolding strategies.

Different kinds of tools can be helpful in providing these scaffolding features. Keeping in mind the conditions for collaborative interaction described before and the purpose of supporting network teachers' conversations around practice, a *wiki* was considered a good candidate tool for this intervention. A wiki is a website that can be edited collaboratively, allowing the content in the website to be modified and shaped according to the needs of those who have access. Creators of the wiki concept note that "a wiki is a freely expandable collection of interlinked webpages, a hypertext system for storing and modifying information – a database, where each page is easily edited by any user with a forms-capable Web browser client" (Leuf & Cunningham, 2001, p. 14). Wikis are prevalent in different fields and, in some cases, have been used as tools to support teacher professional development (Samarawickrema, Benson, & Brack, 2010).



Hutchinson and Colwell (2012) propose that wikis may benefit professional development participants by creating opportunities for reflection, identity construction, and collaboration. In using a wiki, teachers can engage in a reflective process, which can be a positive way to explore their ideas and knowledge around a topic, share information, and receive feedback from peers and others (Hutchison & Colwell, 2012). In a study conducted by these authors in a beginning teachers' mentoring program, the use of wikis supported reflective comments and insightful participation in professional development, but was perceived by participants as an impersonal way to communicate. Likewise, another study on the use of wikis by college students found that the sociability features of working in a wiki, such as editing the work of others, created concerns among participants (Kear, Woodthorpe, Robertson, & Hutchison, 2010).

There seem to be two aspects to be considered in working with wikis. On the one hand, they can be effective tools to use in exchanging documents or artifacts and in discussions around those documents. On the other, online communication can sometimes seem impersonal and lack a feeling of personal connection. Although a wiki may create a highly positive space for sharing and collaborating (e.g. Beach, 2012; Deal, 2009), it is important to attend to the needs of the local context of use (Naismith, Lee, & Pilkington, 2011) and complement online tools with face-to-face interaction (Hutchison & Colwell, 2012). For these reasons and in order to create optimal conditions for collaboration, the wiki used in this intervention was complemented by in person monthly meetings.

The flexibility of wikis and their easy modification supports collective maintenance of a virtual space that can be adapted to various needs, such as online sharing of students' work (Beach, 2012), or collective authoring of curricular materials

(Naismith et al., 2011). The tool for this intervention was created with an online service called Wikispaces.com that offers different templates for wiki pages and options for online interaction. The service was selected in part for the ease of editing and modifying the wiki that it provides, allowing participants to adapt its design to their own needs and include content relevant to their professional development. To protect any private or sensitive information about schools and students shared in the course of online discussions, the wiki was password protected. Only registered members had access to and could participate in the activities included in the wiki. A view of the first iteration of the home page and one of the artifacts pages is offered in Appendix 1. This is the initial design of the wiki assessed with teachers in an iterative process. These iterations helped in evaluating the affordances of a wiki for the purpose of the intervention.

The whole strategy was analyzed and assessed to propose ideas for redesign during the implementation. These ideas were used to introduce changes in the wiki that were then made available for a new micro-cycle. During the micro-cycles, I supported teachers in their individual use of the wiki between meetings and collectively in the discussion and analysis of examples of teaching practice in face-to-face meetings. Criteria to introduce changes to the wiki were guided by the principle of facilitating participation. Changes included, but were not limited to, making minor adjustments in the functioning of the wiki (e.g., organization of pages in the website, developing directions about what to do), incorporating new artifacts of practice (e.g., new videos or descriptions, including those from the PN members' practices), and discussing and implementing ideas to improve participation in the forum.

### 3.2.3 *Researcher's role*

During the study, the participants and I, the researcher, engaged in a relationship of mutual support and collaborative interaction. As with any ethnography-oriented method, I had to manage the tension between my participation in the context of the study and my role as a researcher in the larger research community. As Eisenhart explains, “The researcher must be involved in the activity as an insider and able to reflect upon it as an outsider” (1988, p. 193). In addition, my relationship with participants was a key component of the implementation and contributed to the development of knowledge that supported sustained collaboration between researcher and teachers (Design Based Research Collective, 2003). The continuous contact on which this collaboration was built helped develop confidence between researcher and participants and establish the benefits and compromises necessary for carrying out the study’s activities. Although there are many benefits of such close researcher involvement with participants in the study, there are also potential pitfalls, including the validity threats this involvement could create. Researcher memo production can be a powerful tool to register ideas and inferences that emerge during the study and could influence interaction with participants. These records of researcher thinking can help in creating self-awareness of these influences (Corbin & Strauss, 2008) and in taking action to moderate them.

Another feature of my role as researcher in this study is related to the use of a foreign language. Although my native language is Spanish, because of my affiliation with a North American university as a doctoral student, I conducted this study mainly in English. Most of the data collection was conducted in Spanish, but due to the disciplinary subject of EOD network members – English as foreign language – some activities

involved the use of English language. The influence of English language in my research is beyond the scope of this study, but I am aware that using a language for thinking about issues in teacher learning and implementation that happens in a different language represents a reality I have to take into account. Later in this chapter, I discuss how I dealt with this issue in the collection and analysis of data. Also, I return in the last chapter to the cultural issues over and above those of language that emerge in research across different national contexts.

#### *3.2.4 Data collection instruments and procedures*

Data collection included individual interviews, observation of meetings, records of participation in the wiki, and survey data. It also included conversations with coordinators, which I consider background information relevant to the study of negotiation of problems of practice. The methods consisted of recording teachers' interactions during meetings and in the web-based tool and interviewing some teachers throughout the study to gather their individual perceptions about the intervention. Detailed qualitative field notes were created during and after field visits (i.e., interviews and meetings), including the production of memos to develop ideas from the observed events and to "push" researcher thinking (Marshall & Rossman, 2006). I gathered data that could be used to analyze the design of the strategy and in turn influence the redesign before enactment of a new cycle. I used a qualitative approach during the design part of the cycles to constantly negotiate and improve the strategy and to develop new versions of the scaffolds that supported the analysis of teaching practice. More detailed information about the relationship between the research questions and data collection

sources and methods is offered in Table 4. Additionally, a summary of all data collected with both communities is available in Appendix 2.

<i>Research Question</i>	<i>Data sources</i>	<i>Data collection methods</i>
1) What are the features of problem negotiation in two contrasting cases of teachers using a web-based tool to support conversations around teaching practice? a) What are the ideas that teachers <b>expect to</b> discuss in conversations with peers within each network? b) What are the ideas that are <b>actually</b> discussed in conversations with peers within each network? c) How are ideas negotiated in each case between participants and researcher?	<ul style="list-style-type: none"> <li>Teachers' conversations during face-to-face meetings.</li> <li>Teachers' perceptions about expected interactions and problems to be discussed with peers in the network.</li> <li>Teachers' perceptions about conversations held face-to-face and their experiences in the design-based cycles for the analysis of teaching practice.</li> <li>Teachers' activity in the wiki (i.e., posts, annotations, changes in the wiki, users logs).</li> </ul>	<ul style="list-style-type: none"> <li>Direct observation and audio recording of teachers' conversations during face-to-face meetings. Field note taking.</li> <li>Individual interviews with teachers using an interview guide (Patton, 2002) to orient in-depth conversation about the topics discussed in meetings and in the online environment.</li> <li>Survey responses.</li> <li>Records of teachers' activity in the online environment (users logs).</li> <li>Background conversations with coordinators.</li> </ul>
2) What are the implications of these different negotiations for how teachers used the tool that supported conversations around teaching practice? a) How is the use of the tool related to the process of problem negotiation in each of the networks? b) What are similarities and differences of problem negotiation process between two contrasting cases?	<ul style="list-style-type: none"> <li>Teachers' participation in the wiki (i.e., evidence of posts in forum, annotations to documents of practice, posts of documents of practice, changes to the wiki).</li> <li>Teachers' perceptions about the supports provided through the online environment, and the reasons for changes made to the supports in order to meet their needs.</li> </ul>	<ul style="list-style-type: none"> <li>Review of teachers' participation in the online environment considering evidence of posts in forum, annotations to documents, posts of new documents, and changes to the wiki.</li> <li>Individual interviews with network members using an interview guide (Patton, 2002) to orient in-depth conversation about the supports provided for the analysis of teaching practice and the reasons for changes made to the online environment.</li> <li>Researcher's memos.</li> <li>Follow up group interviews with sample of PN members.</li> </ul>

**Table 4:** Research Questions – Data sources relationship.

Since Spanish is the official language in Chile, all instruments, protocol and communication were translated into Spanish, except for some materials used with the

EOD network. As this was an all-English language teachers network, participants used English as the primary language for their communication in meetings and elsewhere. My stance regarding the use of one or the other language followed members' choice. For instance, the web-based tool was designed in English, as the teachers wanted to use that language in all of their interactions, but interviews were conducted in Spanish, which seemed more comfortable in one-on-one conversations. Details about each instrument language are included in Appendix 2.

At the beginning of the implementation with both communities, participants were asked to respond to an online survey in order to collect information about their work place, responsibilities, their level of interaction with other teachers, and basic demographics. The informed consent was included online with the instrument, as well as in printed format for participants to keep.

### ***Data collection procedure with the EOD network***

The initial contact with the EOD network took place in July of 2012, which is when I first met the coordinator. After several electronic exchanges, I met her in person at the end of 2012 to discuss details of the project. These different interactions represent background data in this study, as they were collected before the official beginning of the implementation. However, because of their relevance, I am considering them as part of the data collection.

Thanks to a grant received from the institution with which I am affiliated, I was able to conduct most of the data collection with the EOD network personally in Chile over the course of about 4 months. After the presentation of the project, at the beginning

of the first phase, I contacted all teachers who were enrolled in the PN rosters to interview them. The interview focused on the features of their practice as English teachers, their context of work in the school, and their participation in the PN (see interview protocol in Appendix 3). This interview was designed to identify and describe how teachers approached their professional activity and the importance they attributed to interaction with colleagues. I met with each teacher in a place that was chosen by mutual agreement, taking care that it was quiet enough to have a conversation and make an audio recording. Conversations with each teacher were transcribed in the language of origin – Spanish – by two native transcribers. An analysis of content was performed with the group of 11 interviews, identifying emergent themes and categories associated with each theme. This process involved the review of each transcript three times in order to associate quotes with a particular theme and category. Selected quotes were analyzed, identifying nuances and attempting initial interpretations. After the interviews, as mentioned before, I developed reflective memos to capture my initial thinking about the information shared. These memos helped to create a context for the interviews; they were a way the untold could be captured and relevant details of the environment could become part of the data.

I conducted a similar process of memo production after observing the network meetings, where I kept a non-participant role, except for those moments when I had to communicate something to the teachers. Copious notes recorded details of these meetings and complemented audio recordings, both of which were used for further analysis. Following meetings, I would meet with some teachers in their work places to talk about the wiki and discuss their perceptions of possible changes to the wikis. These interviews

were less structured than the first ones, although I used a protocol to guide the conversations and focus them on the teacher's wiki use. The interview would begin with me asking them to navigate the wiki and show me what they wanted to look at most and least, what was not clear for them, what they would keep, and what they would change (see protocol in Appendix 4).

### ***Data collection procedure with In-school community***

With the In-school community, data collection was slightly different, as most of the communication and collection was done remotely. I was not able to be physically present in Chile when this network joined the project, so I sought support from the on-site coordinators. Also, the implementation period with this network was shorter than with the EOD network, so I restricted data collection to recording teachers' interactions during meetings and interactions in the web-based tool. Communication with coordinators before the start of implementation is also included as background data, relevant to study the negotiation of problems of practice.

In-school community participated in the study for about two months, a period during which teachers were presented the initial design of the tool, used the tool in their own time, and met every two weeks to discuss use and changes they wanted to make to the tool. Every meeting was scheduled the network coordinators and me at a time when all teachers could participate. I joined the meetings via an online communication system that allowed me to audio record the conversation. Since I was able to see participants through the video capability of the system, I took notes on non-verbal communication and other details that could be relevant, such as a teacher showing something to others. I



wrote memos after each meeting to record my initial thinking about the conversation and teachers' ideas.

### ***Follow-up procedure***

The study was an ongoing process of adjustment and redesign, where DBR provided methodological tools and a perspective that included participants in conducting the study, and DBIR contributed a perspective on problem negotiation for the analysis. This necessitated collecting data that at the beginning might not have seemed relevant, as in the case of a follow up meeting with the participant teacher networks. After identifying the importance of problem negotiation in the study, I planned to conduct follow up interviews with the coordinators and some teacher members of each network to discuss the implementation process with 'some perspective.' Due to feasibility issues, I planned to conduct these interviews via online remote communication. However, five months after the end of the implementation I had the opportunity to travel to Chile, which offered the possibility of visiting in situ the PNs that participated in the study during 2013.

I planned follow up meetings with both PNs, visiting them in their usual environments and interviewing with groups of two to four members. The goal of the interviews was to discuss with participants the features of implementation, what they considered well accomplished, and what did not work well given their needs. In addition, I asked participants what they had thought they were going to do in the implementation and how that contrasted with what they actually did, in order to obtain their perspective on the extent to which their expectations were included in the implemented project. More details of the protocol used for these group interviews can be found in Appendix 5.

### 3.3 Preparation of data for analysis

The preparation of data included the transcription of audio records from interviews and meeting observations. In parallel, to protect participants' anonymity I created pseudonyms for all participants using one central criterion: The pseudonym should not allow for identification of a participant, but should be respectful of that person's identity in their context. I followed the general rule that participants should be able to recognize themselves in the data, but readers should not be able to recognize any given participant (Ogden, 2008). Then, transcriptions were paired with field notes and memos to make sure data produced by me were tied to data collected with participants, using the pseudonyms selected for the study. This is also important because some of the data analysis was conducted at the same time as collection, as is usual in qualitative studies where "data collection and analysis (...) go hand in hand to build coherent interpretation" (Marshall & Rossman, 2006, p. 155). This was the case I built through the production of analytical memos.

An important task in transcribing data is careful treatment of language when the study uses language and communication as data (Marshall & Rossman, 2006). This is especially relevant in this study, as it deals with data in different languages – Spanish and English – and the final report will be completely in English. This is particularly complicated when researchers are not fluent in the non-English language, but that is not the case here. Even so, I believe that the language issue is relevant and chose to attend to potential biases and distortion of meaning that could arise in the translation process. Temple and Young (2004) argue that making explicit the language of the data and discussing its treatment depends on the epistemological position of researchers, although

not acknowledging this aspect of the data could pose a threat to the validity of the study. After all, in translating participants' words, there is a process of interpretation and the meaning of those words is connected to cultural and social contexts (Simon, 1996).

Language requires special treatment to secure accuracy in meaning and avoid bias in translation. In order to maintain accuracy and avoid bias, I kept texts in their original language for analysis. Translation from original language to English was done only for the purpose of reporting. I selected relevant vignettes and translated them myself in order to take advantage of both my knowledge of the broad Chilean cultural context and my knowledge of school system and particular settings where the study was conducted.

### **3.4 Plan of Analysis**

The analysis of data in this study focuses on content, following an inductive qualitative process in search for themes and patterns that can help answer the research questions (Merriam, 2009). I approached this analytical task in different ways depending on the type of data. For the analysis of individual interviews, I coded raw data from transcripts and constructed categories to represent network members perceptions. Conversations in meetings were reviewed several times, and emerging themes were coded for posterior description of this instance of network/community interaction. A similar process was conducted with tool interviews during design-based micro-cycles and follow up group interviews. These transcripts were reviewed to identify characteristic quotes to describe participants' perceptions and ideas about the tool and the opportunities that the project as a whole provided for talking about teaching practice.

For the analysis of interviews and meetings data collected in text format, I immersed myself in the data by conducting several reviews of the transcriptions and combined them with audio of the interviews and meeting observations in order to identify emergent patterns (Marshall & Rossman, 2006). This process of reading and re-reading text data helped me to identify patterns and also to make sense of how the ideas I had in mind regarding the implementation and teachers conversations about teaching practice as a professional development activity were connected to or diverged from those participants had. My previous ideas regarding teacher learning, teacher communities, and DBIR that came from the literature and my own thinking about the intersection of these topics was instilled in the questions and statements of the interview protocols and provided an initial framework for looking at the data.

Surveys consisted of nominal and numerical responses to questions that captured descriptive data, such as “last degree earned,” and quantitative data, such as “number of years teaching.” These data were processed using quantitative software that calculated frequencies for each category. Results were organized in tables for communication.

#### 3.4.1 *Coding scheme*

Patton (2002) describes the process of *deductive analysis* as that in which analytic categories are stipulated beforehand based on a framework that exists previous to beginning the analysis. Conversely, an *inductive analysis* one in which the researcher discovers patterns, themes, and categories in the data. In this study, I approached the analysis with some ideas regarding problem negotiation, but initially allowed data to ‘speak’ and show emergent patterns, taking a more inductive stance towards the analysis. Deep examination of data led to uncovering the themes and categories from the

interviews that are presented in Table 5. The definition of categories and examples can be found in Appendix 6.

<i>Themes Categories</i>	<b>Interaction</b>	<b>Network activity</b>	<b>Teacher context</b>	<b>Teacher expectations</b>	<b>Teacher self- perception</b>	<b>Grand Total</b>
Active and positive					8	8
Benefits from participation		2				2
Collaborating		9				9
Coordinator role		2				2
Critical stance	3	4	3			10
Demanding					4	4
Differentiating self					5	5
Disposition toward collaboration with colleagues	24					24
Expectations from network	4					4
High expectations of students				3		3
Learning from others	9					9
Participation		5				5
Positive disposition to learn				7		7
Practice based					2	2
Relevant practices					5	5
School experience	6		13			29
Student compliance				3		3
Student participation and production				2		2
Teaching philosophy and style					3	3
Willingness to improve					3	3
Working with students					3	3
<b>Grand Total</b>	<b>46</b>	<b>22</b>	<b>16</b>	<b>15</b>	<b>33</b>	<b>132</b>

**Table 5:** Themes and categories emerged from baseline interview with EOD network participants.

### 3.4.2 Data reduction and coding process

I approached the process of data reduction and coding by working with raw data (transcriptions) to identify emergent patterns in the text. I began tagging categories in the

electronic text document, then summarized those categories in a codebook spreadsheet along with other information, such as date and source. Most importantly, I included exemplars of the code from the original source so as to be able to trace the category back to the data. This summary of categories provided a means for visualization that helped in identifying the themes that grouped categories under one concept or code.

After rounds of reviewing the themes/categories by re-reading the examples and adjusting some of them, I worked with another researcher experienced in qualitative analysis that had not been involved in this study. She read the list of themes and categories, and we discussed the definitions and examples I provided. This colleague pointed out several categories that could be collapsed, examples that represented more than one code and the needed for a decision about how to treat those cases in the analysis, and the nuances in participants discourse when speaking about themselves versus speaking about the network or the school context. Considering her suggestions, I conducted a new round of review and reduced codes from 47 to 31 categories, which involved collapsing categories under a new or existing one. For example, there were three different categories about students under the theme of *Teacher self-perception*, and they were all collapsed under a new category called *Working with students*. Another important change was that participants' disposition to interact collaboratively with colleagues was conceptualized initially as *Disposition to interact with colleagues*, but later as *Disposition to collaborate with colleagues*, which captured the specific purpose of the interaction.

I complemented the reviews of text data with an analysis of the writing of memos that captured my emergent ideas on relationships and potential explanations of the findings (Maxwell, 2005). Memo production as an analytic tool has been highlighted by

many researchers (e.g., Corbin & Strauss, 2008; Marshall & Rossman, 2006; Maxwell, 2005) for its importance to the researcher in his or her process of thinking about the data. As Corbin and Strauss point out, “it is in thinking that analysis occurs” (2008, p. 118).

## **Chapter 4**

### **Findings of the First Case - EOD Network**

#### **4.1 EOD Network top-down problem negotiation**

##### *4.1.1 The context of networks for teachers of English in Chile*

During 2003, the Chilean Ministry of Education (MoE) began a major reform for improving teaching and learning of the English language in the country's schools. The original purpose was to become a bilingual country to improve economic development, although that idea was abandoned in favor of simply supporting teachers of English in their teaching of the foreign language. The MoE took a distinctive path by creating a special program for carrying out the strategy of supporting English language learning; the program was called English Opens Doors, referencing its original purpose. It was distinctive, because no other school curriculum discipline has ever been devoted a whole separate office to plan and administer a particular reform in the central government. It was also well financed, as the ministry at the time secured special funds from the coffers of other ministries so that the program could develop its strategy (MINEDUC, 2009a). Along with an extended provision of professional development courses and



workshops for teachers, the English Opens Doors program, also known as EOD, created Local Pedagogical Networks aimed at providing teacher professional development and encouraging association among teachers of the same curricular areas.

The purpose of EOD was to support the organization of local networks for developing and exchanging pedagogical experiences that might lead to the adaptation of new curriculum, reflection around teachers' interests, and analysis of teachers pedagogical practice (MINEDUC, 2009a). In particular, the English teachers pedagogical networks were "organized to become spaces of reflection, discussion, design, and evaluation of (...) pedagogical proposals within the new curriculum framework and the goals of English Opens Doors Program" (MINEDUC, 2009a, p. 60). In addition, the MoE expected that the networks would generate collaboration among peers for professional learning in particular contexts, contributing to the improvement of teaching practice and student learning through the implementation of strategies elaborated within the networks. It was expected that networks would communicate experiences, strategies, and products created in the networks with other teachers and their communities.

The networks generally gather eight to twenty-five teachers and are led by a coordinator who is also a teacher member of the network. These networks are locally originated, usually within a geographic district administered by a municipality, and comprise members who work in different schools in the same district. Based on information provided by an EOD program representative and the report of an external assessment requested by the EOD program in 2009 (MINEDUC, 2009a), we know that the networks' goals are diverse. Their goals range from specific objectives such as

assessing English learning in some grade levels and developing plans to improve the weakest areas to very broad objectives such as improving teaching practice.

A particular feature of these networks is their level of autonomy. Although the EOD program supports networks' work by providing funds, advice, and priority access to diverse activities that originate in the MoE, members define the goals and activities of their network and are fairly independent in their functioning. Networks are free to create their annual plans defining specific objectives for the year, as well as plan for each month's activities. After some time, the EOD program started requesting networks' plans in order to have record of their activities, but EOD does not have direct influence over what networks decide to implement in the end. This level of autonomy is a positive sign for the building of professional communities, particularly when participation is voluntary (Lieberman & Wood, 2002).

Teacher participation in networks is completely voluntary, both in the decision to join the group and in coping with the "costs" of participating. One of the main costs is time, because most networks meet outside working hours, usually in the evenings and in places different from their schools. Some networks are supported by the school administration, which provides time for meetings within working hours, but they are the exception. To understand this particular situation, we need to consider that working conditions of teachers in Chile were left unregulated after the major reform of the school system in the 1980s (Bellei et al., 2009). Two major consequences of this reform for teacher work conditions have been the sustained large difference in salaries of teachers compared to those of other professionals and the working hours that teachers need to put in to earn a salary since they are paid by weekly classroom hour. Teachers have to teach

several different classes in order to earn an acceptable salary, leaving short time for other professional and personal activities. In addition, the country's public school sector has experienced a steady down-sizing, reducing the number of students and therefore the need for teachers in these schools (Bellei et al., 2009). This has pushed public school English teachers to supplement their income with teaching in private schools or even work in completely different job markets.

Activities designed and implemented within each network are highly diverse and generally connected to classroom teaching. The EOD representative commented that the networks' activities are commonly related to sharing and developing instructional materials, discussing lesson plans, assessing student progress, practicing in the use of the English language, and, in general, developing activities in which students can use English (Páez, 2011). The main activity supported by the EOD program is "English week," an event held each October throughout the country's schools. During this period, all networks are invited to organize local activities, such as academic fairs, artistic performances, debates, and other presentations, that are shared with the school or district community to celebrate and promote the school's English language activities. Networks can receive funding for English week activities by submitting a request to EOD with a proposed project. This funding incentive increases the number of networks and schools able to participate in English week; they might not otherwise have money in their tight budgets for the extracurricular project.

Furthermore, networks are an important mechanism for communication and dissemination of MoE initiatives to support English teaching and learning in schools. Besides the work that networks do toward continuous development of the profession,

they are gateways for teachers to access information about professional development activities available outside the networks. The EOD program disseminates information about professional development activities first to networks, offering priority registration and scholarships for their members. The MoE program officers send e-mails on a regular basis to the network coordinators, whom in turn communicate opportunities to the other members through e-mail or in their face-to-face meetings.

#### *4.1.2 A veteran network of teachers: context and history of the EOD Network*

The previous section described the context in which the group I have called here the *EOD network* emerged. This network's inception is dated to 2004, making it one of the longest-standing networks of English teachers in the country. The initial network configuration included eight members, all from different schools within the same district. One teacher was asked by the principal of her school to begin a network and invited the other original members. The request this teacher received was to join other teachers in networks from surrounding districts or to begin a new one. She opted for the latter and held a meeting in her school with the eight teachers she had contacted. The first time we met, she remembered, "We had nothing, no goals, nothing. At that time, it wasn't very clear what the networks of English teachers were. There were some purposes, but very general" (Rebeca, EOD network senior member, background interview).

The network coordinator and the senior member and founder describe their network as part of a larger initiative promoted by the central government MoE. This appears to have several implications: First, the network was created as a reaction to an invitation and did not emerge naturally. That this is part of their identity as a group is illustrated in this comment:

This is not a network that emerged, let's say as per our decision, but it's part of a Ministry of Education's initiative through the English Opens Doors program that offers the possibility for teachers to associate with each other, getting together around a common goal that is to share strategies, conduct activities together, empower each other, try to lessen the weaknesses and grow on our strengths. (EOD Network coordinator, background interview)

Second, the tie with the central organization brings benefits to members, but if the benefits are discontinued it can also have other effects such as a decrease in motivation for participation and reduced opportunities for learning about professional development. Third, as a government sponsored initiative, the networks target teachers only from schools that receive public funding, which can make it difficult to include teachers from private schools. Private school teachers are included in the EOD network, but those teachers are not eligible for the professional development opportunities offered by the MoE. Therefore, the tie networks have to the MOE creates opportunities, but may also create barriers for their development as a community when some members are not able to participate in all events.

#### *4.1.3 Members background, practice, and roles*

In order to understand the teachers in this network, members were surveyed about characteristics of their teaching practice, their use of teaching resources, and their teaching experience. The results of this survey (see Table 6) show that the 11 members of the EOD network who participated in the study are representative of a wide range of experience and practice as professionals. In the network, 10 out of 11 teachers work in

schools that are privately administered and funded by a combination of public subsidy and tuition paid by parents, plus private contributions in some cases. These schools are known as private-subsidized in Chile and are funded by public money in the form of a voucher that the school receives for each attending student, but their administration is private. The public subsidy they receive provides a status that is similar to that of public schools in the country in that they benefit from programs and public educational policy such as the EOD program. These benefits are not available for teachers in private-only schools, although teachers in both private-only and private-subsidized schools face similar challenges in making a living. Half of the teachers in the EOD network work at more than one place, including a second school-level institution, a private language school, and a university.

Half of the teachers in this network are new to the profession, with five or less years teaching experience. However, there is a huge range of experience represented by network members, from one to thirty years. Most teach an average of five different levels, with a minimum of three and a maximum of nine levels. This means that they prepare for and deliver teaching to students in early and advanced levels of English, as well as in different age groups, with class sizes that range from 30 to 43 students. For most of these teachers, the last degree acquired was their teaching certificate, which is consistent with the fact that many of them are in their first years in the profession (See participants data details in Table 7).

Characteristic	Count
<i>Last degree</i>	
Teaching Certificate	7
Diploma	1
Master	2
Doctorate	0
<i>Years of Experience</i>	
Min	1
Max	30
Median	11
Average	6
<i>Levels Taught</i>	
Min	3
Max	9
Median	5
Average	5
<i>Students in typical class</i>	
Min	30
Max	43
Median	38
Average	40

**Table 6:** EOD network members' teaching experience.

Participant	School	Years exp.	Hrs. taught School 1	Hrs. taught School 2	Levels taught <sup>♦</sup>	# Students <sup>*</sup>	Other role(s)
<b>Victoria</b>	Subsidized	N/A	N/A	N/A	N/A	N/A	N/A
<b>Danitza</b>	Subsidized	30	44	-	2 M, 1 S	43	Academic Dean
<b>Gregorio</b>	Subsidized	3	24	10	2 E, 4 S	40	
<b>Olivia</b>	Subsidized	4	20	10	1 PK/K, 2 E	40	Language School Teacher
<b>Cristina</b>	Subsidized	5	33	-	1 PK/K, 1 M, 4 S	30	
<b>Antonia</b>	Subsidized	2	22	22	1 PK/K, 8 E	34	
<b>Rebeca</b>	Subsidized	25	44	-	2 M, 2 S	40	
<b>Monica</b>	Subsidized	22	44	3	2 M, 2 S	40	PN Coordinator, Teacher Ed.
<b>Paula</b>	Private	9	43	-	2 M, 4 S	32	
<b>José</b>	Subsidized	1	18	17	3 M, 3 S	40	
<b>Maria</b>	Subsidized	7	26	-	3 S	40	

**Table 7:** EOD network members' data summary.

♦ PK/K=Pre-Kindergarten/Kindergarten, E=Elementary (1<sup>st</sup>-4<sup>th</sup>), M=Middle school (5<sup>th</sup>-8<sup>th</sup>), and S=Secondary (9<sup>th</sup>-12<sup>th</sup>).

\* This is the number of students in a typical class, as reported by participants.

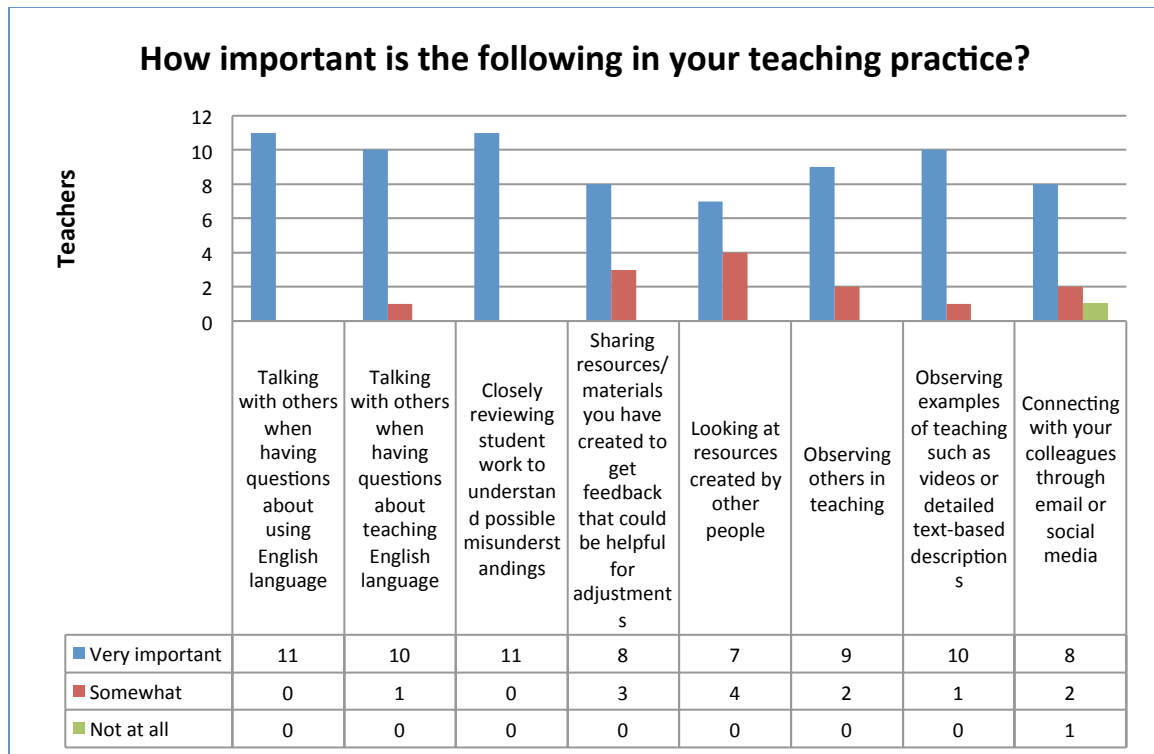
Among the practices that EOD network teachers value in their teaching, talking with peers, reviewing student work, and observing others teaching are considered very important (see Figure 4). Teachers in this network perceive that talking to others when they have questions about their discipline content and how to teach it to students is very important. Of similarly high importance is observing examples of teaching and reviewing student work closely to understand where it is that students need more help. Observing others teach is also very important for teachers in this network, although not quite as important as talking with peers and reviewing student work. Looking at resources created by others and sharing their own materials to receive feedback is perceived as important and somewhat important, respectively.

Since the intervention in this study comprised the use of online systems of communication, a question about the perceived value of connecting with colleagues through email or social media was included in the survey. Most teachers perceive this kind of communication as very important, although two out of eleven think that is somewhat important, and one teacher thinks it is not important at all for her teaching practice. Understanding teachers' use of technology for teaching purposes and for personal matters was important in preparation for an intervention that included technology as a means for communication and collaboration.

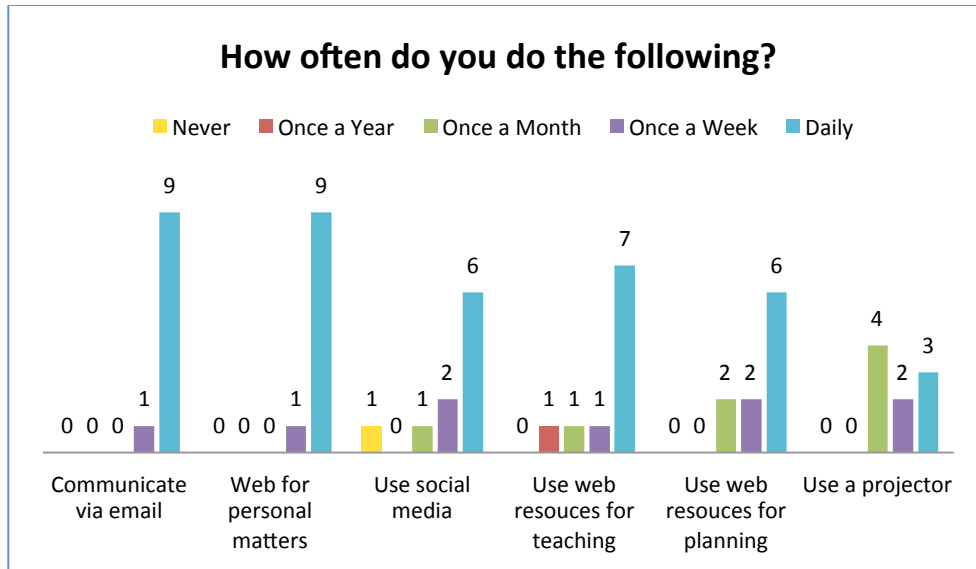
Answers to a question about frequency of technology use for work or personal tasks (see Figure 5) showed that email communication and use of the web for personal matters was an everyday activity for most of them (9 out of 10 respondents). The use of the web for teaching in the classroom and for planning fell a bit below, with 7 out of 10



teachers declaring daily use for the former purpose, and 6 out of 10 declaring daily use for the latter purpose. As for projectors, one of the most pervasive and basic technologies to facilitate group presentation, use is part of daily teaching for a third of the teachers in this network, with some teachers declaring weekly, monthly, or yearly frequency of use.



**Figure 4:** Features of teaching practice.



**Figure 5:** Use of technology resources.

A relevant feature of this network is its system of governance, including the election of a coordinator by members. The network has had two coordinators since its inception; the current coordinator was elected in 2009. Although these elections happen when needed instead of on a regular schedule, network members value democracy and participation as a way to make decisions regarding who will lead the group and other matters such as defining goals and planning activities. The current coordinator endorses these values as part of network practices, saying, “When decisions are made, they are made in a democratic manner, by the majority, and people comply. I mean this is an implicit agreement of this group” (EOD Network coordinator, background interview).

The coordinator’s role in this network is an emergent one and is shaped by what the elected person may bring to the community. There are no a formal role description, but the current coordinator describes her role as someone that organizes the meetings, defines the agenda, communicates with members about the meeting dates, brings

information that she receives directly from the Ministry of Education, and supports decision making in the network regarding activities to conduct with students. A particular feature that this coordinator has brought to the network is that of sharing “successful activities” in the meetings. Members sign up ahead of meetings to present a successful activity and prepare accordingly. In one of the meetings I attended, the coordinator reminded the group that they had “homework” to bring. The homework was to “bring a successful activity you can share with us” such as “[those] that are always successful that we can repeat again and again, maybe we can adapt, but that they are always working with our students” (EOD Network coordinator, meeting 1 transcript). The group dedicated special time to sharing these activities with teachers, providing detailed descriptions of the structure of activities and pointing to their own experience in implementing those activities with students.

Teachers in the EOD network share “successful activities” they have implemented in which students can practice English language skills and engage with the subject. Most of these activities involve students preparing and performing in English events such as fashion shows or song festivals. There is also sharing of particular strategies that some teachers have developed or learned somewhere else and deemed potentially valuable for everyone. For instance, in the third meeting observed, the coordinator offered a workshop for her fellow colleagues in which they had to collectively prepare a small play, including writing a script, crafting costumes with everyday materials, and performing in front of the whole group.

#### 4.1.4 *Members' perceptions about the network and collaboration with others*

Other characteristics of teachers in this network were identified through baseline interviews conducted before observing the first meeting. These interviews provided insights about teachers' perceptions about their work as teachers and in relation to students in their particular context and about the opportunities for collaboration they had in their schools and in the network. The following description of these perceptions is based on an analysis of interviews that resulted in themes and categories of how the network's teachers view themselves in interactions with others. This description is also useful for thinking about teachers' disposition toward talking about teaching with colleagues within the network.

Overall, teachers in this network consider their interaction with colleagues as collaboration, and they represent their interactions as a *disposition toward collaboration with colleagues*. There is a positive valuation in their comments regarding interaction that allows for the interpretation of them as collaboration. For instance, a teacher highlights the benefits of conversing with colleagues when she says that “[talking with peers] is absolutely beneficial. Let’s say something didn't work, you tend to block yourself or don’t think of certain things... and if the other colleague comes and tells you that, the colleague tells you, gives you an idea. You try it, and it might work, and if it doesn't, you keep trying” (Victoria, EOD Network, Baseline interview, section 2). Talking with a colleague benefits her professionally by illuminating situations that she, by herself, might not see, therefore giving her the opportunity to solve problems through the collaborative exchange. In another example of disposition toward collaboration, a teacher highlights that it is a two-way support: “Is a support, so I can recommend something to my

colleague or she can say this worked very well, how can I do that in this class? Or she can say the same to me, so that makes a richer environment because you feel that you are growing with your peer, you are not competing” (Paula, EOD Network, Baseline interview, section 1). The direct reference to non-competition makes abundantly clear that this teacher sees her interaction with colleagues as collaboration, in the sense of giving support to one another and working towards creating an environment that privileges the collective over the individual (Hamm & Adams, 2002). These two examples from Victoria and Paula are both about how talking with peers leads to collaboration from a theoretical perspective.

From a more practical perspective, interviewed teachers highlight how collaboration happens throughout network activity. Different examples of this more practical collaboration – coded as *Collaborating* – are represented by things teachers see as part of what they do in the network. About the exchange of strategies, ideas, or materials, a teacher says, “All of us have done a demonstration of something, a “reading” or a “listening,” anything of that we are doing. I am interested in the network because of that, because we do things like that. I think that is something from the network that moves me the most. Having ideas about how to organize, lets say, a Spelling Bee. Because we have to do it first here, internally” (Victoria, EOD Network, Baseline interview, section 3). There is a practical purpose for the collaboration that network activity provides, and Victoria perceives that as the main reason for her participation. This kind of collaboration is a signature of the EOD network; sharing a successful activity is always part of meetings. Another teacher, fairly new at the time of the interview, said, “In general, it’s about showing activities that have worked and explain

why you think they worked well” (Gregorio, EOD Network, Baseline interview, section 4). Similarly, another teacher mentions that members who are pursuing new degrees at the university have contributed to the community’s knowledge. “Once, I remember, every teacher had to share a successful activity that they had done at the university and several commented on their experiences, and I made notes and used some [of the ideas] from other colleagues” (Cristina, EOD Network, Baseline interview, section 3).

A particular feature of the EOD network is that almost all members teach in different schools. Hence, most of their contextual experience is different, profoundly affected by the school culture and the organizational style of the school where each teacher works. Some teachers develop their practice in schools in which the internal culture calls for collaboration on different levels, as is the case with José and Paula. They work with students who have varied special education needs, and the school demands that teachers support each other in actively looking for solutions to the problems their students have. As José points out, “Something that is done very well here is peer assessment. For example, me going to see Danitza’s class or vice versa. Paula has gone to see my class many times and I have gone to see Ricardo’s too. Then we try to share ideas and complement each other” (José, EOD Network, Baseline interview, section 3). José’s experience of interacting with his peers for sharing ideas and complement mutually is concordant with the perspective that producing new knowledge is a social and situated phenomenon (Kirshner & Whitson, 1997).

In contrast, Cristina’s school is very focused on discipline and structure. Her comments speak of an isolated practice where she is only one of two teachers of English, teaching more than 10 classes by herself. She describes her opportunities for talking

about practice with peers within the school as non-existent. “I have never talked about that with other teachers, because in the classroom we are like each on our own story. But if I ask, they might have something about how to manage work, but I have never talked like that with the teachers [here]” (Cristina, EOD Network, Baseline interview, section 4). She has not been provided with the opportunity for a more relational experience with peers, and her words show a lack of connectedness with others.

Rebeca had a different kind of experience. Her school has a history of participation and collaboration, although recently they have focused more on achieving high results on standardized tests as a way to cultivate a positive image for themselves as teachers and for the school. She says, “There are spaces for reflection and dialogue regarding academic or pedagogical activities, but mostly by department. At the end of each semester, the teacher conference, but about other topics, no, we don’t have the instance” (Rebeca, EOD Network, Baseline interview, section 2). Network members’ school contexts seem far from organized to promote collaboration and professional interaction among peers. There might be some instances, especially in schools in which teachers are grouped in departments by discipline, but most teachers see their school experience as separated from the possibility of getting support and feedback. As Cristina describes, “On Mondays we have teacher conference where they talk about topics, but they never talk about these things such as issues teachers have in the classroom, no, they talk mostly about discipline, or students with differentiated assessment, cases, information” (Cristina, EOD Network, Baseline interview, section 4). Having opportunities for professional interaction that center on the practice of teaching is necessary to share the profession (Lampert, 2010). This involves creating spaces for

teachers to talk about their profession, about their subject, their students, and their work in the classroom (Horn, 2010). For these opportunities to emerge, collaboration needs to be part of a school culture that favors open discussion of teaching problems, ‘deprivatizing’ teaching such as to be able to look at its features and create critical dialogue among colleagues (Curry, 2008).

## **4.2 Implementing a design-based project with teachers in a network to support conversations around teaching practice**

### *4.2.1 Overview of intervention design*

As described in the Methods chapter, the intervention designed for the project implemented with this network sought to scaffold conversations among its members by creating a system oriented toward developing knowledge about practice. This system had as a central component an online tool – a wiki – with access only for teachers in the EOD network and capabilities for sharing examples of teaching – artifacts of practice – in different formats, as well as forums to support conversations within the tool. The intervention design included a process of collaboration between participants and researcher that highlighted the role of contextual and cultural aspects of the teachers’ practice in their schools and within the network. This meant that most of the tool features and the support that I provided at the beginning was considered a draft, with the expectation that the tool would be redesigned throughout the intervention. In order to meet this expectation, micro-cycles of design, implementation, analysis, and redesign were implemented in a series that lasted about three months with a one-month period for each cycle. More details on these cycles are provided in section 4.2.2.



During the intervention, teachers were expected to regularly visit the tool that we were designing collaboratively and to participate in sharing artifacts of practice and commenting on others' artifacts. To promote shared meaning of the purpose of the tool and the ways it could address the intended problems, there was also the possibility of proposing additions or changes concordant with the network's interests and needs. The goal was to explore ideas that made sense to teachers, arriving to some agreement on how to adjust the tool. This follows the idea of 'resonance' that Penuel, Coburn, and Gallagher (2013) describe in working with partners who are called to implement an innovation. In the intervention, different means were used for teachers to propose changes to the wiki, so it would resonate with their ideas for how this tool could help them:

- Direct changes of the wiki using the system's tools (Wikispaces).
- Commenting on a section for the change to be considered.
- Communicating the suggestion to me via the network coordinator or directly through e-mail.
- Discussing the change in the network monthly meeting.
- Discussing the change in an individual tool interview I set up with some network members.

Although all the listed alternatives for commenting and suggesting adjustments to the tool as per teachers initiative were available, previous experience and comments from teachers in the baseline interviews made me aware that this might not happen. Therefore, I took the initiative in asking teachers about their ideas during the meetings and set up tool interviews with selected members to discuss their perception of the tool and what could be improved to make it more useful for them.

#### 4.2.2 *DBR micro-cycles*

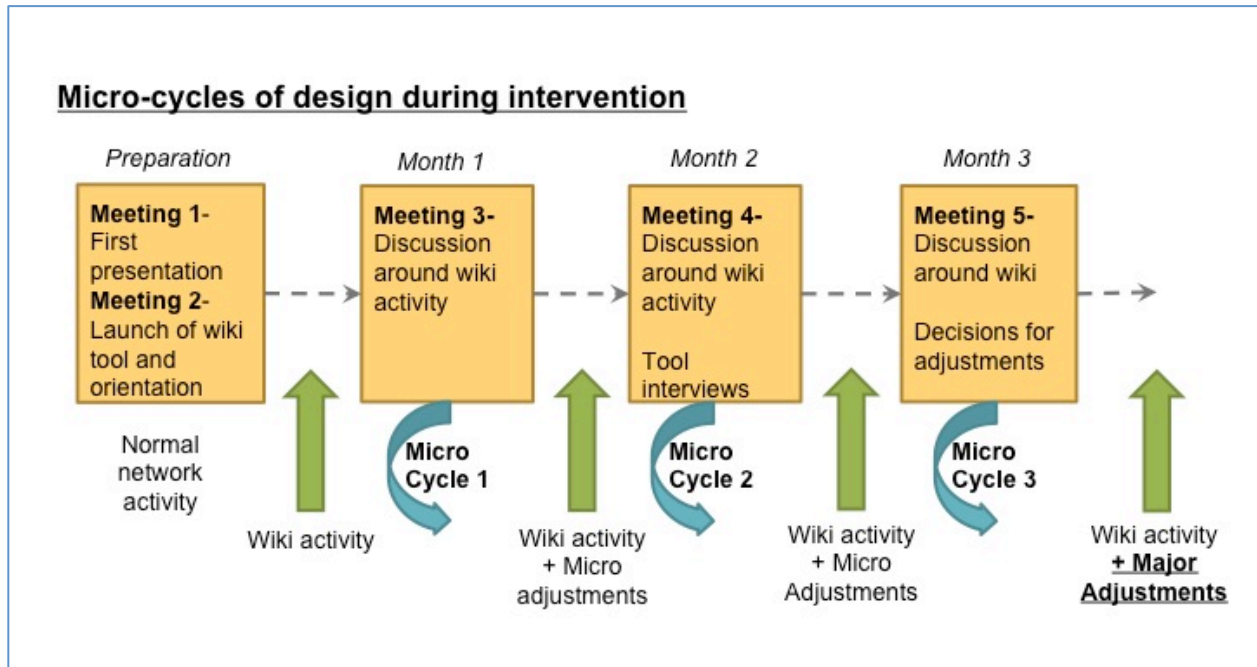
An important idea in doing DBR that I considered for this project is that iteration to improve an intervention through cycles is only one part of the process and that it should not consume all effort, but instead contribute to improving our knowledge about learning and practice (Design Based Research Collective, 2003). The design of micro-cycles in this project included some mechanisms that could inform the production of knowledge about learning and practice. I sought to understand what teachers learned through their participation in the intervention and to contribute toward improving the practice of talking about teaching with peers within the network. The mechanisms considered were the collection of data on teachers' participation within the tool, their perception of and ideas regarding the tool, and the network's needs for adjustment of the tool to support the practice of talking about teaching. Table 8 provides a summary of these mechanisms and the way they were used.

<b>Designed mechanism</b>	<b>Contributed to...</b>	<b>To be used in...</b>
<b>Records of teacher participation within the wiki</b>	Providing details about the process of participation, with attention to individual contributions in the form of artifacts of practice and participation in the conversation that the artifact initiated, and participation in conversation initiated by other participants.	Describing the participation process of a teacher and generating an understanding about what teachers might learn through that participation.
<b>Teacher perceptions about participation in the wiki</b>	Illuminating the participation process beyond what could be observed in the tool, and including teachers' perceptions.	Complementing the description of the participation process using not only the researcher, but also the participants' perspectives.
<b>Teacher perceptions about needs for adjustment in the wiki</b>	Identifying the elements that needed adjustment in the tool, as well as the new features required to respond to network's needs.	Informing the adjustments of the tool, considering participants' perspectives and needs.
<b>Coordinator's perception on the whole process</b>	Obtaining the perspective of the group leader on the whole process of the intervention. This mechanism was included for consideration of the privileged view of the coordinator due to her experience in the network and knowledge of the participants.	Complementing the description of participation process, and identifying particular network needs that the tool could fulfill through adjustments.

**Table 8:** Mechanisms for informing knowledge about learning and supporting practice.

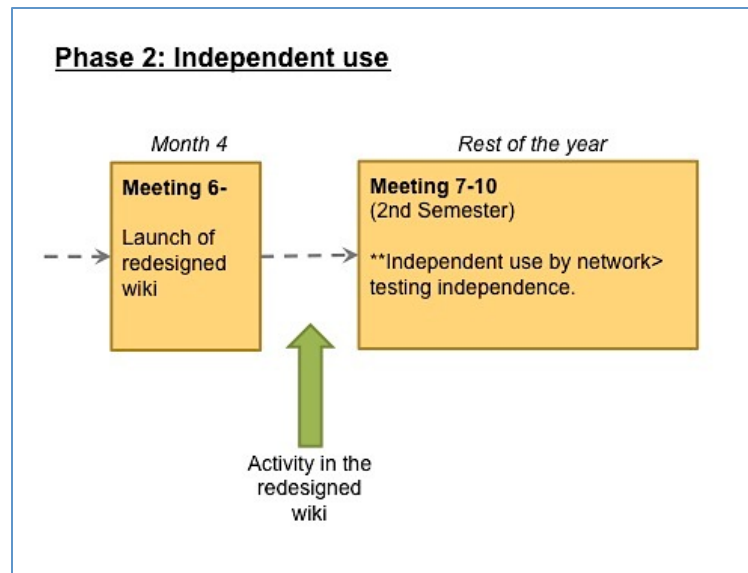
The intervention included three micro-cycles of design, enactment, analysis, and redesign of the strategy to develop the tool. In each micro-cycle (see Figure 6), teachers were invited to use the wiki to access the examples of teaching practice, reflect on the features of teaching represented in *artifacts of practice* (e.g., videos, detailed descriptions), and interact with other network members through discussion in forums. Then, teachers engaged in a face-to-face meeting – the network's regular monthly meeting – where they could use the same artifacts of practice for discussion and collectively perform an analysis of the practice observed. At some point in the meeting, I set out to discuss their views about the wiki and the adjustments they needed to make the

tool more useful and engaging. In addition, during one of the micro-cycles I met with some of the teachers to discuss the tool features, their ideas about what worked well and what could be adjusted, and their suggestions to improve the wiki tool.



**Figure 6:** Micro-cycles of design during intervention, Phase 1.

In summary, the micro-cycles in Phase 1 of the project spanned a 3-month period, with an initial stage of preparation that included the first presentation of the project to the whole network and the actual launch of the wiki for teachers’ use. After sharing the initial design with network members, three subsequent cycles were included to provide time for wiki use (enactment), discussion around wiki activity in whole network meetings and interviews (analysis), and micro and major adjustments to the tool (redesign). In Phase 2, the intervention included the launch of the redesigned tool and a period of independent use by the network (see Figure 7).



**Figure 7:** Phase 2 of Intervention.

#### 4.2.3 *Implementation of designed intervention*

The implementation of the designed intervention involved effort from both researcher and participants. From the perspective of the latter, an outsider, in their first meeting, offered participation in a project to address a problem that they may or may not have perceived and asked them to do new things around their network participation. For the former, the challenge was to engage a group of teachers in a project that aimed to develop a tool to support the practice of talking about teaching. The bid was set out in the intersection of participants' willingness to engage in the project and the researcher's ability to understand their context, needs, and practices as a group and to guide a process for collaboratively developing a tool that would support thinking about their work. In the following, I will describe the process of implementing the intervention, uncovering the features of this process that provide insights about the relevance of negotiating the focal problem.

### *Gaining access*

My first contact with the EOD network happened in July 2012 when I was introduced to the network coordinator. She has been the coordinator for many years and is an important part of organizing activities and encouraging her peers to participate in both network-led and MoE-led activities. She serves as a liaison between the teacher network and the policy leaders at the MoE. After our first meeting during a MoE activity for English teachers, I met with her in August and December of the same year. In these conversations, I expressed my interest in doing collaborative research with her network and discussed with her the role of conversations around teaching practice. These three meetings were crucial in negotiating the potential interest of the coordinator in such a project and subsequent access to the whole network for implementing the project. They were also important for defining roles and identifying authority figures that could influence the emerging partnership, as well as to clarify who to talk to in the case that issues arose (Penuel et al., 2013). In between meetings, I also shared some ideas via email with the coordinator, explaining the direction that our collaboration could take. The following is an excerpt of that communication:

The main idea that I have been defining is on **the importance of focusing the work of the network on the analysis of teaching practice in the classroom** [emphasis in original]. Available literatures on communities of teachers highlight the importance of collaboration among teachers to learn more about their practice for improving teaching. There is a unique opportunity in the group you have formed as a network to learn and progress together. For this it is necessary to develop activities focused on what teachers do in their practice and to promote

discussion about it with effective tools. I'd love to hear your thoughts on this idea, and if you think your network would benefit with a job of this kind. Also, you told me that much of what you do is in this line and therefore your feedback is very important to think together on a strategy (E-mail communication with EOD network coordinator).

In addition, I described a potential course of action to continue the discussion and shared a document with an initial project proposal for review and discussion (See Appendix 7). The coordinator welcomed the proposal, however, her response was brief and apologetic about the length of time it took her to respond because of many work-related commitments. The coordinator and I tried to have an online conversation, but it proved impossible to arrange that meeting. Fortunately, before the end of 2012, I met the coordinator one more time in Chile to talk about the details of the project. This meeting was helpful, because it was the first time the coordinator directly addressed the ideas of the project and provided her opinion. She was aware of the relevance of talking about the practice of teaching and comparing her own views with those of her peers, favoring the possibility of talking about what works well for teachers. Initially, her view of the potential participation of the network in the project had a slightly different focus than the one I presented to her. During our conversation, she directly expressed interest in my involvement with the network from a practical standpoint, where I might offer them something useful for their practice in concrete ways such as “working on strategies and methodologies that can be of use in the classroom rather than talking too much” (Pre-proposal meeting with EOD network coordinator). Although I empathized with this

perception, I sought to motivate the coordinator to think about the project as a collaboration among network members. The project would provide some tools for expanding the network possibilities for working together and discussing how to address teaching in the classroom, eventually contributing to one another's practice by sharing teaching strategies.

The next step in the process aimed to secure coordinator agreement for inviting the network to participate in the project. This happened over the summer vacation in Chile, and communication happened via email and videoconference. The coordinator pondered the idea over this period and by the end of summer communicated her decision to pursue the project with the network. With this decision, the need for common agreement on participation from all the network members seemed paramount for the research, and consequently, I looked for mechanisms to achieve it. The beginning of the academic year was approaching fast, and the coordinator considered it better to communicate the decision for participation to network members and begin working. She drafted a letter (Appendix 8) for her fellow teachers in which she included an outline of the project based on information I provided and that she shared with the network in the convocation email for the first meeting of the year. The network was going through some difficulties with member commitment. There was a group of five long standing members who had been participating for years, two relatively new members, and a number of "floating" members who had been unstable in their participation. For the first face-to-face meeting, about half of the teachers attending were new members, and the coordinator estimated that was better to go ahead and introduce the project as a network project in which all would participate. Teachers signed a formal consent before the first interview,



but by the time of the network's first meeting of the year all members had been assumed participants.

### ***Introducing the project***

The coordinator allocated time for me to introduce the project to network members during the first meeting of the year. Since I was not in Chile, this participation took place via online conference and consisted of a short presentation of the purpose of the project and details about the intervention (see Appendix 9). As per their request, in concordance with the “only-English” practice in their meetings, I presented in English. Teachers showed interest in the ideas presented, asking questions about the tool and the possibilities it offered. There were 14 teachers in this meeting, four of them new to the network and two visiting as interns in veteran teachers' classrooms.

After the introduction, I traveled to Chile to visit the teachers in their context and conduct baseline interviews. Teachers were all welcoming and interested in the project. Some had questions about the details of their participation, which was an indicator that the presentation I gave in their first meeting could have been clearer about these details. During these interviews, all the teachers signed consents for participation, which were added to the consent included in the survey they responded to online.

During the second network meeting of the year, the wiki tool was launched, granting teachers access to the website and all available features. I personally presented the tool at the launch and explained how to enter the system, explore the content, and contribute. The purpose of the first micro-cycle was to allow teachers to explore the tool and participate in a conversation around an *artifact of practice* that was included in the

wiki's launching. Teachers were asked to identify any potential areas of improvement and bring their comments to the next meeting.

### ***Participation in the intervention***

The intervention involved 3 micro-cycles in which teachers could use the tool and suggest modifications or directly modify the wiki to suit their needs. Participation consisted of creating an *artifact of practice* (i.e., video or detailed description of teaching and one or more questions to invite conversation), creating a new page in the wiki for the purpose of presenting a new topic and sharing a document, and commenting on forums.

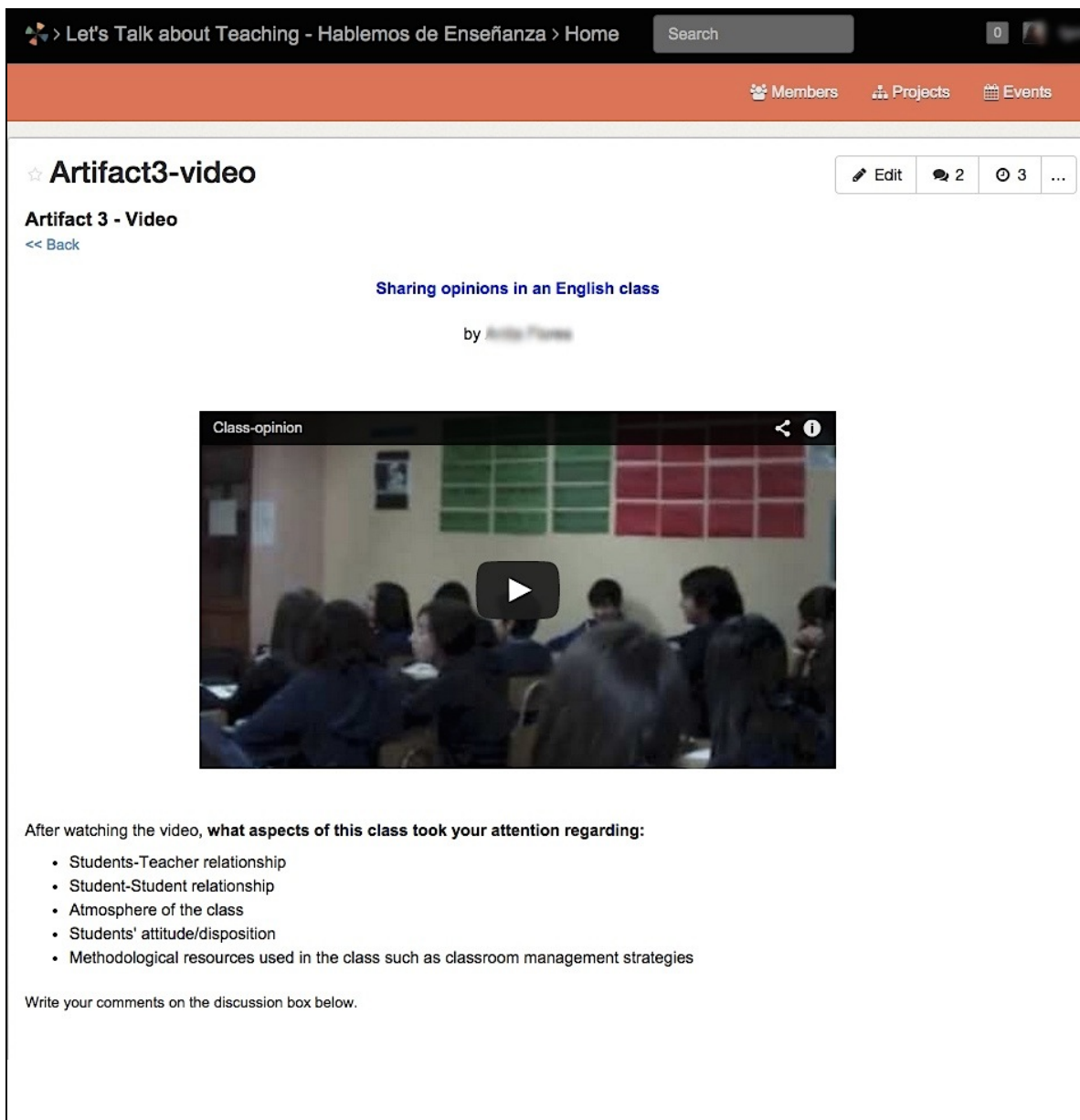
Table 9 provides an overview of participation in the different sections of the wiki.

<b>Section within wiki</b>	<b>Type of contribution</b>	<b>Number of contributions</b>	<b>Number of individual contributors</b>
Artifacts of practice	Commented on forum	24	5
Artifact of practice	Shared an artifact	4	4
Pages	Created a page in the wiki	12	3
Wall	General comments on homepage wall	13	6

**Table 9:** EOD network participation in wiki.

Contributions to the artifacts of practice section consisted of videos of classroom teaching accompanied by a prompt for discussion. Teachers designed both the videos and the prompts, and I supported the uploading of materials as needed. As shown in Figure 8, a typical artifact of practice comprised a title, a video, and a prompt for engaging conversation around the example of teaching. Of 11 active network members, four of them shared artifacts during the intervention period of Phase 1. Three artifacts were video

examples of teaching, and one was a description of a difficult teaching situation with students and a request for suggestions about how to face the challenge.



The screenshot shows a web interface for a community. At the top, there is a navigation bar with the text "Let's Talk about Teaching - Hablemos de Enseñanza > Home" and a search box. Below this is a secondary navigation bar with icons for "Members", "Projects", and "Events". The main content area features a star icon and the title "Artifact3-video". To the right of the title are buttons for "Edit", "2" (comments), "3" (likes), and a menu icon. Below the title is the subtitle "Artifact 3 - Video" and a "<< Back" link. The video title is "Sharing opinions in an English class" by "Ardis Flores". The video player shows a classroom scene with students and a teacher. Below the video, there is a prompt: "After watching the video, what aspects of this class took your attention regarding:" followed by a bulleted list of aspects to consider. At the bottom, there is a text box for comments.

☆ **Artifact3-video** Edit 2 3 ...

**Artifact 3 - Video**  
<< Back

**Sharing opinions in an English class**  
by Ardis Flores

Class-opinion

After watching the video, **what aspects of this class took your attention regarding:**

- Students-Teacher relationship
- Student-Student relationship
- Atmosphere of the class
- Students' attitude/disposition
- Methodological resources used in the class such as classroom management strategies

Write your comments on the discussion box below.

**Figure 8:** Example of artifact of practice.

Network members also introduced some changes that came from their assessment of needs and the extent to which the wiki covered those needs. These changes came from the suggestions provided by teachers during micro-cycle 1 and micro-cycle 2. The

suggestions were collected during the tool interview and offered by teachers on their own initiative. Some of the changes made during the micro-cycles were:

- *Creation of a page to share meeting reports, including agendas, agreements, and pictures.* This addition was made by the coordinator for the purpose of having a record of their meetings and providing information about the activities and topics discussed for those who were unable to attend.
- *Creation of pages to share resources and materials aimed at supporting this discipline.* These pages were created by teachers who were interested in sharing pieces that could be useful for their teaching such as strategies for teaching English as a foreign language. Their contributions comprised handouts, descriptions of activities, and links to useful resources. Inclusion of these pages provided a different look to the wiki than was initially designed, showing what probably interested teachers most. It was also a reflection of their comments in meetings and tool interviews.
- *Reorganization of menus and links.* This was suggested by two teachers during the tool interviews and contributed to making navigation of the wiki page simpler and smoother.
- *Improvement of notifications to increase participation.* Also as suggested during the tool interviews, I prepared a handout with directions about how to setup notifications on each teacher's account. Through this change, teachers received email notifications after changes/contributions were made in the wiki.

Teacher participant	Regular navigation focus	Most liked features	Least liked features	Suggestions
<b>Cristina</b>	<ul style="list-style-type: none"> <li>- As motivated by coordinator email, she visits the meeting reports' page.</li> <li>- Artifacts of practice.</li> <li>- Resources.</li> </ul>	<ul style="list-style-type: none"> <li>- Comments on each page.</li> <li>- Possibility of inserting videos.</li> </ul>	<ul style="list-style-type: none"> <li>- Not a friendly system</li> <li>- Lack of notifications (system-dependent).</li> <li>- Scarce changes in the wiki, not much participation (participants-dependent).</li> <li>- Interaction is less evident and a contrast with more familiar systems (e.g., Facebook) makes this one less interesting.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve notification system.</li> </ul>
<b>José</b>	<p><i>Not familiarized with the wiki</i></p> <ul style="list-style-type: none"> <li>- Artifacts of practice (decides to go there during a free navigation period).</li> <li>- Videos and resources.</li> </ul>	<ul style="list-style-type: none"> <li>- Possibility to share methods, tools, and ideas.</li> <li>- Forums.</li> </ul>	<ul style="list-style-type: none"> <li>- Difficult for people to contribute, engage.</li> </ul>	<ul style="list-style-type: none"> <li>- Share things that people from other places do, not only people from the network.</li> </ul>
<b>Paula</b>	<ul style="list-style-type: none"> <li>- Artifacts.</li> </ul>	<ul style="list-style-type: none"> <li>- Tool with which they can share useful strategies, resources, and materials for English teaching.</li> <li>- Academic tool.</li> <li>- Possibility of sharing online, which is more time efficient and can contribute to in-person conversation.</li> </ul>	<ul style="list-style-type: none"> <li>- That the menu has everything and not categories.</li> <li>- Difficult to know when someone has contributed or commented. You need to set up that in preferences to receive notifications.</li> </ul>	<ul style="list-style-type: none"> <li>- Make it as simple as possible.</li> <li>- Artifacts should be simple and show everything in one place.</li> <li>- Organize resources by abilities (reading, writing, listening), perhaps using the Search feature within Wikispaces.</li> </ul>
<b>María</b>	<ul style="list-style-type: none"> <li>- Artifacts of practice.</li> <li>- Resources.</li> </ul>	<ul style="list-style-type: none"> <li>- Having access to resources.</li> <li>- Having the possibility of thinking about what can be improved, and what is missing.</li> </ul>	<ul style="list-style-type: none"> <li>- A bit plain, not catchy to the eye.</li> </ul>	<ul style="list-style-type: none"> <li>- Include more colors and images. Make it more appealing and interesting.</li> <li>- More informative menus with visible categories.</li> </ul>
<b>Rebeca and Mónica</b>	<ul style="list-style-type: none"> <li>- Artifacts of practice.</li> <li>- Resources.</li> </ul>	<ul style="list-style-type: none"> <li>- It is positive to have an online space to share our materials.</li> </ul>	<ul style="list-style-type: none"> <li>- Accustomed to FB-like pages, so the look and feel of this one is less appealing.</li> </ul>	<ul style="list-style-type: none"> <li>- Create spaces for the network's life such as reports of meetings or special pages to share resources.</li> </ul>

**Table 10:** Teachers' input on the tool and how to improve it (from Tool interview).

Tool interviews were included as a component of the intervention as a way to assess participants' perceptions about the tool design and its contribution to generating conversations around teaching practice and to solicit their suggestions for adjustments. These interviews were also intended to identify in-situ the features of teachers' tool use, including navigation and commonly visited places in the wiki. Data collected in interviews helped guide decisions for changes and adjustments at the end of Phase 1. Interviews were conducted with six teachers during micro-cycle 2 of the intervention and happened in each teacher's school using their personal laptop or a school computer. A summary of the inputs provided by teacher participants is offered in Table 10. In all the cases included in the table, teachers began navigation of the wiki by looking at posted artifacts of practice, and then turned to the resources already shared on the site. They were interested in looking at what was available or new in the wiki. Most teachers were surprised to see contributions they did not know were there, suggesting infrequent wiki visits and the need for notification pushes. Most of these teachers were accustomed to social network systems such as Facebook and expected the wiki to meet their functionality expectations accordingly.

Suggestions for improvement covered different topics on more than one level. In terms of usability and appearance, teachers mentioned wiki functionalities such as adding notifications, more appealing graphic design, and content categories for easier navigation. As for content, teachers mentioned the possibility of having contributions from people in other networks and including relevant information for members such as meeting reports or teaching resources. Comments about the interface features were more on the surface level of the wiki, one that represents the first encounter of the user and affects their

feeling about the tool, their engagement, the clarity of the activities proposed, and their understanding of how to navigate the environment. On a deeper level, participants discussed the purpose of the wiki and the relevance of the artifacts as means for facilitating thinking about “what can be improved, and what is missing” (María, EOD network member, Tool interview).

Despite the interesting suggestions from participants for modifying the wiki, many of the adjustments went unused. After the first academic semester, the EOD network experienced a period of decreased activity, including lack of responsiveness from members to coordinator communications and the temporary cease of meetings. Personal contacts with the coordinator offered me a view of what was happening in the network’s life and how that impacted the continuation of the project. Not having an active network resulted in less collective activity and less communication. Although the wiki tool could have been a means for teachers to keep interacting in times when it was difficult to meet in person, they did not use it that way.

### ***Follow up***

The follow up meeting took place 10 months after Phase 1 of the intervention ended and was held face-to-face in the coordinator’s school. I asked her in advance if we could meet with a small group of network members for a group conversation rather than a one-on-one interview. The purpose of the meeting was to give participants an opportunity to share their views about the project with the perspective of almost a year of work together behind us and to talk about their vision of collaboration among teachers as a way of improving teaching practice. The questions in the protocol guided the conversation

with the coordinator (Mónica), one of the senior members (Rebeca), and another member (Paula) who had been part of the network for about three years.

Conversation began with teachers' experiences collaborating with other teachers around teaching practice that they considered successful. Rebeca mentioned a fashion show done with students when they were a young network that involved parent-teacher collaboration to plan and implement. She said, "In parent conferences, they would complain about the demands of English language classes as they didn't see them as that important, but after the fashion show, where they had to describe their sons and daughters attire they realized that English might be important after all" (Rebeca, senior network member, Follow up meeting). Mónica described experiences collaborating with colleagues and with her students. In both situations, she deemed the collaborations successful because they resulted in products – a coexistence manual for the school and a song show with two grade groups of students. Rebeca seemed to agree with Mónica that having a product was important in the perception of a successful collaboration. Rebeca recalled a play put on with students from different network member schools that was so successful "that it was showcased in the Ministry of Education website as an exemplar activity for all English networks [in the country]" (Rebeca, senior network member, Follow up meeting).

After they shared these experiences, I asked about who decided the topics they focused on in their projects. Their response was clear: "This network projects were always decided in agreement with network members. The Ministry of Education defines the objectives [talking about promoting English language in schools]; they give the goals, the frame, but we are who decide the project's topic, it is the network that decide to apply



for funding from the Ministry” (Mónica, network coordinator, Follow up meeting).

Rebeca emphasized that

they sought to showcase English language, taking it outside of the classroom to the community, and we decided that, but always based on the Ministry of Education’s invitations. They would say now all the networks have to apply with an innovation project, and then we would apply, but how we would do it was our decision (Rebeca, senior network member, Follow up meeting).

According to the coordinator, Mónica, the impact of the project was always their decision. She said, “What is the objective, the activity, what we needed, who was going to participate, why we were going to do it and what was going to be the final product, when, where, and at what time was something we decided” (Mónica, network coordinator, Follow up meeting). They emphasize the level of responsibility they have in planning and conducting collaborative projects and that these decisions are their territory. They recognize that there have been problems, but mostly “operational” and not at the core of their projects. Mónica mentioned problems related to having teachers from many different schools participating in projects, which can be a coordination challenge, and also impact teachers’ involvement if few teachers were coming from the same school as they would lack in-school colleague support (Penuel, Fishman, et al., 2007). This idea segued to talking about teacher responsibility when collaborating in projects, about which Paula said,

That was an issue then and continues been one today. That is also a major concern this year regarding teacher’s responsibility to stay in the network, right? However,

as it happened with the play or it can happen with any other of the activities we have done or that we will do, at the end we decide to do an activity and we carry on with that the same. I mean, we continue with the activity despite some teachers decide to leave. We try that the core of what we decided to do at the beginning can be implemented any way, with all the teachers or just some of them (Paula, network member, Follow up meeting).

We continued the conversation focusing on the “Let’s Talk about Teaching” project that we had implemented the year before. I began by asking them what they thought the problem we were trying to address was. I tried to make clear that I was not referring to conflicts or issues, but to the project focus, the “what” of the project. However, it seemed unclear to them that by using the word “problem” I was not talking about conflicts. This led to several minutes of questions and answers regarding the meaning of “problem” in our conversation<sup>4</sup>. I tried to define the problem as the thing we wanted to address by implementing the project or, in other words, what it was that we were trying to accomplish with the project. Paula said that we were “trying to solve the problem of teachers having scarce time to connect with each other, thinking that this form of communication [the wiki tool] should be more feasible to be used by all” (Paula, network member, Follow up meeting). Mónica added that she thought everything happened because of selflessness, and I try to bring conversation to the focus of what we wanted to

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<sup>4</sup> It is interesting to note that this conversation was held in Spanish. Although the word “problema” has a similar definition as the word problem, in the Chilean use of Spanish it is a word with a strong negative connotation. As much as I wanted to use the term to convey the idea of a situation that we want to address and solve, the teachers perception was that I was talking about the difficulties we faced during implementation.

implement before going to what we think it happened. On a different note, Rebeca said, “we were trying to reflect, to share realities about education, how to improve, strategies” (Rebeca, senior network member, Follow up meeting). Mónica added, “[The project sought to] give us the time to reflect about our job as teachers, our everyday teaching practice. That was like the topic, the problem of the project. To create the instance that in our network, on top of everything we do, we could have a reflection instance about our teaching practice” (Mónica, network coordinator, Follow up meeting).

The conversation turned toward possible situations that made it difficult to achieve the goal of interacting through an online system. The three teachers agreed on the usefulness of the project, and they believed it was important for their life as a network and their work as teachers. However, they recognized that there were issues to be addressed in carrying on with the project. Paula mentioned the difficulty of engaging with the format of the wiki, particularly because she, Mónica, and Cristina – a member not present in this meeting – who are all very active in the network’s life have established patterns of communication through Facebook, mail, or direct calls. Rebeca reported that she felt discouraged after sharing a long paragraph in the wiki to which no one replied. Mónica continued by saying that she agreed with Rebeca and that “this was a good instance for us to reflect (...) but why it didn’t work? It was because of teachers’ absenteeism. I think the problem here is that many people started last year in this project, they committed and then they didn’t show up. Even without an excuse. Therefore, we always expected them to come, but that didn’t happen” (Mónica, network coordinator, Follow up meeting). The idea that teacher commitment at the beginning of the year would result in participation in the network’s activities collided with the reality that

teachers ceased to come to meetings and did not respond to communications. Paula pointed out that “we had a meeting with one person, and then the other with someone different, then there was not continuity” (Paula, network member, Follow up meeting). In summary, teachers mentioned issues that affected project implementation such as lack of commitment and lack of continuity in participation.

The teachers expressed regret about not being able to make the project work, pointing to the lack of commitment from many teachers and the progressive demotivation that emerged as a consequence of that environment. Paula acknowledged that it might have been shortsighted to embark on a project when so many new members had just joined the network. She said, “Maybe we failed in identifying from the beginning that we did not have stable teachers within the network, and anyway we tried to have them on board in this new activity without them knowing what it meant to be part of a network. That was against us” (Paula, network member, Follow up meeting). According to Paula, the network picked up the idea without considering that project requirements might not match what was possible for first-time network members. In other words, there might have been a misalignment between what the project needed in terms of participation and what was possible for new members to accomplish. In response to these thoughts, Mónica said emphatically, “But everyone agreed. I mean, they were asked. It wasn’t something imposed. Do you agree? Yes. Do we want this? Yes.” (Mónica, network coordinator, Follow up meeting). The other two teachers agreed with Monica’s assessment and added that the lack of interest generally is one of their major problems as a network. Paula commented:

Is that I think the main thing, and I think it was a discussion in our first three meetings this year. This has been the main issue for us during this last time. We have seen a decrease on interest and work of the teachers towards building a learning community; this has to do with teachers' interest. It is about how we, as teachers who might like to do things, can engage others who are just coming, so they can later leave a trace albeit smallish but that can stay with us in this work. I think, as you said Mónica, it is about engagement, and re engage ourselves with what we are doing, so that us with our motivation can motivate anyone who is joining the network. I mean, I think that is paramount, that from our motivation - and if we know that these teachers want to be part and will have a continuity - and then start to project with them in other instances, other situations, other activities. I think the main thing, like the crucial thing for us now has to do with it. It is to have teachers who are motivated. (Paula, network member, Follow up meeting).

“Motivation” and “teachers’ interest” were recurrent themes that Paula brought up in expressing her opinion about what happened during the intervention, and exploring these themes might lead to an understanding of what is needed for a lively network practice and how much influence members have in cultivating those qualities. Paula felt that she and other long-standing network members should be able to engage new members in the same ways that they have been motivated, igniting the same passion and commitment in newcomers that had carried the network through its early days.

### **4.3 Case analysis: negotiation of problems in the EOD network**

#### *4.3.1 Teachers disposition toward conversation about teaching*

The practice of teaching can be isolating, as Lortie (1975) once expressed when describing the work of teachers in the classroom. Teachers spend most of their time teaching in a closed environment in which they are masters of craft and ideas, and in which other teachers are not usually present. This is far from an American-only classroom experience; it has been identified in other countries such as Chile (Avalos, 2011). There are references in the data collected in this study to the difficulties that teachers face in connecting with peers in a day-to-day basis, which in many cases impedes conversation and potential collaboration around teaching. In the case of EOD network teachers, this isolation is increased by teaching a subject that has little time dedication to it in the curriculum, affecting the number of teachers in the discipline at each school. However, as we have seen, the teachers in the EOD network have an opportunity to break out of this isolation through participating in a teacher community designed just for them.

Both in the survey data and in the baseline interviews, teachers express explicit awareness that interaction with peers is an opportunity for collaboration and learning about teaching. Network teachers report talking with colleagues about issues that arise in teaching the English language and in dealing with student learning as very important. They also see that observing others and their work and getting feedback from peers on their work are valuable practices. The importance they place on these interactions with colleagues and the potential benefits they might bring illustrate a disposition toward collaboration. This disposition is represented in their perceptions about conversations

with colleagues within their respective schools and in the network and in the perspective on collaboration that their comments take. From all the interviews analyzed, the most common perceptions were identified as referring to the themes *Interaction* and *Network activity*. Among them, the most common categories were *Disposition toward collaborating with colleagues* (perception from a theoretical perspective), *Learning from others*, and *Collaborating* (perception from a practical perspective). These perceptions hint at the value teachers give to interacting with colleagues, particularly those interactions that have a collaborative purpose. There is a further important step in valuing collaboration for engaging in collaborative activity (Salomon & Globerson, 1989), however, other complex processes are involved in being able to perceive benefits from that collaboration such as learning about one's practice (Dillenbourg, 1999).

Regarding expectations that teachers have about interactions in the network, there is a special emphasis on exchanging experiences, materials, activities, resources, and methodologies. Teachers' reasons for interacting in the network seem to be practical, which is noticeable in a representative teacher comment: "Because of time constrains, we are always exchanging resources, not much of lesson plans because of our different contexts, (...) but always strategies, things like that" (Olivia, EOD Network, Baseline interview, section 3). This is consistent with what the coordinator, at the beginning of negotiations about project goals, expected the study could provide to the network. She saw the study as providing something useful for the teachers' practices such as strategies and methodologies for teaching the English language. This expectation contrasts with the problem that I intended the implemented project to address and is a particular feature of the negotiation process with this network. As partners, we did not reach common ground

on the problem; teachers saw the exchange of resources a priority over the collective analysis of teaching practice. It seems clear that the teachers and I were not completely aware, as the project progressed, that we needed each other to achieve our own, and the collective goals, for an effective negotiation to occur (Potvin et al., 2003).

#### *4.3.2 Negotiation phase and potential influence in intervention*

The negotiation phase for the intervention involved communication and relationship building with the coordinator, and then communication with network members in the introduction meeting, the baseline interviews, and the first face-to-face meeting I attended. Some important ideas emerge in looking at the different aspects of this negotiation and in analyzing the data collected during the intervention.

***Misalignment between proposed study and network coordinator ideas:*** Engaging in the same idea for the project was challenging from the first conversations with the coordinator. The focus of the coordinator's interest was supporting members' teaching through providing good examples of activities, strategies, and resources to them. Although we agreed on the importance of reflecting on practice, our views were somehow misaligned about the project focus and implementation. Another senior member participated in the first meeting prior to the implementation, in which the idea of supporting teachers' conversations about practice was discussed. The senior member was supportive, but the coordinator did not find the idea necessarily useful for the teachers' actual teaching, and therefore deemed it less relevant than providing ideas about how to support students in communicating ideas in a conversation or understanding a text in English. This misalignment could be taken as a sign of conflicts to come in implementing a project that did not address the main problem as identified by teachers. Teachers



perceived that the implementation was not consistent with their needs and that perception might have compromised the implementation (Penuel, Fishman, Gallagher, Korbak, & Lopez-Prado, 2009).

***Individual consent for participation:*** All study participants were provided with information about the project and asked for their consent before data collection occurred. They were invited to participate, but in practical terms, they became participants because they were part of the network. The coordinator communicated the details of the project and asked for their agreement to participate, but because they were part of the network they were automatically included in the study. This may have produced a situation in which teachers felt unable to decline participation and affected their commitment to the project. Commitment tends to be stronger when intrinsic interest drives participation and people can see how a project works and the benefits it can provide (Borko & Klingner, 2013).

***Particular circumstances in the life of the network:*** This long-standing network experienced difficulty maintaining the cohesiveness of the group and conducting activities in the year before the intervention. There were several reasons for this “rough patch.” One of them was the reduction of incentives from the EOD program. For many years EOD offered professional development opportunities to network members that motivated teachers to participate. Lack of time also created barriers for consistent and active participation. In this scenario, a project that asked for additional participation and activities that required time outside of meetings might not have discouraged teachers from engaging more actively.

In addition, the mixture of face-to-face and remote involvement that I had with the network, their distribution in different schools, and the lack of tool visits seemed to impact the relevance of the project to network members. In other words, teachers might not have kept the project as present in their daily or weekly activities, participating as was minimally necessary for sustaining the implementation.

***Engagement of new participants:*** There was not enough awareness about who was in the network and how prepared new members would be for an activity such as the one I proposed. Paula's comment about this during the follow up meeting identified the difficulties in negotiating problems with teachers before embarking on a project that requires collaboration and participant involvement. Her thoughts provide a way to interpret low participation in the study: Perhaps new members did not know what kind of participation in the network was expected from them, in which spilled over to the intervention. As the communities of practice idea suggests, involving newcomers in a community requires those more experienced to show the just arrived the practices they have developed in a process of "legitimate peripheral participation" (Lave & Wenger, 1991). The new teachers joined a community with a long-standing history, different practices and routines as a network (e.g. the annual organization of activities showcasing student English learning), and different projects such as the one they agreed to participate in for this study. This presented challenges for those just joining and for those who had been there longer. A process by which more experienced members could partner with new members might have helped them cope with the novelty and learning the practices of the community.

***Changes in the wiki were modest and showed a particular orientation to share resources and strategies:*** These additions to the wiki modified the initial design in ways that were oriented toward practice in the classroom; however, it is not clear that conversations about practice happened as a result of these contributions.

***Suggestions for adjustment were tool-centric:*** Most teacher suggestions for adjustments to the tool had to do with appearance and usability issues rather than with the activity in the tool. Teachers reportedly value talking with peers about teaching; however, it did not emerge in their thinking about the tool. This might be due to the nature of the interview, in which the main focus was the tool. Asking for suggestions about the tool may have implied changes to the navigation or look and feel of the wiki, maybe discouraging suggestions for other changes.

***Looking for a mark of success:*** In the follow up, teachers talked about the products of their work being a mark of success. If collaboration with others led to a satisfactory product, they had evidence that things worked well and that the collaboration was successful. This mark of success might have gone unseen in the phase of negotiation of the problem of practice to focus on during the implementation, leading to a situation in which expectations and actual experience did not match for participants. For this study, it might not be fair to talk about that we did not see at the beginning – during problem negotiation – because this perspective only emerged at the end. However, it can be useful for future implementation to explore partners' expectations in more depth and to be aware of ideas that might be counter-normative (Penuel et al., 2013). In this case, a finished product was not part of the implementation plan and, in this way, did not support

what teachers might have been looking for as a result of their collaboration with me as researcher.

## **Chapter 5**

### **Findings from the Second Case – In-school community**

#### **5.1 Insights from first case that illuminated second case**

##### *5.1.1 Negotiating access from another perspective*

According to the study design presented in Chapter 3, a second network was added after Phase 1 to implement the modified intervention tool in a different context. As noted in the Methods chapter, securing participation from a new network was a difficult process. At the time, I had been talking with another English language teachers' network for almost a year in an effort to gain access to their members for the purpose of completing the dissertation studies. This network participated in a previous study I had conducted on the Chilean English teachers' networks and seemed a good candidate for participation. The network gathered teachers from different public schools in a low-income district of Santiago, Chile. This network was different from the EOD network in terms of school types included and teachers' and students' backgrounds, making it possible to study the intervention process in different contexts. Also, the coordinator

showed interest in the project and had a positive perception of the proposed goal, which suggested the possibility of working together successfully to study ways to support conversations about practice among the network's members. However, after several meetings and email exchanges over the course of a year, it was clear that the many difficulties affecting the network made working with them an unviable option. A different strategy had to emerge in order to continue with the planned intervention.

I started searching for other networks that might be interested in the project and reached the EOD program coordinator at the Ministry of Education. She suggested contacting a network that she considered a good prospect for participation, like the EOD network. Despite our best efforts, getting a group of teachers on board remotely proved difficult. First, we had to overcome challenges in visualizing the wiki and technological barriers to communication due to deficient connectivity. Using remote connection was the only way to communicate with the network coordinator and share the purposes of the project, as I was no longer in the country. Once the connectivity problems were solved, the coordinator and I proposed having a meeting with network members to introduce them to the project and invite them to participate. I was looking not only for their agreement for participation, but also for a positive disposition toward the idea of using the wiki as a tool to support their conversations around teaching practice as a network.

I presented the project in the meeting, highlighting the relevance of talking about teaching using artifacts of practice and having a space to discuss issues of teaching within the group they had nurtured and sustained. In the discussion afterwards, teachers asked in what way the project would support their need to update strategies for teaching English as a foreign language and to gain access to resources that they did not have. In some way

they showed concern that the project would not provide what they needed to improve their teaching, which in their view was about innovations and professional development from external sources. Despite this, they expressed desire to use the wiki. I gave them access, but only two teachers entered and had some activity within the tool. It was clear that developing participation, including sharing examples of practice and discussing them, would require presence and support from me, which was difficult to do remotely. I needed to find a partner, an ally who could support the project in situ. That was not possible, which resulted in the decline of the work with this network. Since it was not possible to carry out the implementation with this network, I again searched for a new network to continue the project with the added requirement that it had to be one with more in-situ support.

A new network came to me almost by coincidence, and it resulted a valuable exchange between the project's interests and those of the group. By professional reference, I met Sofía, a psychologist working in a private school in the third most populated Chilean city. I had known her for about a year at that time, and our interaction had revolved around common interests in collaboration and teacher reflection around practice. I visited her in her school on a previous trip to Chile, and she introduced me to Ricardo, an elementary teacher who was the technology advisor in the school. He is also an active advocate of supporting teachers through mentorship and reflection about practice. Both professionals have completed Masters theses on the topic and were enthusiastic about the kind of work I was developing for this study. These shared interests intersected when they told me about an idea they had been mulling over for some time: creating a learning community.

The school is part of a group of four schools run by a private non-profit foundation. The schools are independently administered, but all share common values, which in some way is an invitation to create more instances of professional collaboration. The support for starting the community came for these teachers in two forms. Institutionally, they were supported by their school's leaders and by the foundation's team that coordinated academic work for all schools under their administration. Practically, they suggested that I could help them in thinking about how to organize and start the community, using the ideas from my study with the EOD network. I embraced the idea and we agreed on collaborating for the creation of an *In-school community* (the name I have given to the group in this study) of elementary teachers focused on reflecting about teaching practice. They were interested in using the wiki tool previously developed to support activity around reflecting on teaching practice.

The coordinators in this community had the goal of beginning by gathering only some teachers and inviting new teachers to join the group over time. Ultimately, their plan was to open community participation to include members from the different schools under the same foundation administration. From previous experience in organizing activities in the school, they knew that it was important to begin with a group of people with solid motivation who could eventually "invite" others through their experience. As such, they invited the teachers with highest participation in the school's activities and who represented different grades and disciplinary focuses. The coordinators' knowledge about the school helped in establishing group goals and norms, as well as the best way to begin a new project with invited teachers given their knowledge of pedagogical reflection and the particularities of their context. This understanding of their context constituted a



signature feature of the problem negotiation with this network consistent with the idea that knowledge is embedded in social context and knowing the culture of that context is central for using that knowledge (Brown et al., 1989a). If this community and I were to begin a collaboration, the knowledge of the context and its culture brought by the coordinators would be crucial for understanding how to situate our work around the tool to support teachers' conversations about practice.

### *5.1.2 Implementing the intervention with the experience of the previous implementation*

In the complex process of implementing the project with the EOD network, I learned things about how to proceed with this new implementation. On the one hand, the process of negotiating problems of practice as a focus during the intervention would not have been possible without the previous experience. The iterative nature of DBR is highlighted here as a way to improve and refine ideas (Cobb et al., 2013) and, in this case, of how to support teachers in sharing their teaching practice and learning from those interactions. On the other hand, the wiki tool was used by a number of teachers who provided insights about how to improve the interface, the organization and content of the wiki tool, and how to make the process of collaboration more effective.

Different factors involved in the process of negotiating problems of practice with the EOD network helped with doing the same in the second implementation. Table 11 presents a summary of the factors with details about how they helped implementation within the In-school community.

Factors in problem negotiation with EOD network	How factors illuminated implementation with In-school community
<ul style="list-style-type: none"> <li>• <b>Communication:</b> Efforts to secure understanding of the project goals and activity by all participants in the EOD network were difficult due to many participants being new to the network and insufficient means to connect with them outside of meetings. Conditions for communication during implementation and especially during problem negotiation are critical to achieve resonance, communicating problems across the worlds of practice and research (Penuel et al., 2013).</li> </ul>	<ul style="list-style-type: none"> <li>• Maintaining close communication with coordinators and defining means to secure understanding of project goals by participants (e.g. written communication between researcher and participants should pass by coordinators' review to ensure that language and ideas are coherent with participants' context).</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Role of coordinator:</b> Clarifying roles and the authority of those involved can help in facing challenges during implementation (Penuel et al., 2013). The strong authority of the EOD network coordinator may have affected members' engagement, making them appear more involved and convinced of the goals and the problems to be addressed in conversations about practice than they might actually have been.</li> </ul>	<ul style="list-style-type: none"> <li>• Discussing with coordinators the participation of members in decisions about what problems of practice can be included in discussions and how the tool should support that exchange.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Time for negotiation:</b> The only time available for involving teachers in discussions to negotiate problems of practice was during the face-to-face meetings. This was insufficient and in practical terms meant that much of the negotiation was done with the coordinator in times she provided outside the meetings. In some cases, she did not have better means for communicating with members than the ones I had.</li> </ul>	<ul style="list-style-type: none"> <li>• Look for agreeing on enough time to discuss the goals and norms of the community with teachers, making sure it was not rushed and everyone felt welcome to participate and contribute with their perspective.</li> </ul>

**Table 11:** EOD network problem negotiation factors illuminating new implementation.

One of the key elements in conducting DBIR is the commitment to iterative and collaborative design and learning from that process potentially to the point of developing theory about learning (Penuel et al., 2011). Consideration of the factors presented in Table 11 led to an implementation that used knowledge gained in a previous iteration of similar work with a different group of teachers. The idea was not to simply generalize from one case to the other, but to use the acquired knowledge to identify potential similar

issues in the negotiation process and to be ready to address them in collaboration with the members of the second group. Likewise, the suggestions and comments from EOD network members about the wiki were considered in setting up the tool for the second network. Knowledge about process and the tool that emerged from working with the first network was used in implementing the project with the second network. The main features that emerged as a result of their suggestions, as well as how those suggestions were influenced the design of the tool for the In-school community, are summarized in Table 12.

Wiki features suggested by EOD network members	How features illuminated design of the tool for In-school community
<ul style="list-style-type: none"> <li>• <b>Purposeful customization:</b> Possibility to modify the wiki by adding sections, new pages, and organization features to meet network needs such as sharing details of periodic meetings, posting comments to materials, and resources that could be of interest to members.</li> </ul>	<ul style="list-style-type: none"> <li>• I was very explicit about the modifiability of the design and sections in the wiki, only suggesting to keep the “artifacts of practice” section as an opportunity to share and reflect on examples of their practice (Ball &amp; Cohen, 1999; Borko, 2004).</li> <li>• Respecting the community’s needs and the context where they are situated (Brown et al., 1989b), I offered support to create new sections that would represent those goals and needs.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Notifications:</b> Not knowing who has contributed was a big issue for the network, affecting the level of interaction that each post produced and the feeling of engagement of those posting and commenting in the tool. Therefore, at different points, this emerged as a strong need for keeping track of wiki activity and being able to respond.</li> </ul>	<ul style="list-style-type: none"> <li>• I showed the coordinators at the beginning of the intervention how to set up notifications and shared with them documents with directions on how to do it. In addition, I explained to the community the importance of this feature for keeping track of what was happening in the wiki and encouraged them to set up their own notifications based on how often they wanted to receive them.</li> </ul>
<ul style="list-style-type: none"> <li>• <b>More engaging interface:</b> Although this is a subjective feature, several network members mentioned the impact that the interface had on their engagement. They thought it was too simple and that color patterns and lack of images affected their interest in visiting the tool.</li> </ul>	<ul style="list-style-type: none"> <li>• Before launching the wiki, the coordinators and I navigated the tool and discussed the design, adding colors and more pictures.</li> </ul>

**Table 12:** EOD network discussion of wiki features illuminating new implementation.

Some of the EOD suggestions about the tool were difficult to address in the new implementation because of limitations of the system used to design and host the wiki (Wikispaces.org). Despite the overall flexibility of this tool, including the ability to change layout, color patterns, add pages at will, and customize content, the system relies on users having the time and technological savvy to make changes. Also, some ideas proposed by participants, such as having in-context information about pages when hovering over a link, were not available features. The coordinators were interested primarily in how ideas were communicated, the language used, and the overall clarity of the texts rather than in interface and look and feel features during the pre-design stage of the wiki. The coordinators' role allowed for crossing the boundaries between practice and research worlds, contributing to the negotiation of specific ideas in the co-design of the tool (Penuel et al., 2013). Although not basis enough for a comprehensive redesign of the tool, the implementation experience with EOD network provided important insights about the form and content of the wiki that helped direct design of the intervention with In-school community.

## **5.2 In-school community problem negotiation**

### *5.2.1 Teacher community as a teacher-led endeavor*

The In-school community is a teacher-led endeavor that began among colleagues who shared ideas about how to support teachers in learning about their practice. The coordinators of this community, Ricardo and Sofia, both work in the school and hold positions that are different from classroom level teachers, one a technology advisor and

learning technology teacher and the other as a psychologist. They are both connected to teachers' work, challenges, and needs, as they are in direct contact and work with teachers in their areas of expertise. This deep knowledge about the teachers and the context in which they are situated seemed to provide fertile ground in which to create a teacher community that was respectful of its contextual culture (Lave, 1991). They also built on their experience developing a project the previous year that consisted of mentoring teachers from a rural school in a remote region of southern Chile. For this project, the two coordinators assessed interest in the mentoring program among teachers in their school and initiated contact with the rural school, which Sofia has known for some time. The group began a period of distance communication via email that consisted of both parties exchanging an experience teaching and commenting on each other's work, providing suggestions for how to address problems, and following up on the solutions implemented. After that period the group traveled to the rural school to discuss the project and share results of the mentorship.

The mentorship experience was used for Ricardo's Master thesis. Therefore, the project had a research background and the space in which to consider its implications. From that cumulated knowledge, he and Sofia thought about ways to expand the mentorship project, realizing that a more collaborative and horizontal design could be more engaging for teachers working in the schools under the same foundation (Badilla Quintana & Parra Zambrano, 2014). They had been talking about this idea and planning how to present it to school leaders, and they mentioned it to me on my first visit to the school (about six months before they engaged in the Let's Talk about Teaching project).

In the months after that meeting, they continued to work with the idea and shared with me some milestones such as a presentation of the project to the school's principal.

Ricardo and Sofia took an interesting approach regarding the role of teachers in the project. In concordance with the definition of communities of practice (Wenger, 1998), the coordinators conceptualized the community as a project they were all building together. Sharing a common goal with the project was understood at both the conceptual and practical level. They refer to the project as a shared enterprise with teachers, in which everyone had a voice in the goals, motivation to participate, and could influence the outcome of the enterprise. They saw themselves as facilitators for what the community could become and looked for support from school leaders for what they knew the teachers would need such as time to meet and work together. This knowledge and their professional, and in some cases, personal relationships with the teachers helped them in conceptualizing a project that could provide their colleagues with the experience of a learning community.

### *5.2.2 Members background practice and roles*

Teachers in this community are all elementary teachers working on one 1-4 level in the same private school. Private schools in Chile are privately administered and funded by parents' tuition payments. They are required to comply with the national curriculum and participate in the countrywide standardized assessments mandated by the central government (SIMCE Test). The school attracts middle-high income students from a populated city in the south of Chile. As in most schools in the country, teachers are paid by teaching hours (i.e., time teaching in the classroom), but they might receive some

bonuses and incentives based on performance and adherence to school values and activities.

A survey similar to the one used with the EOD network was used to gather basic information about In-school network teachers. They were surveyed about characteristics of their teaching practice, use of teaching resources, and teaching experience. According to the survey data (See Table 13), in addition to teaching at the school, three out of seven members work at another place – one in another school and two in a university. Although this is not common for private school teachers, it is becoming more usual for teachers and other education-related professionals that work in schools to also work in teacher education programs at local institutions as an extension of their work in schools.

Teachers in this community have an average of nine years of experience teaching. The least experienced teacher has five years working in the field and the most experienced has 21 years. The last degree acquired by all the classroom teachers in the group is Teaching Certificate for teaching at elementary levels. In Chile, public and private universities and vocational schools can provide teaching certificates, which are issued as part of satisfactory completion of the programs. Special certification is not requested by any country or regional institution, as is the case with the state teaching certification required in the United States and other countries. Therefore, teachers who have satisfactorily completed their elementary teacher education programs are automatically certified to teach in the country's schools in all levels from one to eight in most of the curriculum subjects. In the school in which this community emerged, the teachers specialize in one curriculum subject and are in charge of teaching that subject to two groups, including the group for which they are head teachers. In the community, both

coordinators work in the elementary level, one of them teaching different grades as the learning technology teacher and the other supporting teachers and students as counselor (See participants data details in Table 14).

<b>Characteristic</b>	<b>Count</b>
<i>Last degree</i>	
Teaching Certificate	5
Diploma	0
Master	2
Doctorate	0
<i>Years of Experience</i>	
Min	1
Max	21
Median	7
Average	9
<i>Levels Taught</i>	
One grade	0
Two grades	3
More than two grades	3
Supports teachers but does not teach	1

**Table 13:** In-school community members' teaching experience.



Participant	School	Years exp.	Hrs. taught School 1	Hrs. taught School 2	Levels/ disciplines taught <sup>†</sup>	# Students <sup>*</sup>	Other role(s)
Valentina	Private	21	42	-	3 <sup>rd</sup> -4 <sup>th</sup> Math	35	
Sandra	Private	4	42	-	2 <sup>nd</sup> all disciplines	31	
Jasmin	Private	7	43	-	3 <sup>rd</sup> -4 <sup>th</sup> Spanish	33	
Laura	Private	6	45	-	1 <sup>st</sup> -4 <sup>th</sup> Special Ed.	-	
Ricardo	Private	8	44	22	1 <sup>st</sup> -4 <sup>th</sup> Technology	33	Teacher Ed.
Carlos	Private	6	38	38	3 <sup>rd</sup> -4 <sup>th</sup> Science	34	Science teacher in a Subsidized School.
Sofia	Private	8	33	8	1 <sup>st</sup> -4 <sup>th</sup> Psyc counseling	-	Teacher Ed.

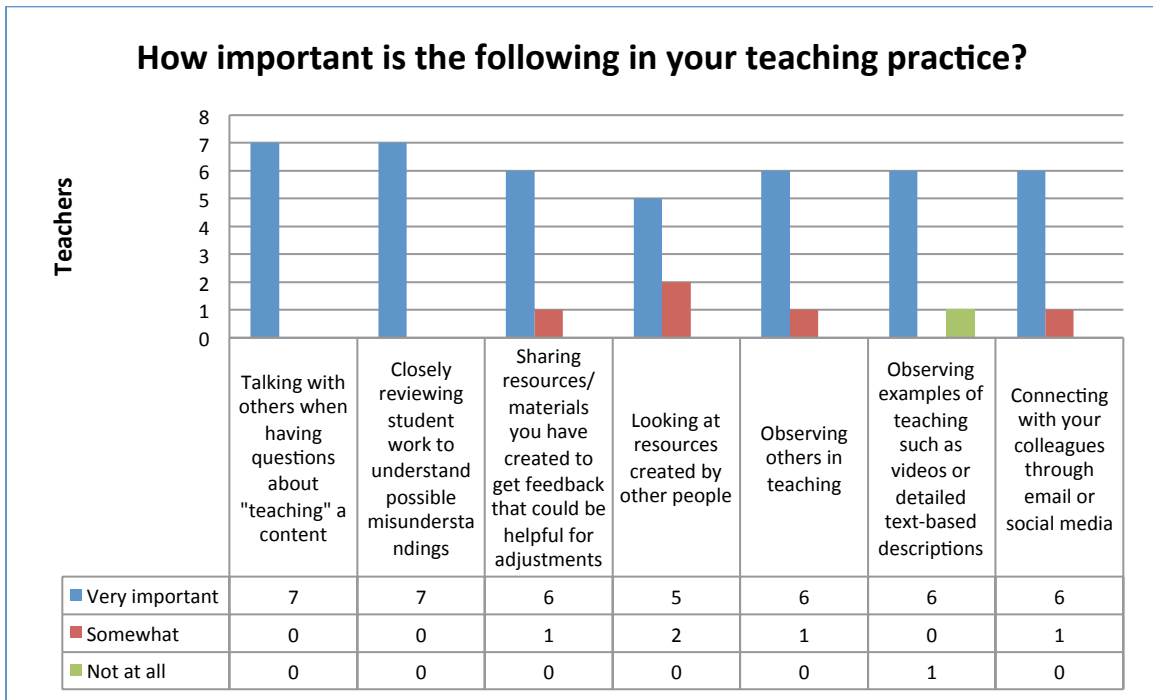
**Table 14:** In-school community members' data summary.

Teachers in the In-school community perceive their practice as connected to others, as expressed in the features of their practice listed in Figure 9. They value collaborative interaction with colleagues as part of their teaching practice and perceive the opportunity to talk with others to clarify issues about content as very important. They think it is very important and somewhat important to share resources they have created to obtain peer feedback, review resources that others have created, connect with colleagues through social media and email, and observe other teachers teaching. Also very important for the majority of these teachers is the practice of observing examples of teaching such as videos and detailed descriptions. All members in this community perceive it as very important to review student work very closely to identify and understand possible

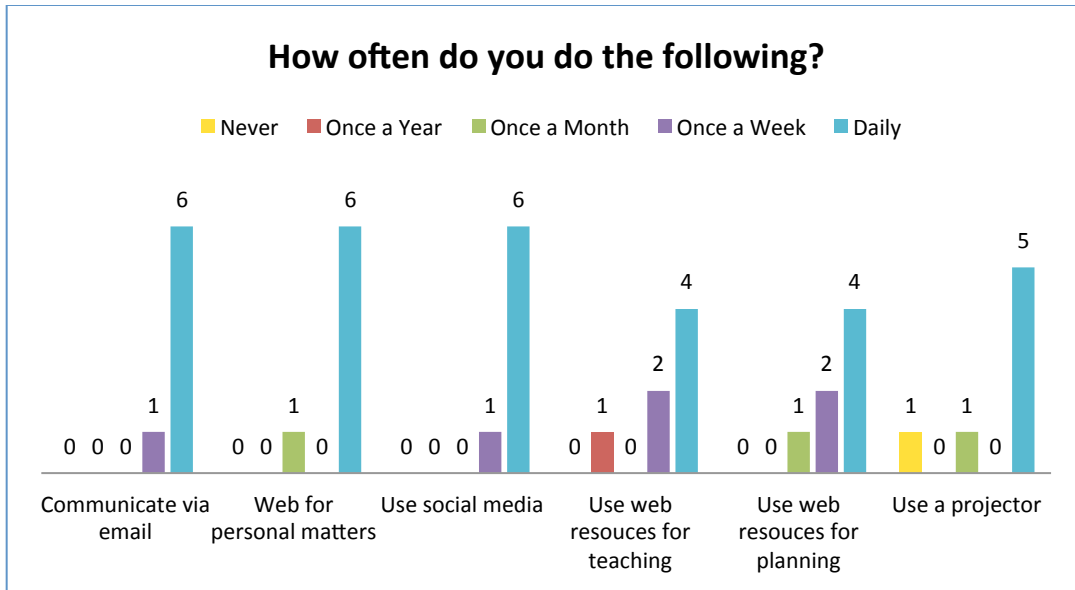
<sup>†</sup> Valentina, Sandra, Jasmin and Carlos are all Elementary teachers. In one class they are the master teacher, teaching one discipline in that class and in another class and level. Sandra only teaches in 2<sup>nd</sup> Grade where she is the master teacher.

<sup>\*</sup> This is the number of students in a typical class, as reported by participants.

misunderstandings students might have. Overall, the perceptions of this group of teachers regarding their interaction with peers are very positive and hint at the relevance they might find in a connected practice in their workplace.



**Figure 9:** Teaching practice features.



**Figure 10:** Use of technology resources.

As seen in Figure 9, the relevance of technology to the activities of this group of professionals is represented by the importance they give to communicating with colleagues through digital means. Technology presence in their everyday life and professional work can be observed in Figure 10. Teachers in the In-school community report daily use of email communication, use of web for personal matters, and use of social media (six out of seven). The use of web resources for planning and teaching seems less frequent, but it is still a practice that is part of daily professional activity for more than half of the teachers. The use of a projector for teaching is a pervasive practice in Chilean classrooms (Hinostroza, Labbé, & Claro, 2005), a fact that is consistent with the number of teachers in this community who report daily use of that technology (five out of seven).

The In-school community was just emerging as a group at the time of the study, and their practice as a community was still under definition. The coordinators were the

two professionals interested in starting the community, and their status in the school made it possible to negotiate support from the authorities. Sofia, as the school psychologist and head of the elementary psychology department, had view of the classrooms as a whole and the students in particular, a close professional relationship with both teachers and academic leaders, and the respect of the school head. Sofia's position and expertise facilitated her communication with school leaders and helped secure support for the emerging community. Ricardo, in addition to his role as the learning technology teacher, occasionally covered the position of elementary level academic coordinator. His role of academic coordinator gave him, like Sofia, a unique position in the school and some closeness with school leaders. For these reasons, Sofia and Ricardo were the natural leaders of the group, working to coordinate members through the implementation activities and getting support for teachers to participate. Their roles and awareness about how they affected the community's life is coincident with Penuel et al.'s (2013) suggestion that identifying roles and the authority figures they represent can be important in negotiating problems when needs arise and conflicts are to be solved.

### **5.3 Implementing supports for conversations within an emergent community**

#### *5.3.1 Overview of intervention design*

The intervention with the In-school community was part of this group's initial development as a community. Including the intervention at this early stage was part of the community's plan for supporting communication and collaboration among members.

The intervention design followed a similar path as the one implemented with the EOD network in terms of purpose and micro-cycles of design of the tool for scaffolding conversations about teaching practice within the network. For implementing these supports, the community was offered the wiki tool used by the EOD network, including some of the changes proposed by EOD members during the implementation process. As described in the Methods chapter, the tool design was open to revisions and modifications that matched the needs and interests of the new group. This was consistent with the perspective I adhere to in this study about the importance of respecting participants' context and the ways that context might influence their use of tools and knowledge (Brown et al., 1989b). To ensure that participants were considered in the implementation design, I kept close communication with coordinators and encouraged regular meetings as part of the design phase to provide opportunity for discussion of the tool features and collect suggestions for potential changes.

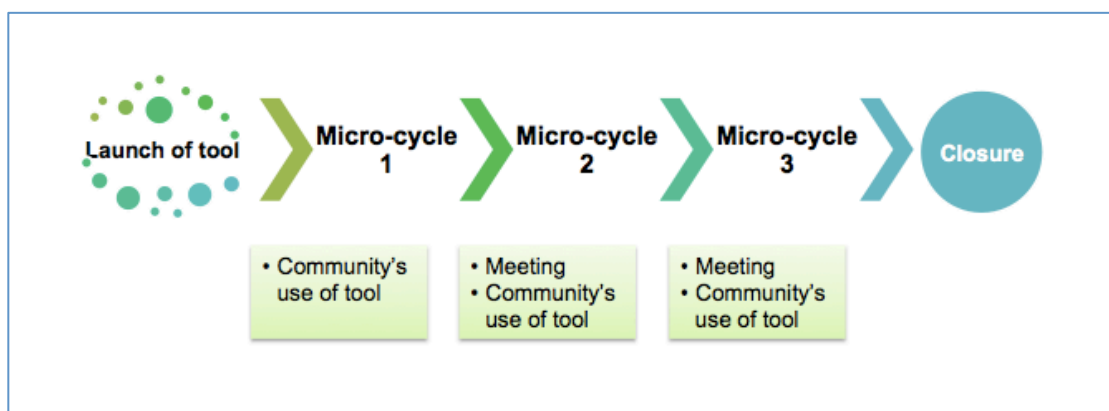
As with the EOD network, this community's members were expected to regularly visit the tool and share artifacts of practice and anything else they wanted within the wiki. Members were allowed to make changes to the wiki independently or with support from the coordinators and researcher. Although these were not equal options – the coordinators were based in the same school and were accessible to the teachers within the same building, while my only way to communicate with them was through email or online conferencing – they provided alternative ways to get support.

### 5.3.2 *DBR micro-cycles*

Iteration with participants to design and redesign the tool based on community members' needs and interests was a key aspect of the implementation with this group

(Fishman, Penuel, Allen, Cheng, et al., 2013). Consequently, after launching the tool's initial design, the implementation included micro-cycles of DBR that provided some time for use of the tool, an instance of analysis, and the possibility of redesign according to the analysis and participants' suggestions. The intention was not to modify the tool in its entirety, but to adjust aspects that might not have fit well with their needs, opening space for the addition of new pages and sections according to those needs. For instance, the community might decide to add a section to share teaching resources in their different disciplinary areas.

DBR micro-cycles implemented with the In-school community were short, because of the timing of the intervention. As explained elsewhere, this community entered the project a couple of months into the second semester, leaving a short time before the end of the academic year for the implementation. This situation constrained the available time and demanded a shorter version of the micro-cycles, comprising a total of three periods (see Figure 11) and four meetings: one for the launching of the tool, one after the first micro-cycle, one after the second micro-cycle, and a final meeting to give the implementation closure.



**Figure 11:** DBR Micro-cycles with In-school community.

During the micro-cycles, teachers were invited to use the wiki; logging in, exploring, sharing artifacts of practice, engaging other members in conversations to unpack the features of those artifacts, and collaboratively developing an understanding about the problems of practice involved. Sharing artifacts was the main activity suggested to the network to begin conversation through the discussion forum. These conversations were expected to continue in face-to-face meetings, acting as starters for discussing the main points that arose in the wiki forums.

### *5.3.3 Implementing the intervention: challenges and expectations*

The beginning of the implementation coincided with the beginning of this community's launch. There was only one gathering prior to the implementation's first meeting, which meant that teachers were just starting to form an idea of what the community could be. For the coordinators, the best way to approach this start was by considering the first period of the community's life a "pilot experience." This decision was influenced by two facts: the time of the year when the community started and the goal of eventually expanding the community to include members from other schools under the same foundation.

The first fact is an important one. The Chilean academic year goes from March to December, with one two-week vacation period in July and several holidays throughout the year. The summer months of January and February are vacation time for students and usually also for teachers, with some exceptions at the beginning and end of the period that are dedicated to teacher professional development and planning for the academic year. The best time to begin a project is at the beginning of the academic year in March

or at the beginning of the second semester in August. This intervention started in November, leaving a little less than two months to complete the activities. Even though it meant a short intervention, the coordinators preferred to begin right away and consider it a trial period during which they could test ideas and develop a better understanding of the possibilities that exist for helping the community to thrive.

Including more teachers by expanding the community to other schools within the foundation was an important part of Ricardo and Sofia's initial idea. The integration of teachers working in schools sharing the same spirituality and values could provide opportunities for unprecedented collaboration and sharing. This endeavor had coordination implications that required time and clarity of goals and activities. Inviting teachers from other schools meant that the coordinators had to meet with the school head, the foundation's academic coordinator, and the board of heads from all the schools to present the project and secure their support. Taking these logistics into consideration, developing a trial or pilot experience with teachers from their school only was seen as an opportunity to adjust the project, making it more solid before expanding it to include teachers from other schools.

### ***Participation in the intervention***

The first meeting for the implementation took place after coordinators had met with invited teachers, and they all explicitly agreed to participate. In this meeting, I remotely introduced the project to participant teachers using an online conferencing system, because I was based in the United States at that time. This kind of communication can be a challenge, despite the amount of preparation and system testing



that takes place. Fortunately, Ricardo, who is a specialist in learning technology, supported the technical side of the communication. He supported the online conferencing technology, facilitated teachers' understanding of the wiki as a tool designed to talk about teaching, and supported teachers' use of the tool. The coordinators and I had earlier decided to hold the meeting in the school computer room so that teachers would be able to create Wikispaces accounts and explore the initial design of the wiki in the context of the meeting. The main reason was to provide conditions for teachers to work together and be supported by their peers in solving any potential issues on the spot. This decision allowed teachers to interact with the tool as a group, compare their screens, ask questions of one another, and collaborate in answering them. There was time for free navigation of the tool and for discussing how they wanted to use it. They decided to work on a topic for the *artifacts of practice* and asked someone to volunteer by sharing one artifact. This way they avoided losing time and were assured that they would be talking about something that was of interest to everyone.

Participation during the three micro-cycles involved wiki use to discuss artifacts of practice posted by peers or other posts through the forum feature and suggestions for changes to the wiki for making the tool better suited to the emergent community. One interesting aspect of this community is that, despite its novelty and lack of experience as a community, teachers have known each other for some time and work under similar conditions in the same school. This familiarity allowed members to connect with their peers more easily, empathize with their possible needs, and attend to the community's contextual features (Lave, 1991; Lave & Wenger, 1991). To illustrate this, when I shared the first version of the wiki with the coordinators, Sofia replied with a detailed email

containing her critical view of the design and content of the wiki. She noted that the language of some sections, such as the one explaining the artifacts of practice, seemed too theoretical and far from teachers' experiences. She suggested simplifying the language, offering a balanced combination of text and images for explaining the concept, and adding some examples. These suggestions were based on her knowledge of the teachers participating in the community and the barriers they might face in connecting with the wiki content and format such as the amount of time they would have to spending in the tool. This was a view that situated the design of this community's work and that was grounded in the coordinator's knowledge of the culture of the school (Brown et al., 1989b).

Section within wiki	Type of contribution	Number of contributions	Number of individual contributors
Artifacts of practice	Commented on forum	9	7
Artifact of practice	Shared and artifact	3	3
Pages	Created a page in the wiki	12	4
Wall	General comments in homepage wall	20	7

**Table 15:** In-school network participation in the wiki.

Teachers' use of the wiki involved creating and discussing artifacts of practice, commenting on the forums, and creating new pages and sections. A summary of contributions to the wiki is presented in Table 15. As agreed by the community in the first meeting, the first artifact shared focused on the topic of moments in the lesson; specifically, how teachers create a scenario for learning at the beginning of a lesson. In

this artifact (see Figure 12), one teacher who has been part of a research project at a local university shared a list of aspects that he thought most lessons should include to prepare students for learning. Since the list was about a science lesson, the teacher asked the community to contribute with other aspects that could be important to consider in different lessons. Participation in the conversation around this artifact was not extensive, but motivated contributions from other disciplines such as one teacher commenting, “I think is important to take care of the classroom environment (...) necessary elements to give the lesson a good start... once this is ready, it is possible to begin with a question or a challenge, I use challenges a lot in mathematics... I draw a bulb on the whiteboard and they know what is coming” (Valentina, In-school community, Wiki comment). The artifact also created conversations about student disposition to participate in the lesson, focusing on questions and norms that can be recalled at the beginning of a lesson to make sure all students are ready for learning.

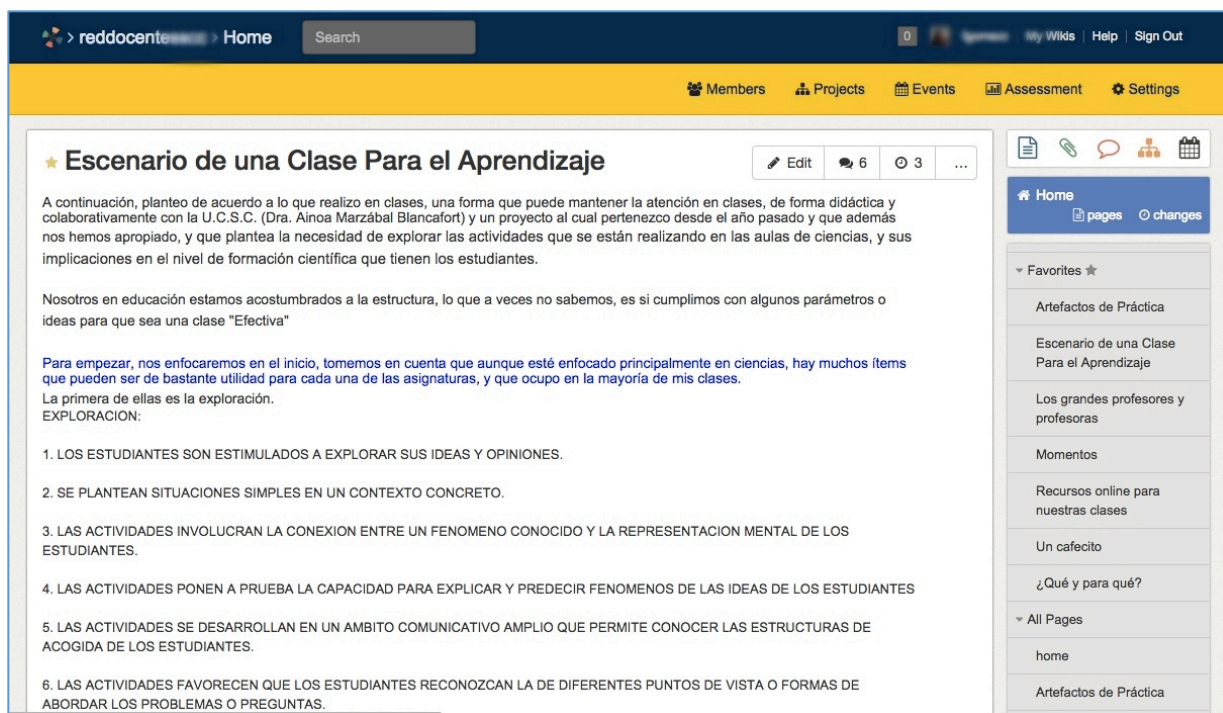


Figure 12: Example of artifact of practice.

Implementation of the intervention was not exempted from difficulties. These difficulties mostly involved teachers' time to log in to the wiki and participate in the conversation there and in having meetings during school time. By the second meeting (end of November), teachers were experiencing the stress associated with the end of the year. They had many student assessments to complete, reports to write, final presentations to prepare, parent conferences to lead, and other responsibilities that made it difficult for them to dedicate time to the community. For this second meeting, the coordinators and I planned to discuss with the teachers the things they liked the most and the things they would change in the wiki. Teachers talked about their time constraints and discussed relevant aspects of the wiki. For instance, they shared an interest in talking about students' behaviors and how to support them at the time of the year that the implementation took place. In reference to the few posts that had been shared so far, one

of the teachers commented, “It is a very good tool but it will be even better when we can share more resources” (Sandra, In-school community, Meeting 2 transcript). They worried about not having enough time to participate and wondered if the school could give them more. Sofia, one of the coordinators, said that she would discuss with the academic dean the possibility of allocating time for teachers to dedicate to the community. There was frustration among teachers about the lack of time available to them for participation as compared to their willingness to participate. Sofia told them not to worry. She said,

Don’t feel frustrated about the time, because undoubtedly it’s a variable that has become important and we need to take into consideration, because the idea with the wiki is not about pressure. As Carlos said, and I would keep that idea in mind because is very important, there is motivation from everyone such that in one moment, even as part of relaxing or driven by curiousness, you can login, read, give your opinion. I would say that it should be the contrary; to the extent that I feel more this sort of pressure to do something in the wiki we could risk this intrinsic motivation we have now (Sofia, In-school community coordinator, Meeting transcript).

Teachers appreciated her comment and discussed how to make sure to have more artifacts posted for discussion. Having varied artifacts that represented different interests seemed important, considering the variety of interests of participants in the wiki. One teacher proposed a new section in the wiki to share “moments” through pictures of their work with students in the school or a class trip or any activity that represents an everyday

experience in teaching as a way to capture their varied interests as a group. They agreed to create that section and began sharing other things that were not necessarily artifacts of practice, but that were interesting and relevant to their discussion of practice.

The third meeting was scheduled for two weeks after the second, providing time in between for more sharing and interaction in the wiki. Teachers had decided to share more artifacts after the second meeting, and I supported them by sending an email reminder. Sofia also looked for more support from the school, given the time of the year, so they could have more time within the school day to interact in the wiki. The time for wiki activity was granted, as well as time for meeting; however, our third meeting was cancelled, because of a time conflict with another activity that the academic dean defined as a priority. The coordinators rescheduled the meeting for two weeks later, not without some frustration because of the situation; they were trying to protect the teachers from the heavy load they were experiencing, and at the same time trying to sustain the project.

This situation sent a contradictory message about the school's support and tied participation to that support. On the one hand, the teachers were given time to dedicate to the community activity, and on the other, their meeting was cancelled. Finally, the meeting was rescheduled for the end of the semester. The coordinators led a conversation with the teachers to gather their perceptions about a period that they recognized as "not free of contingencies," but still important. This meeting was the final meeting, providing closure for the experience. Overall, teachers valued the opportunity to try the tool and imagined how it would be when they were connected to teachers in other schools. The main topics they brought to this last meeting had to do with: a) their desire for opportunity to exchange and to give/receive feedback from peers outside the school, b)

the wiki format and technology issues, c) their disposition to participate and the conditions necessary for that participation, and d) the time available to get more involved. All agreed that gathering around a tool for the sharing of teaching practice is valuable and that could be even more so if they opened to teachers in other schools. One teacher commented on the idea of giving and receiving feedback. He said, “This is going to be a huge feedback instance, and the good part is that it’s going to be among professionals who have the same imprint, the same profile, under the same educational project” (Carlos, In-school community, Meeting 3 transcript). From his perspective, there was value in sharing with teachers outside the school who have something in common with them, with whom they share something more than the profession. Another teacher seconded Carlos, saying,

That’s going to be an important addition, because now we have been talking among us, and we generally talk among us every day or are in communication the every day, and it is going to be different because it is going to be a major commitment with other people that we don’t know, that we don’t talk to every day, but that we are going to connect only through the wiki (Laura, In-school community, Meeting 3 transcript).

Laura’s perception about reasons for engaging with and committing to the wiki make an interesting connection with the views that these teachers have about disposition to participate in community activities in a digital environment. Interacting with people they do not know in person seems to compel her to commit, since the wiki is the only means they will theoretically have to connect with them (Renninger & Shumar, 2004).

The same teacher mentioned that it was difficult for her to get more involved, because she is not very technologically connected. She said, “I have to recognize that I didn’t enter the wiki many times, because I don’t have the habit so much, I mean I check my email at the most and that’s it” (Laura, In-school community, Meeting 3 transcript). Feeling not technology apt or not having a particular orientation towards technology can certainly be a barrier when invited to participate in an online system that requires consistent and periodic interaction in a digital environment. However, there were other issues with the system interface and structure that made these teachers feel that the system was not engaging and clear enough to keep them interested. For instance, teachers mentioned that it was difficult for them to understand the structure of the wiki and that its design and colors were too simple and not appealing.

Another wiki feature that could have facilitated participation, as noted by one of the teachers, was the notification system. She said, “I sometimes would get to my email and notifications would go unnoticed. (...) I think it should be like in Facebook, I don’t know that you can get notifications when people comment so we can be attentive because we have our cellphones always available” (Sandra, In-school community, Meeting 3 transcript). As users of other social networking systems such as Facebook, these teachers expected to be notified of activity in the wiki in a more familiar way. Facebook is an important referent, if not the only one, when talking about online social participation, and the teachers mentioned that they could run a similar activity as the one proposed by the wiki using a page in that system. This comment about the interface raises the question of the extent that the design of the wiki site responded to the needs of the local context of use (Naismith et al., 2011).



Finally, the main difficulty for these teachers impeding involvement and active participation in the wiki was time availability. This is hardly a problem that only these teachers face, as it becomes an issue in any professional development activity, especially one that involves creating web-based resources (Barab, MaKinster, et al., 2004). These teachers have scarce time within their school day to get online and participate in professional activities like the community. All of the teachers participating in the meeting expressed regret at not having been able to participate more because of lack of time. They acknowledged though, even considering other issues mentioned, that this was their responsibility. One teacher said, “The truth is that I have to recognize my lack of commitment, because it is about tracking, about structuring your time better. (...) It is about responsibility, and be more persistent, and to be more fully into the wiki” (Carlos, In-school community, Meeting 3 transcript).

### ***Grounding decisions: negotiation of problems***

Before starting the implementation and from the first conversations with the In-school community coordinators, they were explicit about the importance of involving teachers in decisions about the community’s norms. Their definition of norms referred to goals (e.g. sharing their practice with colleagues from the school and other schools), ways of functioning (e.g. structure of meetings, timeline), engagement features (e.g. motivation for participation), and use of the wiki-tool. For instance, they shared their plans for the first meeting with teachers, in which they included a desire to “discuss the norms of participation, know their main questions [regarding the project] as anticipation of the kinds of questions teachers from other schools might have, and encourage them to

motivate their peers” (Sofia, In-school community coordinator, email communication).

Teachers were invited to participate in the meeting and asked if they wanted to be part of the community. If interested, they were invited to participate in thinking about the norms for that participation as a basic consideration of engaging them in the project.

In the meeting in which I introduced the wiki, community members engaged in defining the type of problems they wanted to discuss using the idea of the *artifact of practice*. From their understanding, simply asking people to post something might result in a delay in starting the conversation, so they proposed that they decide on a topic and begin sharing artifacts on that topic right away. Teachers grasped the term “artifact of practice” quickly. It seemed to make sense to them as a way to reify the concept of teaching practice on a concrete level that they could represent in the system and communicate to others. From the perspective of the relationship I was beginning to form with these practitioners, this was a positive step toward developing hybrid language among us (Penuel et al., 2013). The teachers started talking about *artifacts* and discussing the topic on which to focus the first exchange. This was not an easy task, because the idea of teaching practice is broad and because some of them were elementary teachers with multiple disciplinary interests and others had a disciplinary specialization such as science or English as a foreign language. Although not easy to define, the teachers’ overall perception that having a common topic for the artifacts would help them make progress and start using the wiki led to their decision to share about the different moments in a lesson.

### ***Follow up***

The follow up meeting with the In-school community was conducted about six months after the last meeting. I met with two teachers, Carlos and Valentina, who participated in the implementation. The coordinators decided to not participate, thinking that their presence might affect teachers' confidence and freedom to express their perceptions and ideas. We met with both teachers in the school and began by talking about experiences of collaboration with other teachers for improving teaching practice that they had had in the past. These teachers had different experiences of collaboration. Valentina had never before participated in a project like the one we implemented, whereas Carlos had been part of a university project for about three years to develop critical thinking in elementary students. However, Valentina had been studying for a Masters in Education that provided different opportunities for collaboration. She mentions how important this sharing has been for her, saying, "I think that is very good to be able to share experiences, see that other person does the same as you but it doesn't work the same when you do it, or share strategies that I didn't know, or activities, a different project. That's good" (Valentina, In-school community, Follow up meeting). In response to Valentina, Carlos shared about the project of which he has been part, highlighting the collaboration with peers involved. In that project, he shared his classes with other teachers in the project and received feedback from them, which he describes as "constructive criticism, although sometimes they would go beyond the line, but there was mediation" (Carlos, In-school community, Follow up meeting).

They identified the creation of a teacher network as the main goal of the project implemented. This network would provide the possibility "of sharing a experience, a

resource, or strategy. Sharing one good lesson, or sharing something to relief some problem” (Valentina, In-school community, Follow up meeting). Although Carlos agreed with Valentina about the main goal of the project, he viewed sharing resources and materials as less important than going beyond what they know about their teaching practices. He said, “I think it needs to be more, even deeper. You think you know how far you are taking things to, how you do things, but in creating this group we should be more harmonic, coordinated in the sense of knowing more about what we are doing” (Carlos, In-school community, Follow up meeting). The idea of “going deeper” gets at the level of sharing that a teacher community might aim to in order to recognize what they know and what they do not know about their job (Lieberman & Wood, 2002; Little & McLaughlin, 1993).

This meeting with teachers to look at the implementation in perspective highlighted an important aspect regarding expectations about the implementation: teachers’ motivation. On the one hand, there was the promise in the invitation of the opportunity to connect with teachers in other schools that was not realized during the implementation of the project. Teachers understood this was a pilot for the actual community, but still they were looking forward to sharing practice with teachers they did not know. Valentina’s comment is revealing. She said, “My expectations were not fulfilled 100% because I thought that throughout the project we would get in contact with the other schools [of the same foundation] and would not be just us” (Valentina, In-school community, Follow up meeting). This seemed more important and central for her than was evident during the implementation. On the other hand, Carlos pointed out that participating teachers were invited personally and talked about how that might have

affected their motivation. He said, “That personal invitation might have provoked something in some of us. That maybe we were not that enthusiastic of the idea” (Carlos, In-school community, Follow up meeting). This comment seemed to refer to the nuances of freedom in a job situation in which you are invited to do something that everyone thinks is good and to which you are supposed to agree and get involved, regardless of your actual motivation to do so. The process of recruiting participants for the collaborative endeavor might face dilemmas such as the one Carlos described and can affect problem negotiation if they are not identified and addressed in a timely manner.

Finally, teachers had a clear idea that the problem or issue at hand in the project was something that had to be defined by them. Valentina said,

It was pretty open, in the sense of freedom to let a topic come up among us. I remember once you [talking to Carlos] shared something and you initiated a conversation. So in that sense it was not something imposed. There was not, ‘Ok, in this session we will do this, now you have to do this, you have to develop this topic, no. In that sense is good because it was respectful of things that could emerge, the needs and interests that each of us has (Valentina, In-school community, Follow up meeting).

Carlos agreed with Valentina about the openness of the project and the possibility of freely deciding on which issues to work. He expressed an aspiration to collaborate with colleagues through peer observation and talked about how the community might help by providing insights about what he needs to do differently and on what he can improve. Strategies such as peer observation, sharing of documents of practice (Ball &

Cohen, 1999), protocols for discussing teaching (Curry, 2008), and student work to learn about their thinking and better support their learning (Kazemi & Franke, 2004) are all powerful means by which to open teaching to the collective and receive feedback that would might not be possible to get without such interaction with colleagues.

#### **5.4 Case analysis: negotiating ideas with the In-school community**

The particularities of the implementation with the In-school community are important for understanding the process and for identifying what can be used in future implementation processes. Most important in this analysis is the negotiation of ideas with this community and how they were implemented. Understanding these ideas can illuminate future work around DBIR, particularly in the initial negotiations. The following is the analysis of these ideas.

***Origin of collaboration:*** The idea for collaboration emerged from the school setting and serendipitously met my interests as researcher. In a sense, it was not the classic model of researcher approaching setting to ask for participation, but more like a joining of needs and interests and a concurrence of goals for implementing a project. There was also a good match between what they needed and what I could provide, namely the wiki as tool for communication and collaboration for teachers in the community. The idea of using this tool when teachers in other schools join the community was appealing and influenced the members' decision to work collaboratively with me. Practitioners and researcher shared a goal: Teachers in the community shared the goal of working together and collaborating to advance in their practice and the

researcher supported their joint work as well as learned from them in the process (Penuel et al., 2013; Wenger, 1998).

***Coordinators knowledge of the setting:*** Coordinators' familiarity with the school and teachers reality was an advantage in defining how and with whom to begin the community. This is knowledge that only they were able to contribute and provided valuable feedback for the research and the negotiation of conditions necessarily for teachers to participate. Their understanding of the context situated the project and respected the particularities of the school, the teachers' work and demands they faced, and the goals they had set for the community (Brown et al., 1989b). This knowledge was also an advantage in defining aspects of the form and content of the wiki, including the use of language, extension and characteristics of the texts, use of images, and relevant topics to include and discuss.

***Negotiating access:*** The process for negotiating access to the site provided a different perspective about how to approach a group when the research is conceptualized as collaborative and situated (Coburn et al., 2013). The relevance of contextual features emerges strongly and calls for considering participants' needs, interests, problems, roles, dispositions, and other traits that might not be visible at first contact. Those better prepared to identify and understand these traits are people who are closer to participants. Therefore, partnering with them is critical (Penuel et al., 2013).

***Barriers for participation:*** Job demands are real constraints that teachers face everyday. Teachers in the In-school community perceived that the project was in some ways an obligation that created pressure for them. On different occasions they apologized for not responding as expected and explained that their job demands made difficult for

them to participate more. However, there is more to it than that. As one teacher mentioned, lack of interest in computers and scarce time dedicated for logging in were other reasons not to participate in the wiki at the level expected. This is a technological component that is as influential in participation as teachers perceive. Not feeling technologically savvy can be a barrier to use a tool that needs the user to feel comfortable within the technology environment (Ertmer et al., 2007, 2007).

***Issue of local support:*** The school sent contradictory messages regarding their support of teacher participation in the In-school network. For instance, teachers were told that they would be given time to work on the wiki, which sends a complex message. One implication is that teachers may perceive that they need special time to participate in the wiki, and the other is that the time needs to come from the school time; either way, participation is connected to incentives that the school is providing. Participation in the activities of the community, including the wiki, should happen as a result of teachers' interest and can include incentives, such as recognition for their work or a more concrete reward such as monetary compensation. Providing teachers with time might be a good start, but if they do not feel intrinsically motivated, they still might not participate.

***Some unfulfilled expectations:*** Teachers were told during the negotiation process involved in defining the problems of practice on which to focus and the features of their participation that the community would involve teachers from other schools. They were enthusiastic about the eventual participation of teachers from the other schools within the same educational foundation. Based on their perceptions and opinions, apparently the promise of connecting with teachers at other schools was more important than it seemed during the intervention. In both the last meeting and in the follow up meeting, teachers



mentioned this as an unfulfilled expectation. They were also critical of the wiki design, interface, clarity, and notification system, pointing out that these variables might have contributed to lack of participation.

***Expectations and realized conversations:*** Teachers expected versus actual conversations were consistent. The wiki provided space for the sharing of experiences and resources as they believed was needed during discussions about the implementation. The process of implementation faced many difficulties, mostly of time availability and contradictory information. Perceptions of motivation did not emerge as a strong topic in meetings and interviews, but the lack of wiki activity might be evidence enough that there was mild to low engagement in the work proposed within the tool.

## **Chapter 6**

### **Discussion of Contrasting Cases in Problem Negotiation within Partnerships**

#### **6.1 Problem negotiation within an emergent partnership**

The focus of this study is on the negotiation of problems of practice in researcher-participant collaboration. In particular, this study sought to investigate this negotiation in the context of implementing an intervention to develop a web-based tool to support conversations about teaching practice with teachers in networks. The intervention was implemented with two different groups of teachers – one a network of teachers of English (the EOD network) and the other a group of teachers working together within one school (the In-school community). In my work to support the implementation of a wiki tool with these two communities, I also explored the “problem negotiation” process with each group. This allowed me to consider the implications of the negotiation process for subsequent implementation.

Implementing an innovation in a complex setting like a school requires collaboration among and across different actors and the use of knowledge about the

problems of practice that the innovation is designed to address (Fishman, Penuel, Allen, Cheng, et al., 2013). A key to success in such interventions is developing a shared understanding of problems of practice across participants and researchers (Penuel et al., 2013). Including practitioners in the research process as designers and partners appears to be fundamental if researchers want to make research accessible and understandable to practitioners and to create a collaborative studies that are embraced and implemented by them (Coburn et al., 2013).

Research-practice partnerships (RPPs) are a particular type of relationship between researchers and practitioners inserted in an educational system at the district or school level. Coburn et al. argue that RPPs differ from conventional partnerships in that they “are long term, focus on problems of practice, are committed to mutualism, use intentional strategies to foster partnership, and produce original analyses” (2013, p. 2). The researcher-participant relationship built with the two networks in this study falls short of being a full-fledged RPP as described by Coburn et al. (2013). These were not long-term relationships – they lasted for a year or less – nor were intentional strategies to engage in partnership used that involved different leaders at different levels in the system. However, the cases described in the previous chapters do contain some of the features that characterize research-practitioner partnerships such as the focus on problems of practice and the commitment to jointly build collaborations that benefit both participants and researchers. In this study, I held this form of research-practice relationship as an ideal and focused on how to analyze the cases to understand their particular features as networks in specific contexts.

To analyze these two cases, I turn to the emergent Design-Based Implementation Research (DBIR) literature that highlights the role of negotiation of problems of practice in research that involves collaborating with practitioners. Using these ideas for analyzing these cases provided me with different views or dimensions of their realities that in turn helped me understand the boundaries between which they act and live. It is in using these lenses that I am able to identify the implications of the negotiation of problems of practice in research that actively involves participants. This is one of the stages of working in partnership.

## **6.2 Different dimensions of network reality**

The two cases described in this study represent different approaches to the negotiation of problems that participants wanted to consider for the project's implementation. These different approaches can be understood by looking at the distinctive dimensions of their realities. Grossman, Wineburg, and Woolworth (2001) discuss the formation of teacher communities and the influence of the context in which they are "contained," a term borrowed from Goode's (1957) work. This containment is created by the particular conditions and challenges that teachers face in teaching such as their grade level, subject area, and the students they serve. It also speaks to the boundaries that the profession generates for engaging in teacher professional development activities such as creating communities with other teachers. These boundaries come from the previously mentioned conditions, such as grade level and subject area taught and their students, and involve systemic features that teachers in a school and across different schools may experience as part of the systems in which they

are embedded. Essentially, teachers create and sustain networks within, at least, the boundaries of their schools, the district, and the larger school system, which is built of some features that enable and other features that constrain their work. This is a situation described by different researchers who have engaged in studies about teacher communities in the United States (e.g. Grossman et al., 2001; Lieberman, 2000) and in Chile (e.g. Fuentealba & Galaz, 2008; Galaz, 2011).

Some dimensions emerged in the present studies that are helpful in understanding the different problem negotiation processes in the two cases. The dimensions relate to the authority figures involved and the roles they played in the implementation, the structural configuration that the networks have, and their seniority or the length of time they have been functioning as a group. Analyzing these dimensions allows for the exploration of how the particularities of the cases played a role in conducting the implementation and in particular in negotiating problems of practice with each of the groups. First, in the EOD network the negotiation followed a top-down process in which the relationship with participants was started by a contact with high ranking local authorities at the MoE and continued through the network coordinator until reaching teacher members. This more traditional way of approaching participants and negotiating the problems we wanted to focus on in the implementation contrasts with the In-school community case. The problem negotiation process with this community was bottom-up; access to the teacher community developed in response to their interest in being involved in the implementation proposed by this research study. Teachers expressed this interest in a space for horizontal participation created by the coordinators, although the coordinators had different roles from the teachers in the school.

The EOD network and the In-school community also differ in terms of their structural configurations; the former includes teachers from different schools who meet once a month, while the latter is made up of colleagues who work at the same school. These differing group configurations seem to influence the kind of relationships in which members engage and the boundaries around their actions in the community. For instance, teachers in the EOD network do not conform to the same set of norms in their teaching, because they work in different schools, whereas In-school community teachers work under the same norms and conditions. Teachers in the In-school community are embedded in the same institution, and sharing that space provides a framework for talking about their teaching with common referents. In contrast, the EOD network teachers do not share common institutional referents, but rely on the fact that they all teach the same subject to provide a common framework for talking about teaching. That the teaching of English as a foreign language has received special support at the policy level (MINEDUC, 2009a) also provides the EOD network teachers with some common language with which to talk about teaching. This common language is the body of terms and conceptual definitions that come from the discipline and provide the grounds for how to teach the English language to students. The foreign language as a discipline that EOD network teachers have adopted emphasizes language use in the world, providing teachers with a discursive basis on which to define it (Larsen-Freeman & Freeman, 2008). Moreover, these teachers decided to use English as the vehicle for communicating their ideas in network meetings, bringing two aspects of the language to play: one that defines a discipline and one that is a tool for communication.

The differing structural configurations of these groups in terms of institutional affiliation have other consequences for their functioning. For instance, conditions for EOD network members' participation in meetings and any other network related activity rest on their willingness to contribute in their free time. Members have no institutional support for participating in network meetings during the workday, deciding to hold the meetings on Friday night to allow more people to attend. Getting basic support such as time for meeting with fellow network members would be difficult to achieve, because almost all members work in different schools with different administrative organizations. EOD network teachers have accepted this situation as something they cannot change, focusing on the activities they can accomplish in the time they have available. However, there could be consequences for commitment if participation in network life relies on members' free time. This could be one reason for the high member turnover the network has faced in recent years. On the other hand, being structurally configured as an intra-institution group provides conditions for participation that appear more favorable in the In-school community. Given that all teachers in this community are colleagues in the same school under a single administration, finding common times to meet during working hours is less of a problem. Also, the presence of coordinators who have privileged access to school authorities makes it possible to negotiate the allocation of dedicated time for teachers to meet.

A third dimension comes from how long these groups have existed and worked together, or what I call here their "seniority." While the EOD network is an established, decade-old network with a solid group identity and institutional memory about how to function, the In-school community is an emergent group just starting to build their

identity and define their norms for functioning. The EOD network has gone through different phases, experiencing a period of initial definitions of norms for their work and building of community. They have embarked on the development of projects aimed at achieving joint goals and have stories of successes with which to represent their work as a group. Also, they have gone through cycles of change, including member turnover and the challenge of continuing to work as a group against unfavorable conditions such as the reduction of government-based support and incentives. In contrast, the In-school community has just begun to exist as a group, experiencing the first stage of building community (Gomez, 2012) and defining certain norms for their work, but not yet having developed a practice as a group.

With both groups, the implementation followed a similar path in its design and in some of its results, but also demonstrated contrasting features. Using the dimensions discussed above as lenses through which to look at problem negotiation, I am able to identify some implications of the contrasting features of the process with each network. The first of these implications is that gaining access to groups involves negotiation with coordinators that can be more challenging than might be expected. The second is that the implementation made evident the need to involve different authority figures in order to allow for the systematic negotiation of conditions for working with practitioners. A third implication is that strong alignment and convergence among partners at a level that needs to be anticipated is a key aspect of defining common goals for working together. Finally, understanding participants' expectations is important for successful implementation. In the following section, I describe these four implications in detail and discuss their



relevance using ideas from the literature and evidence from the cases analyzed in Chapters 4 and 5.

### **6.3 Implications of this study: Brokering and boundary crossing in problem negotiation**

Researchers working with the emerging DBIR methodology are identifying issues that arise from conducting studies oriented toward implementation of innovations in real-world contexts with practitioners (e.g. Borko & Klingner, 2013; Penuel et al., 2013). In these studies, researchers are challenging their education research colleagues to become more integrated with those designing and studying classrooms innovations and diffusion of innovation (Fishman, Penuel, Allen, Cheng, et al., 2013). One of the issues that DBIR researchers have identified as important in participant-researcher collaborations is the negotiation of problems of practice and the need for understanding this process from a DBIR perspective. This involves the investigation of questions about “authority, status, and cultural norms of researchers and practitioners” (2013, p. 238) that influence how partners together define the problems and the strategies to address those problems in partnerships (Penuel et al., 2013). This dissertation research contributes to the understanding of problem negotiation as a key stage in conducting DBIR by analyzing the features of this process in implementing projects with practitioners and highlighting the implications of that analysis for future DBIR development.

The problem negotiation process conducted with both networks shared a feature that influenced access to their participants and implementation of the project: the role of coordinators. This role proved central for organizing the network and the community to

support the accomplishment of various activities, including the intervention. The coordinators acted as liaisons between researcher and participants, and in that sense engaged in *brokering* (Wenger, 1998) for this project. They also act as brokers in many other instances of communication and translation of meanings between the group they lead and other environments such as the MoE in the case of EOD Network and the school leaders in the case of In-School community. For the coordinators, *brokering* meant that they helped cross the boundary between the worlds of research and practice in community life by introducing elements of one practice into the other. In this boundary crossing, depending on their singularities, their identities might have influenced the process of negotiation. For instance, the EOD network coordinator was an experienced coordinator with more than four years experience in that position and about eight years experience as a participating member. She has seen the network at different points in time, leading many members who have come and gone and acting as broker through her network membership and her participation in MoE activities.

On the other hand, although experienced in their professions and in leading other initiatives, the In-school community coordinators were leading a teacher community for the first time. However, their deep knowledge of the teachers as individuals and colleagues in the context of the school was complemented by the experience they had leading the rural school mentorship project. They are members of different groups and can act through these groups to influence practices with elements they bring from one to the other. They also developed a relationship with me as a researcher and became advocates for the introduction of a practice – discussing teaching in a teacher community mediated by a wiki – into the practice of that emergent community. Sofia and Eduardo

had to negotiate issues of group membership in a way that contrasted with Monica from the EOD network. They were neither members nor non-members of the community; they coordinated actions, motivated teachers, negotiated conditions for teacher participation, and participated in the wiki, but they were not classroom teachers sharing their practice because of their particular positions in the school. In this way, they face the dilemma of being and not being a member like the teachers and must find a way to “yield enough distance to bring a different perspective, but also enough legitimacy to be listened to” (Wenger, 1998, p. 110) as they broker in and for the group.

The coordinators performed their role in different ways, displaying forms of leadership that were particular to each. Yet, in both examples, the coordinators seemed aligned with teacher leadership characteristics that have been described as the “third wave.” According to this conceptualization, teacher leadership is recognized as central for changing school culture and improving instructional expertise through collaboration and continuous learning (Silva, Gimbert, & Nolan, 2000). As Childs-Bowen, Moller, and Scrivner (2000) point, this involves participation in professional learning communities to affect student learning, contribute to school improvement, inspire excellence in practice, and empower stakeholders. These are characteristics that reflect a view of teacher leadership that is not only focused on the individual, but that involves synergy with different actors in the school. It takes advantage of teachers’ expertise about teaching and learning to improve the culture, and eventually, instruction in favor of student learning (York-Barr & Duke, 2004). The coordinators in this study are leaders in their communities, representing a force that effects change within and, in the case of EOD network coordinator, beyond their schools. For instance, the EOD network coordinator’s

link with the MoE's EOD program provides opportunities in professional development for teachers in her network that otherwise would be unseen and underused.

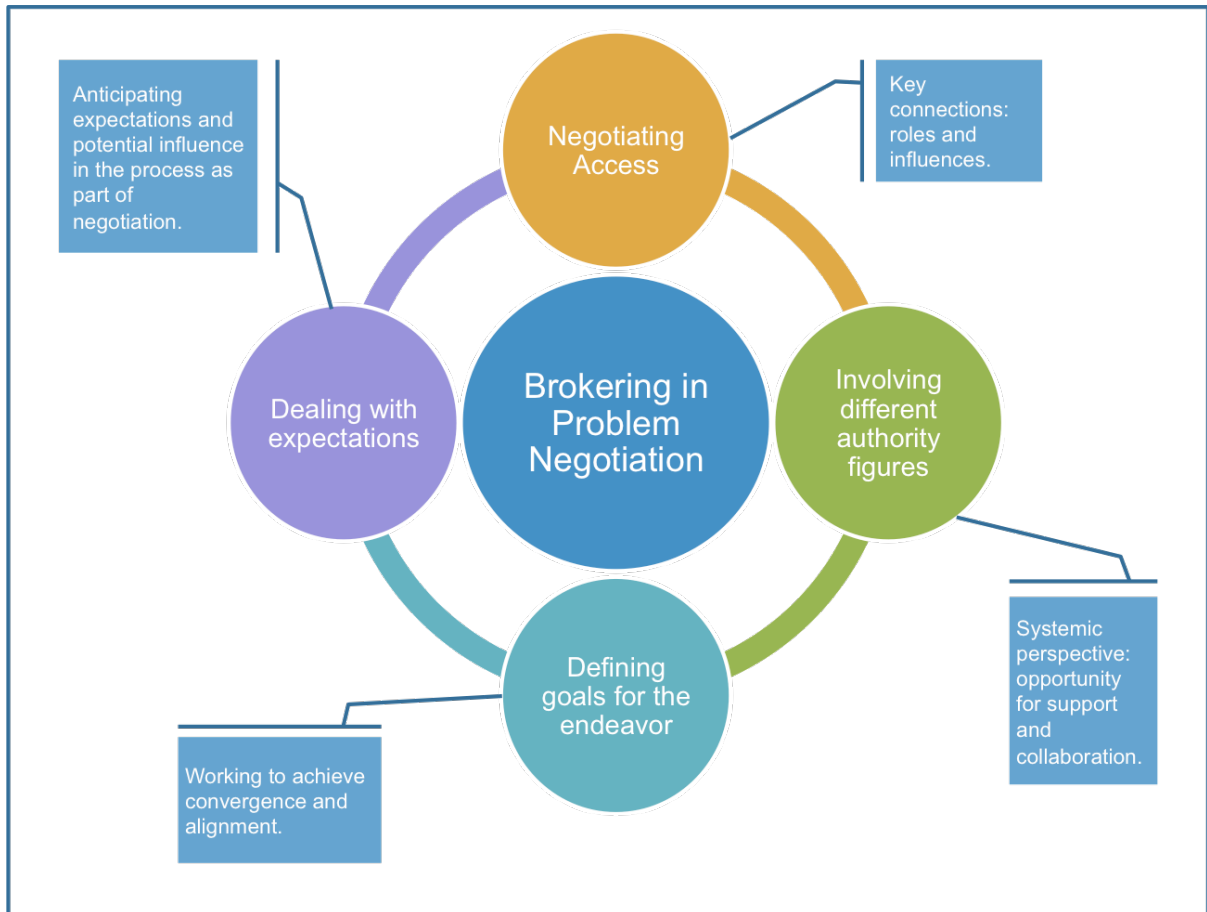
Regarding their leadership style with teachers, the In-school community coordinators seemed democratically oriented, with a focus on teachers' needs and openness to teacher ideas. Evidence of this democratic focus includes their involvement of teachers in defining the norms of the community and suggesting wiki discussion topics. This involvement was accomplished in the meetings by creating explicit space for teachers to express their ideas about the problems on which they wanted to focus and the ways in which they wanted to work together. The EOD network coordinator seemed to perform a more directive type of leadership, with predefined agendas for meetings and emphasis on sharing 'successful' experiences as the main activity for the network. However, looking at the EOD coordinator from the perspective of the other community, she was also concerned about teachers' ideas and created opportunities for teachers to express them. For instance, she would ask for teachers' opinions and call a vote to make decisions, employing a practice that she called democratic.

Conceptualizing coordinators' *brokering* between their network and community sites and the research is a useful way of looking at the project idea translation they did between me and their groups. Translating meanings is part of the complex task of brokering, which is influenced by the experience of participating in different groups (Childs-Bowen et al., 2000). Monica, Sofia, and Eduardo, the coordinators in this study, all have had access to educational research and are familiar with its features, although In-school community coordinators were closer to that world from their roles as university instructors and their experience doing research for their masters studies. The EOD

network coordinator has more than 20 years of teaching experience, which drives her in network activity focused on teaching strategies and successful experiences. Discussing how to support the practice of talking about teaching in the community and studying the process of developing a tool for that purpose was more fluid and seemed to quickly become a shared understanding (Penuel et al., 2013) with the In-school community coordinators. Discussing the central idea of the study took several rounds of conversation with the EOD network coordinator. She explicitly advocated for a focus on providing strategies and concrete resources for teaching rather than only supporting teachers' conversations about teaching.

These two different approaches to problem negotiation in the study might have influenced the translation of the message from coordinators to members. Building connections between the contexts of research and practice needs more attention in partners' relationships. Having the ability to construct multiple frames for shared work might have contributed to a better translation of the message from research to practice (Penuel et al., 2013), facilitating deeper understanding of one another. Overall, problem negotiation in this study was significantly affected by the coordinators' brokering capacity and the possibility of crossing boundaries that their brokering provided. In other words, the negotiation of problems in this research study was influenced by the coordinators' roles in brokering and boundary crossing. In that sense, the problem negotiation process we conducted can be seen as a brokering in problem negotiation, in which coordinators played a major role translating meanings from one world – research – to another – network life.

What I have learned about problem negotiation has been influenced by what I have learned from other researchers who have studied similar problems (e.g. Coburn et al., 2013; Fishman, Penuel, Allen, Cheng, et al., 2013; Penuel et al., 2013, 2011). Although different in terms of the context and the particular features of their research designs, I have learned about the complexities of collaboration among people working in educational change. Looking at these complexities helps to identify the means to make innovation not only possible, but also sustainable over time. I hope my learning can be useful for those who would study problem negotiation in practitioners-researchers collaboration in the future. The following are critical implications of this work that make a contribution to the DBIR community. The implications that emerge from this research are grouped around the idea of problem negotiation that is influenced by coordinators', and to some extent the researcher's, brokering capacity and ability to cross boundaries. Figure 13 provides a view of these implications for problem negotiation as potential supporting structures for the process. In the following, I describe each implication and its connection to the evidence in this study.



**Figure 13:** Implications of this study for understanding problem negotiation in collaborative research.

### 6.3.1 *Negotiating access*

The negotiation of access is one of the first steps in creating research-practice partnership. It can happen over a long span of time and use many different strategies, from directly contacting potential partners to recruiting participants in a formal public call. In the case of this study, connecting with practitioners was possible through key actors. In the case of EOD network, the key actor was a MoE representative whom I contacted for the first study I conducted with the English teacher professional networks. This person put me in contact with the EOD network coordinator, Monica, and invited

me to participate in one of the regular activities that network members are offered by the MoE. In other words, my approach to Monica came through a top representative.

Although Monica's relationship with the MoE representative was positive and she felt more like a colleague of the representative than a subordinate, my access through the MoE seemed to influence the tone of our conversations.

Positions of authority create particular responses in those who may benefit from their relationship with that authority. In this case, the network was considered one of the most exemplary networks in the country, an image that the current coordinator helped to create. She was highly respected in the MoE EOD program as one of the strongest network coordinators they knew. Her work with the network in terms of the activities they developed together and the impact and visibility they had contributed to building a strong reputation for the coordinator and the network. Her reputation granted this teacher coordinator opportunities to be a teacher leader for other English teachers, participating as a workshop instructor in professional development organized by the EOD program and being considered for every event and PD activity available. In our first contacts, the fact that I was contacting her through the EOD program gave me privileged access. This top-down entry to the network benefited me in accessing the group, but it also might have prevented a more critical view of the proposal I presented.

In the case of In-school community, the contact came through a former colleague who connected me with Sofia, one of the coordinators. This was a horizontal referral; the person Sofia and I had in common was a colleague. Sofia was the entry point to the school and to Eduardo, the other coordinator. The relationships among us have been horizontal and free of hierarchical influences from the beginning. Grounded in this type



of professional relationship, the negotiation of access and problems of practice followed a bottom-up process. The coordinators were looking for supports for a new community and they saw my proposal as an opportunity to receive those supports. They were involved in inviting other members to the community, as well as in establishing the norms and conditions for participation in collaboration with all members. Therefore, in contrast to the experience with the EOD network, accessing this community was facilitated by my connection to the very roots of this group rather than to an authority figure. Having access to a group through its members might not promise success in an enterprise, but knowing members' ideas from the beginning and from their account seems likely to facilitate the negotiation of problems with the group.

After the negotiation of access with partners, recruitment of participants is an important challenge that might influence their later participation. Although in both networks teachers were invited – as opposed to mandated – to participate in the project, this invitation had different characteristics and different influences. In the EOD network, every teacher who was member of the group at the beginning of 2013 became a participant. There were consents signed and teachers were given the chance to opt out, but because this participation was part of being a network member, it was practically difficult to decide not to participate. In the In-school community, teachers were individually invited to participate, and they were offered the chance to decline. They also signed consents for participating in the research part of the project with the option to cease their participation at any time. However, as Carlos, one of the community's members, described in the follow-up meeting, being invited in the school context is a strong way of being asked to participate. In his account, the invitation created a

commitment difficult to modify or end. In the context of a school such as the In-school community school, being invited signaled being chosen and therefore imposed some pressure on the members to accept the invitation. This was not what the coordinators had intended. They invited particular teachers, because of these teachers' ability to motivate others by their example. The coordinators thought that they would be able to plant the seed and nurture the plant for others to see and join. If members considered the invitation as a pressing request, it is necessary to understand why such invitation might have felt like an obligation and to review the invitation strategy.

### *6.3.2 Working with different roles and authority levels*

The view of the system as a whole is necessary when developing partnerships. The reality of the two groups studied shows that there is much in the systems that host them that influences what they are able to do. Developing roles and lines of authority and perseverating with common focus in the face of inadequate support is necessary in overcoming challenges (Penuel et al., 2013). Local school leaders initially supported the In-school community in conducting community activities by providing conditions favorable for member collaboration. However, this support was withdrawn when other job obligations and duties were deemed more important. I did not have access to the conversations in which coordinators negotiated with local leaders to provide more time for community participation. We discussed the goals of these conversations and planned responses, but the coordinators had to follow their leaders' decisions independent of my input. The coordinators' brokering capacities were critical in negotiating conditions with local leaders and also exclusive to their role, as I was not in contact with school leaders nor had the capacity to negotiate directly with them.

Schools are highly hierarchical institutions, and the role of authorities is highly influential in terms of what can be done within their limits. Therefore, having the support of local authorities is critical for developing innovations. Researchers have discussed the relevance of developing relationships with local leaders to finding common ground on the problems to be addressed in partnership and to providing meaning for actions (Borko & Klingner, 2013; Cobb et al., 2009). These relationships allow researchers and practitioners to define conditions for implementing an innovation by identifying needs and how to support the fulfillment of these needs in working towards the appropriation and sustainability of the innovation (Borko & Klingner, 2013). As is apparent in this study, the brokering capacity of key actors such as the network coordinators might contribute positively to the exchange between research and practice at different levels of authority.

### *6.3.3 Defining goals and focus of the collaborative endeavor*

An important feature of the definition of goals and focus for collaborating with peers emerged through the analysis of these two cases: Teachers from both groups seemed to focus their collaborative efforts in two layers. In one layer, they were concerned with the need to access and integrate more resources and strategies to develop their work. Therefore, they were interested in an exchange with their peers that would bring them more of those resources and ultimately enhance their teaching and help their students. In a second and deeper layer, teachers' goals for collaborating with peers involved the exchange of views on the features of their teaching. Teachers wanted to discuss these features and receive feedback from those who were doing a similar job.

They wanted to go beyond sharing successful activities or a brand new strategy to teaching their subject to talking about their practice as teachers.

The second layer described is closely related to the goals of the project I suggested to the two teacher communities. This goal was to gather teachers for the purpose of sharing their teaching through specific examples and discussing their views and perceptions to an analysis of the teaching in the examples (Ball & Cohen, 1999). There were supports to be developed for making that collaborative analysis through conversation more effective. In addition to the supports, there was a need for the alignment of researcher and practitioner goals and agreement on the activities to conduct as a network that would accomplish those goals. Building such alignment is critical for successful research-practice partnership.

Focusing on persistent problems of practice from multiple perspectives is a key element of conducting DBIR (Penuel et al., 2011). In this study, I identify the relevance of defining goals in partnership so that the focus of the collective work is oriented toward the same problems of practice. Having differing goals might lead to confusion and misalignment between partners and create conflict or simply prevent the collaboration from continuing. It is important to anticipate these potential differences by providing enough time for partners to discuss the goals of the shared endeavor and to come into alignment before going deeper in the implementation. A figure such as a broker who can bring practices from one world to another might be beneficial in achieving alignment during negotiation (Wenger, 1998). In addition, being able to develop a hybrid language in the partnership can contribute to a common understanding, making explicit ideas that might not be visible were there no name by which to call them (Penuel et al., 2013).

#### 6.3.4 *Dealing with expectations*

Consideration of participants' expectations is the final implication that I highlight to contribute to future DBIR work in partnerships. In this study, teachers brought different expectations to the project. In the case of the In-school community, the expectation of connecting with teachers from other schools was strong. This expectation, however, was unseen during the implementation. Getting in contact with other schools within the same foundation and involving teachers from those schools in the community was indeed part of the project from the coordinators' perspective, but it was not realized during the implementation. The coordinators were clear that they would begin working with the small group first and later include other schools and that they would hold on to the wish for the latter. However, including teachers from other schools did not happen in the timeframe teachers thought it would. This expectation was strong and might have influenced teachers' engagement in a way that was unforeseen by the coordinators and me. During the three meetings with the teachers, there was not enough time to deeply discuss their ideas and expectations and include them more strongly in the implementation.

Expectations in a joint endeavor can affect many things, including engagement. Anticipating the potential influence of these expectations is important for achieving a shared sense of going in the right direction (Penuel et al., 2013). To contribute to this understanding, it is important to provide time for partners to share their views about the project and make explicit their expectations. Partners can continue revising their expectations and collectively look for ways to address them after the implementation has begun.

## **Chapter 7**

### **Insights and Conclusions**

#### **7.1 Evolution of the study: toward problem negotiation**

This dissertation study was oriented toward understanding the features of problem negotiation in collaborating with teachers to develop supports for their collective work. The study focused on the initial stage that comes in the process of collaborating with participants in Design-Based Research (DBR): the negotiation of problems to be addressed by an intervention. I studied problem negotiation in the context of collaborative research with practitioners, situating the study in two different layers. As explained in Chapters 1 and 3, the inner layer of this research uses a DBR perspective with two teacher networks, in which I as researcher collaborated with practitioners in developing a tool to support conversations about teaching. The outer layer used a Design-Based Implementation Research (DBIR) perspective to focus on the stage of collaboration that requires those involved in partnership (a researcher and practitioners) to negotiate the problems they want to understand and eventually solve.

This study began with one set of goals and expanded to include a completely new set. Though this evolution was unanticipated, it was not random. The study design that I initially proposed was the product of almost two years of exploring teacher collaboration that happens for the purpose of learning about teaching practice in communities, along with the pressing conviction that supporting teachers to focus more on their practice in their collaborative efforts would be beneficial for that learning. I studied how teachers learn together and how professional development can support learning and increase opportunities for that learning to occur and be taken up. I also studied methods that would allow me to understand phenomena in a comprehensive manner without losing sight of the practitioners' perspective and the context in which they work and live. I came to realize that I wanted to research problems related to teacher learning and how to support it with technology, but in a way that was respectful of context and the particular views of the people involved. DBR provided a powerful framework for me to situate the research collaboratively with participants. I wanted to create a design in which they could be protagonists in the research, so I sought to learn more about DBR as a research perspective. In parallel, through my work in a research project on teacher learning from participation in professional development opportunities in two countries, I knew about the English teachers professional networks in Chile. These networks provided an opportunity to explore the phenomenon of teachers learning together about their teaching in the context of professional networks in my own country.

In the initial design of this dissertation, the focus was on the learning processes of teachers in professional English language learning networks and how their interactions, supported by a web-based tool, might support them in developing a new understanding of

their teaching practice. The study was first set up to involve one teacher network and then incorporated a second network in the second phase. Particular situations in the life of the networks led to adjustments in the implementation that affected the course of the research. I found myself unable to continue with the plan of working with two English teachers' professional networks during the data collection. Here was when the emergent learning community that needed support to get started, the In-school network, materialized. They were willing to collaborate with me in this research, offering an opportunity to develop a collaborative process with a new group of teachers that was different from the first network. In implementing the DBR project with the two networks and working on understanding this implementation, I came to realize that the particularities of my access to each network, the way the project was presented to participants, and the initial negotiation of ideas with them might have played a role in how the intervention unfolded. The emergent ideas of DBIR provided a framework for me to think about this first stage in the implementation and led me to focus on problem negotiation. I proposed two central research questions to guide this newly emergent inquiry:

RQ1: What are the features of problem negotiation in two contrasting cases of teachers using a web-based tool to support conversations around teaching practice?

RQ2: What are the implications of these different negotiations for how teachers used the tool that supported conversations around teaching practice?



In this dissertation, the features of problem negotiation were studied as part of the process of accessing and negotiating ideas with two different groups: a veteran teacher professional network and an emergent teacher community. The analysis of different sources of data at different points during the process allowed for describing the features of negotiation in both groups. The data included background contact with coordinators, baseline interviews with teacher participants, an online survey to which all participants responded, records from meeting observations, and a follow-up meeting conducted several months after the completion of the implementation. Insights from studying problem negotiation with teachers in networks are shared in the following section, along with an analytical view on cross-cultural issues in conducting research that involves a different national context and a description of future work that I envision to develop around the work included in this dissertation.

## **7.2 Insights from studying problem negotiation with teacher networks**

The role given to practitioners in research is critical for the success of efforts to generate systematic change that creates space for and sustains innovations (Fishman, Penuel, Allen, Cheng, et al., 2013). This is partnership in which practitioners and researchers learn from one another in the quest for understanding the problems of practice involved in a particular context. There is an effort to create opportunity for real collaboration in which all involved play a role in defining the problems and decide how to address them, building new knowledge in the process (Penuel et al., 2011). Research along these lines can involve systems such as school districts in which different levels of administration are involved (Cobb et al., 2013). However, the role of the practitioner is

also important in small scale research – for instance, collaborating to create supports for teachers’ collective work in networks such as was the goal in this study – in which finding common ground and alignment around the problem be addressed collectively is required. A legitimate question to be asked is: What can be learned from these cases for enhancing problem negotiation?

The case described in Chapter 4 provided a view on the implementation of a DBR project to develop a tool to support conversations around teaching practice with a group of teachers in a veteran English language teacher network. Their experience working together for many years and their needs as a group regarding exchange of resources and strategies strongly influenced the process of implementation. These features were identified early in the research, but the extent of their impact in the implementation was not clear at that point. In this chapter, I argue that teachers in this network showed a strong orientation toward interaction and collaboration with colleagues and that their purpose for collaborating appears to be practical rather than reflective. In the analysis of interviews, the main emergent themes were Interaction and Network activity and the most common categories were *Disposition toward collaborating with colleagues* – based on highly theoretical views of collaboration – and *Collaborating* – oriented toward a practical perspective.

These two categories are representative of the value that teachers in the EOD network placed on interacting with their peers and the purpose they had in doing so. In their perceptions, collaboration happened when they exchanged things related to their needs as teachers such as the sharing of resources, strategies, and materials for teaching that have a practical use. This disposition toward and understanding of collaboration is

not in conflict with the purpose of the intervention we developed, but neither is it fully aligned. The misalignment between researcher and practitioner regarding the idea of discussing teaching and analyzing the features of specific instances of that work might have influenced the extent to which teachers in the EOD network were engaged with the project. As I point out in the case analysis in Chapter 4, this misalignment emerged in the first conversations with the coordinator. Although it appeared as if the misalignment had been overcome, it might have persisted in the coordinator's and participating teachers' beliefs. One example of this was that most teacher suggestions on how to improve the wiki tool focused on making it a place to share resources and strategies, rather than artifacts of practice or participating in discussions with peers.

As part of the negotiation phase with the EOD network, the teachers and I were somehow unable to perceive two important aspects of this network's life. The first aspect is that the network started the year with many new and few long-standing members. New members had to become acquainted with the norms and routines of the network in addition to participating in the project I proposed. As Paula, one of the teachers, put it with particular clarity during the follow up meeting, "Maybe we failed in identifying from the beginning that we did not have stable teachers within the network, and anyway we tried to have them on board [in the project]." She recognized that so many new members might have made it a stretch for the network's capability to cope with a new challenge such as the "Let's Talk about Teaching" project that I proposed to them. The second aspect is the perception that the collaboration needed a "mark of success," something that could show them that things were working in a positive way. This mark of success was not part of any discussion during the problem negotiation stage in the

implementation, nor was it included among expectations that teachers had for the project implementation.

The case described in Chapter 5 shows a contrasting reality in which an emergent community set out to begin working together with the purposeful focus of talking about teaching as a group. The coordinators' roles in the school enabled a horizontal relationship among community members, in which each and every one was capable of influencing the course of action in the community. Important ideas emerged in conducting the implementation, and particularly, in negotiating problems with this community, that can contribute toward a better understanding of problem negotiation in collaborative research generally. The details of these ideas are presented in the case analysis in Chapter 5; I highlight two of them as most salient. The first idea is that the origin of collaboration and direction of the negotiation seemed to influence the implementation of a shared researcher-practitioner endeavor. The In-school community problem negotiation process involved intense participation of network members, initially represented by the coordinators, but then also including the other members in this community. There was a special confluence between what they needed and what I was suggesting in the research. We capitalized on that confluence, developing an implementation for the project that had more-or-less common goals. This kind of match is not easy to build or influence; it happens in ways that are not always manageable. However, one could miss the opportunity presented by such a confluence and not benefit from the alignment. As described previously, the negotiation was conducted in a bottom-up manner, in which participants were actively involved in the decision making process. This is in contrast to how negotiation was conducted with the EOD network.

Complementing the negotiation was a profound knowledge of the context brought by the coordinators. This allowed for a good fit and easier sense making by teachers in learning about and respecting the contextual features of the group from both the coordinators and me. For instance, adjusting the language used within the tool so it was better received and understood by the community members was an early suggestion that Sofia gave me about the tool we were designing together.

The second idea I highlight is that there is only so much that knowing the context and aligning with participants can do when the conditions for the innovation, in a broader sense, are not in place. DBIR research highlights the importance of systemic change and the need to act in the whole system for the adoption and sustainability of an innovation (Fishman, Penuel, Allen, Cheng, et al., 2013). In the initial negotiation with the In-school network, the coordinators sought to secure conditions for community members to have time to meet and participate in the activities within the wiki. However, their efforts and ideas were not always compatible with the school leaders' vision. There were conflicting signals from school leaders; they supported the idea of the community, yet the conditions for its existence were not afforded. For a more successful implementation, negotiation might have needed to scale to the upper administration levels, seeking to involve them in the project and generating alliance with them as key facilitators. In this way, we could have discussed with these leaders the need for teachers to get together and participate in the activities oriented toward learning about their teaching, defining conditions for that participation, and securing their affordability.

### **7.3 Cultural considerations in research that involves different national contexts**

Conducting social science research involves dealing with issues that are particular to the context of the study and the people who are part of the project. As Ravitch and Riggan (2012) claim, conceptual frameworks for research are influenced by the fact that empirical research in the social sciences is not neutral and does not happen in a void, that there are usually autobiographical motivations for research, and that assumptions and personal biases inform researchers in their work. I believe this is true for the research I conducted and is consistent with issues that different qualitative methods specialists note as well. For example, Corbin and Strauss (2008) comment on the challenges that foreign students in the United States face when conducting research in their own countries and the need for developing theories that are reflective of the place and time in which the research takes place rather than “borrowing” them from other cultures. Other authors discuss more specific issues in conducting research with different cultures such cultural challenges to informed consent and how a critical perspective on Western research practice is needed (Marshall & Rossman, 2006) and the complexities in doing cross-cultural interviews and how identifying those complexities can be helpful for research that travels from one context to another and also for the researcher’s own context (Patton, 2002).

I, a Chilean native who has been trained in education research in an American university, conducted the present research in my home country. The fact that I was being enculturated in the academic culture of a foreign country became an important concern in exploring and designing a study based in Chile. I was aware of the potential issues

involved in doing research in Chile while I was studying and developing my research skills in the United States. I considered this an opportunity to contribute knowledge and conceptual ideas to my national context, including a critical view on theory and using all the means available (e.g. discussing with Chilean colleagues, contrasting my ideas with those of participants, reviewing available Chilean literature on the topics involved in my study) to problematize my proposal so to make clear the difference between the contexts. My motivation to conduct this study in Chile, in accordance with Ravitch and Riggan's (2012) ideas, was influenced in part by my own personal history as a teacher and in working with teachers in research and professional development.

I used to be a teacher at the elementary and secondary level in Chile. I also worked as teacher educator, researcher, and professional developer for teachers. I have gained knowledge over the years about the broader school system in Chile, the experiences of schools under different administrations that enroll diverse student populations, and the life of teachers at different points in their careers (i.e. pre-service, in service, novices, and seniors). Despite that knowledge, I faced many challenges in conveying meanings to the teachers with whom I collaborated in this research. Here I would like to discuss a particular set of concerns that emerged from this study as I conducted activities in two different national contexts. I hope that attending to these concerns will provide an inside view on the complexities of conducting research in one setting while transiting from a different one and as such identify potential threats to the trustworthiness of this study.

A first concern is being trained in one culture and conducting research in another one. The learning opportunities I was offered in my doctoral program were mostly

American centric, with emphasis in theory and knowledge that have emerged from research in American settings. I learned powerful ideas about teaching and teacher education in this country that are important referents for education researchers in other countries, but that also are a response to particular features of American education that contrast with those of my home country. For instance, in the United States there is not a single public education system, but a distributed system that responds to state, city, and district mandates, rather than to a national Ministry of Education as is the case in Chile. This difference between the education systems is only one example that represents my early awareness of the complexities of studying how to conduct research in one culture and conducting research in another one. Later, in the specific task of designing the study around professional networks in Chile, I learned that the two contexts were not completely disconnected. The conceptual foundation of the program that created the professional networks was informed by research on teacher learning communities, teacher learning from professional development, and teacher collaboration with peers that has been conducted in other countries, including the United States. Using these literatures might be problematic, as they do not necessarily respond to the Chilean context, but they might be the only possible referent as research around these topics is still emergent in Chile.

Some conceptual ideas that have been developed in the context of American education research may be more relatable to and accepted in the Chilean context than it might appear. That is the case with the conceptualization of teacher learning communities, which was used by the MoE in the policy definition of professional networks (MINEDUC, 2009a). The understanding of networks used in the policy



document involves the idea of enhancing the profession through sharing of experiences, collaboration around teachers' interests and needs, and collective reflection to build shared pedagogical understanding. This is in close agreement to what can be found in some examples of American research regarding the relationship between networks and learning communities (Lieberman, 1996); the place of a community's collective reflection in practice (Ball & Cohen, 1999; Lieberman, 2000), including taking a critical perspective on those practices (Little, 2003); and encouraging association among teachers to share their profession (Lampert, 2010). The coherence among ideas used in the Chilean context and those developed within the boundaries of a different national context do not necessarily mean that teachers in this educational system have taken up these ideas, but they are part of the policy conceptualization of the networks and therefore their presence in general discourse might be inevitable. It does seem that the idea of creating professional networks has been well received by teachers, as more and more networks have been created in the country in recent years.

Another concern regarding this research involving two national contexts is that of the contrast between their teaching cultures and the implication it might have for understanding and conducting research in the Chilean context. Based on the characteristics of the profession, teaching in the United States is understood differently than it is understood in Chile. Among several differences, Chilean teachers' salary is based on the number of hours teaching in front of a class. When teachers' teaching hours change from one year to the next, their salary also changes. This situation creates many pressures for teachers, including the need to fill their schedules with teaching hours in order to earn a salary, leaving little time for other activities. Additionally, teachers in the

Chilean education system are seldom financially compensated for time dedicated to professional development. In such a scenario, teachers' participation in professional networks involves giving away free time and assuming that developing their profession is a personal obligation rather than a responsibility shared by those who hired them. As such, lack of participation and teacher turnover in professional networks needs to be understood differently than similar issues in a context in which teachers are compensated for time spent in professional development activities. On a contrasting note, voluntary participation might create a particular kind of commitment that is independent of external rewards, as some of the EOD teachers seem to experience.

Another concern that I recognize as central in this research is the use of language and the translation of concepts in the implementation with the networks. In my research, I use both English and Spanish in different proportions depending on the place I am standing. Naturally, I would use Spanish in Chile and English in the United States. However, this differentiation is more nuanced, because one of the teacher groups I worked with was comprised of teachers of English who had high proficiency in using that language. For research design, writing about the study, and communicating with colleagues and professors in the United States, I used the English language. For communication with participants in the EOD network I mostly used English, but turned to Spanish during interviews and in some personal communications. Most of the wiki materials and data collected during meetings with this network was in English. In contrast, the In-school network included teachers from different disciplines, and they only used Spanish. Therefore, all communication happened in Spanish, involving translation of some documents and materials that were originally created in English.

As in any translation, there is the risk of compromising the meanings conveyed by the original language. I did all translations for that reason, at times checking with a colleague about the precision of my translations. Even with these checks, my concern about translation accuracy still arose in language use issues such as the different meanings of the word “problem” (“problema” in Spanish). The issue emerged between the EOD network and me when we were discussing the problem we wanted to address with the implementation (See Chapter 4, 4.2.3, Follow up). This issue evidenced a complexity beyond the word’s linguistic definition and involved its use in a particular context. On the one hand, the word “problema” in Spanish, as in English, has different definitions, but they can be classified in two groups: the definitions that refer to an unwelcomed difficulty or situation that needs to be solved and overcome and the definitions associated with an inquiry that begins with given conditions that are to be investigated. People in Chile, as in the United States, could use this word to talk about situations that need to be solved because they can be harmful and cannot stay as they are and to talk about inquiries or questions that require investigation to arrive at a solution such as a problem in mathematics or science. On the other hand, different communities use the word with different intended meanings. In the academic community, many times the word “problem” is used following its academic definition as a question worthy of inquiry and discussion. In the conversation with the EOD network, I used this latter definition of “problem,” meaning the questions that we wanted to address as a group in the implementation. The network teachers understood something different, thinking that I was talking about difficulties we faced in the implementation, and we had to unravel the meanings we were exchanging in order to continue the conversation. This is an

illustration of the complexities of doing research across languages, but also research that crosses the boundaries of different communities, in this case, the education research community and the education practitioner community.

This research has been informed by theory developed in different national contexts (e.g. concept of artifacts developed by Rabardel, 1995; definition of collaboration by Dillenbourg, 2002), although for reasons explained above, American research has occupied more space. In defining the study design, ideas such as that of documents of practice (Ball & Cohen, 1999) became important for developing the proposal to support teachers conversations within professional networks using a wiki tool in which they could share examples of their teaching. In differentiating this research from that of others, but acknowledging their influence, I proposed a different name for these examples, calling them “artifacts of practice.” The definition of the artifacts of practice was shared with participants and discussed with them remotely and in person, making clear that they were “concrete representations of teaching practice such as videos, detailed descriptions of practice, student work, or teacher journals” (this dissertation, Chapter 3, section 3.2.2). Despite this level of specificity, there is the possibility that teachers understood the concept in a different way, making less likely for them to contribute in the wiki. They might have believed that the artifacts of practice had to be videos and creating and sharing videos was too much burden for them to afford given their work conditions. Also, I have identified a misalignment between the participants’ understanding – particularly in the EOD network – and my understanding of the collaboration they could have within the wiki. This misalignment basically undermined their disposition to participate by sharing artifacts in the wiki, because the proposal I

brought was not aligned with what they needed. In relation to this misalignment, teachers might have rejected the concept of artifact of practice, coined in a different context, because they perceived it as foreign and not responsive to their particular context.

Finally, I have been challenged to an extent I am perhaps not able to fully realize yet by working in two national contexts, including how much the fact of being trained in one context and conducting research in a different one might have influenced my work. In taking this perspective, I am hoping to address potential threats that this fact might have posed. Concretely, I involved participants in the definition of problems of practice to address in the implementation as much as I could. I also asked colleagues who were not involved in the project, but who were knowledgeable of the Chilean context, to check my conceptualizations and the instruments used in data collection and implementation. In addition, as key participants, I asked the coordinators to help me revise documents to identify possible mistranslations and to get their feedback on the vocabulary and tone so to be responsive to teachers' backgrounds. I hope that these strategies conveyed a message that I was sensitive to the context and participants in the study and at the same time keep its coherence with the context in which this work would be assessed. It seems likely that some meanings were lost in translation, despite my being a native speaker of Spanish.

#### **7.4 Future work**

After conducting this study, I can identify ways in which it can be expanded and further developed. My eye is on ways to increase our understanding of how to stimulate collaboration between researchers and practitioners when conducting research that

focuses on persistent problems of practice, is iterative and collaborative, seeks to develop theory related to learning, and pursues the development of capacity for sustainable change (Penuel et al., 2011). In my case, this is also research that focuses on teachers learning together in professional development that involves collaboration for developing new knowledge about teaching practice. In thinking about how to conduct research on teacher professional development that is committed to these key elements, situative perspectives on learning seem relevant in that they consider learning as deeply connected to the contexts and activities in which it takes place (Brown et al., 1989b). I see the future of my research as influenced by these perspectives, which are also consistent with my view of research. For understanding the usefulness of situative perspectives, Hilda Borko offers the interesting metaphor of using “multifocal lenses” in conducting research on teacher learning and professional development (Borko, 2004, p. 8). The metaphor describes how researchers can use the near-vision prescription of a psychological framework to examine how the individual teacher develops new knowledge and teaching practices, and then use distance-vision prescription to look at the professional development community from a socio-cultural perspective investigating communication and participation. Using multifocal lenses or having the ability to use multiple frameworks is an asset of situative perspectives in research that allows for switching the view from the individual to the collective.

To continue research on how to create collaboration between researchers and practitioners, a multifocal perspective could make possible the investigation of how to support partnership formation at different stages, not only the problem negotiation stage. This study focused on problem negotiation as a result of the particular features of this

journey, but I believe there is still much to be learned about how partners develop understanding of the different iterations in a DBR implementation or how they build new knowledge and eventually theory about learning in the implementation of an innovation. Identifying the nuances of the implementation process through the use of different conceptual frameworks and looking at different sets of data is one way to address these questions.

For another line of development, it could be useful to study the problem of supporting teachers' collective analysis of practice from the perspective of the system in which they are situated. This would be studying how to support professional learning communities focused on improving teaching practice by looking at the context in which they emerge, the local administration of the teachers' schools, and the conditions for community activity that they provide. The distance-vision prescription here is used to look from a higher level in seeking to understand how the context supports or hinders possibilities for teacher collaboration on learning from their practice. Teacher networks as places for learning do not exist in a vacuum, and, despite the levels of autonomy they have, they are highly influenced by the institutional context in which they are placed. As Cobb et al. (2013) assert, there is strong evidence that teachers' instructional practices are influenced by the features of school and system settings in which they work, so there is no reason to look at classrooms as if they exist in an "institutional vacuum" when studying teaching and learning. Building on this idea, I suggest that conducting research on learning in professional communities requires looking closely at the school and district systems that host them and to which they are related.

Finally, as part of research oriented toward nurturing and supporting practitioner-researcher collaboration on learning about teaching, I envision a wider collaboration that includes novice teachers. If we think of the networks as learning communities centered in teaching practice, including practitioners at different levels of expertise can support the emergence of a community of practice (Lave & Wenger, 1991). In this community, more experienced members can interact with those just beginning, providing opportunities for learning from one another. Studying ways to support the communities in collaboration with practitioners at different levels of expertise can help in understanding how these interactions might be productive for learning about teaching over the course of teachers' careers. It also offers the opportunity to partner with those about to leave schools of education or who have just graduated, creating a continuum in the teacher education process.



## **Appendices**

## Appendix 1: Wiki's Home Page

Screenshot of wiki's home page on its first iteration



Let's Talk about Teaching  
Hablemos de Enseñanza

Wiki Home  
Recent Changes  
Pages and Files  
Members  
Search

All Pages  
home  
Artifacts of practice  
Artifact1-video  
Artifact1-description  
Resources  
activity

home

Welcome to the Let's Talk about Teaching wiki!  
¡Bienvenidos a la wiki de Hablemos de Enseñanza!

[BEGIN / COMENZAR](#)

**About the wiki / Sobre la wiki**  
This is a space especially created to encourage conversations about teaching practice within the Pioneers Network. In this space you will find different resources to observe teaching of English in Chilean classrooms, read about activities implemented in classrooms, and comment on those examples. Only teachers who are members of the network will be able to read your comments and reflections.  
*Este es un espacio especialmente creado para fomentar la conversación sobre la práctica de enseñanza en la Red Pioneers. En este espacio encontrarás recursos para observar la enseñanza del inglés en la sala de clases, leer sobre actividades implementadas en aula, y comentar esos ejemplos. Sólo profesores que son miembros de la red podrán leer tus comentarios y reflexiones.*

## Wiki's artifact of practice page

The screenshot shows a web browser window with the address bar displaying `talkingteaching.wikispaces.com/Artifact1-video`. The page header features the logo and name "Let's Talk about Teaching / Hablemos de Enseñanza".

**Navigation Sidebar:**

- Wiki Home
- Recent Changes
- Pages and Files
- Members
- Search
- All Pages
  - home
  - Artifacts of practice
  - Artifact1-video
  - Artifact1-description
  - Resources
- activity

**Main Content:**

### ☆ Artifact1-video

**Artifact 1 - Video of teaching**  
**Artefacto 1 - Video de enseñanza**

Watch the following video by clicking on the Play button. Then, share a comment guiding your reaction by the questions below.  
*Observa el video haciendo click en el botón de Play. Luego comparte un comentario guiándote por las preguntas más abajo.*



**To guide your reflection and comments:**

- Could you describe in your words the teaching instance just observed? Please, be specific but only describe what you can actually see in the video.

**Para guiar tu reflexión y comentarios:**

- ¿Podrías describir en tus propias palabras la instancia de enseñanza que recién observaste? Por favor, trata de ser específico/a pero sólo describe lo que puedes ver directamente en el video.

## Appendix 2: Summary of data collected

Summary of data collected with both network cases

Category	Title	Type	Date	Language	Phase	EOD Network	In-school Community
<b>Background data</b>	EOD Winter retreat meeting	Notes	7/19/2012	Spanish	Pre- implement.	X	
<b>Interview</b>	PN1- Coordinator	Transcription from Audio	8/23/2012	Spanish	Pre- implement.	X	
<b>Background data</b>	PN1- Coordinator	Document	11/26/2012	Spanish	Pre- implement.	X	
<b>Communication</b>	PN1- Coordinator	Email	11/23/2012	Spanish	Pre- implement.	X	
<b>Communication</b>	PN1- Coordinator meeting	Notes	12/19/2012	Spanish	Pre- implement.	X	
<b>Background data</b>	Proposal study RPL	Document	11/26/2012	Spanish	Pre- implement.	X	
<b>First meeting with PN1</b>	Presentation of study to participants	Presentation Notes	3/15/2013	English	Pre- implement.	X	
<b>Communication</b>	Contacts to setup meetings	Email	08/01/2012 to 02/01/2013	Spanish	Pre- implement.	X	
<b>Meeting record</b>	PN meeting 1	Transcription from Audio	4/19/2013	English	Implement.	X	
<b>Meeting record</b>	PN meeting 2	Transcription from Audio	5/24/2013	English	Implement.	X	
<b>Meeting record</b>	PN meeting 3	Transcription from Audio	6/28/2013	English	Implement.	X	
<b>Baseline interview</b>	PNmember01 interview	Transcription from Audio	4/8/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember02 interview	Transcription from Audio	4/10/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember03 interview	Transcription from Audio	4/11/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember04 interview	Transcription from Audio	4/12/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember05 interview	Transcription from Audio	4/15/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember06 interview	Transcription from Audio	4/15/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember07 interview	Transcription from Audio	5/15/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember09 interview	Transcription from Audio	4/18/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember10 interview	Transcription from Audio	4/22/2013	Spanish	Implement.	X	
<b>Baseline interview</b>	PNmember11 interview	Transcription from Audio	4/23/2013	Spanish	Implement.	X	
<b>Survey data</b>	Survey	Spreadsheet	4/16/2013	English	Implement.	X	

	Responses					
<b>Survey data</b>	Survey Responses	Spreadsheet	12/10/2013	Spanish	Implement.	X
<b>Wiki records</b>	Artifact1 + comments	Screenshot from wiki	4/1/2013	English	Implement.	X
<b>Wiki records</b>	Artifact2 + comments	Screenshot from wiki	5/15/2013	English	Implement.	X
<b>Wiki records</b>	Artifact3 + comments	Screenshot from wiki	5/18/2013	English	Implement.	X
<b>Wiki records</b>	Artifact4 + comments	Screenshot from wiki	6/1/2013	English	Implement.	X
<b>Meeting record</b>	PN meeting 1	Transcription from Audio	11/12/2013	Spanish	Implement.	X
<b>Meeting record</b>	PN meeting 2	Transcription from Audio	11/26/2013	Spanish	Implement.	X
<b>Meeting record</b>	Meeting with coordinators	Transcription from Audio	12/17/2013	Spanish	Implement.	X
<b>Meeting record</b>	PN meeting 3	Video	12/30/2013	Spanish	Implement.	X
<b>Wiki records</b>	Artifact 1 + comments	Screenshot from wiki	11/12/2013	Spanish	Implement.	X
<b>Wiki records</b>	New space	Screenshot from wiki	11/11/2013	Spanish	Implement.	X
<b>Tool interview</b>	Memo after meeting	Notes	6/6/2013	Spanish	Implement.	X
<b>Tool interview</b>	Memo after meeting	Notes	6/10/2013	Spanish	Implement.	X
<b>Tool interview</b>	Memo after meeting	Notes	6/18/2013	Spanish	Implement.	X
<b>Tool interview</b>	Memo after meeting	Notes	6/19/2013	Spanish	Implement.	X
<b>Tool interview</b>	Memo after meeting	Notes	6/21/2013	Spanish	Implement.	X
<b>Follow up</b>	Meeting with subgroup	Transcription from Audio	5/16/2014	Spanish	Post-Implement.	X
<b>Follow up</b>	Meeting with subgroup	Transcription from Audio	5/19/2014	Spanish	Post-Implement.	X

### Appendix 3: Baseline Interview Protocol

*Hablemos sobre enseñanza / Let's talk about teaching*  
University of Michigan School of Education  
2013

#### Interview Protocol

First individual meeting with participants

The purpose of this interview is to establish the first personal contact with participants in the study and creating access to the participant's professional history. In addition, to have access to the participant's view about focusing conversations within the Professional Network in teaching practice. The goal is to obtain their own personal vision about talking about practice, closely looking at examples of teaching, and discussing around these examples.

Each participant in the study will be visited in a place that is convenient to him/her, ideally the school where participants work. The meeting will take place in a quiet place and the participant will be asked to authorize audio recording.

Interviewee:	Date:
Start time:	Interviewer:
End time:	Place:

#### Before the interview:

- Define a place for the interview that can be comfortable and quiet enough to make tape records. Prepare two signed copies of the consent, one for the interviewee and one to take with me. Prepare a copy of the questions. Prepare the tape recorder.

#### In the interview:

1. Thanks for the time generously dedicated to the interview.
2. Establish good partnership. For using tape recorder ask: *is using a tape recorder okay with you?*
3. Regarding the consent, ask: *Could you read one of them, and if it's all right would you sign it and give it to me and then hang on to the other?*
4. Give some information about me, and why I am conducting the interview. Ask: *would you like to ask something about the study?*

5. Start the interview in the moment that is better, not the moment that I have planned to start. Watch for the best moment to start.
6. Be prepared to address the level of detail I am looking for by asking questions like: *could you just walk me through...? Could you tell me more about that?*
7. Be aware about markers that respondent could offers while talking about something else.
8. Try to visualize what the respondent is describing. If I cannot, ask for more details or what was not so clear.
9. Be aware of partnership with respondent. Be aware of discomfort or boredom. Find the way to engage the respondent again.
10. At the end of the interview thanks the respondent and ask if there is any question. Offer contact information in case the respondent wants to contact me.

After the interview:

- Find a quiet place to seat and write a memo about the interview.
- Register everything you can recall from the conversation and insert your analytical comments. Try to label both types of comments.

***These questions refer to characteristics of your work in the school where you spend more hours a week.***

1. What tasks are you expected to accomplish in your school? *I will read you some tasks and you can select all that apply to you, and also add others.*
  - Creating curriculum
  - Planning for your own teaching
  - Planning for others' teaching
  - Preparing materials for students
  - Teaching in the classroom
  - Grading students' work
  - Participating in meetings with other teachers
  - Participating in meetings with school leaders (e.g. principal, level coordinator)
2. Do you held any leadership position in the school? *Yes/No*  
If Yes, please describe your responsibilities
3. Do you held any other position different to classroom teaching in the school? *Yes/No*  
If Yes, please describe your responsibilities.

4. Thinking on the last academic year (2012) how much emphasis did you give to<sup>5</sup>:
- Integrating new approaches in your teaching of English
  - Developing innovative activities for English teaching
  - Promoting collaboration among students
  - Relating classroom activities with students interests
  - Connecting English teaching with the global context
  - Creating opportunities for using English during lessons
  - Integrating digital technology in your teaching

***The following questions are focused on the interactions among teachers in your school.***

5. How many teachers in your school do the following? *You can tell me none, some, most, or all.*
- Plan together for instruction
  - Offer advice in teaching
  - Observe each other teaching
  - Share materials for teaching
  - Share strategies for teaching
  - Promote innovative teaching practices
  - Promote collaboration among students
6. Do you agree with the following statements about the work in your school?
- Teachers work together in developing projects
  - The principal promotes collaboration among teachers
  - The pedagogical coordinator promotes collaboration among teachers
  - The principal, teachers and staff work together to run the school
  - Most teachers in this school are cordial
  - Most teachers openly express professional ideas in meetings

***These questions are about you as English teacher.***

7. Could you tell me about you as English teacher? How would you describe yourself as English teacher?
8. What do you expect from your students in relation to teaching and learning?
9. What do you think your role as a teacher needs to be in teaching the students you currently teach?

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<sup>5</sup> Questions 4 to 6 were adapted from MIST Generic Teacher Survey (2010)



*The following questions are about your view about sharing teaching practice.*

10. What do you think about talking with others about your teaching?
11. How important for you is to have these conversations? What do you think you gain?  
Are there any aspects that may not be as beneficial?
12. What are important topics/issues to discuss with your colleagues in the school? In the professional network?

## Appendix 4: Protocol Tool Interview

*Hablemos sobre enseñanza / Let's talk about teaching*  
University of Michigan School of Education  
2014

### Wiki's use observation and perceptions from teachers

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[Ask teacher to enter the wiki. Provide guidance, such as password info, only if needed.]

1. Tell the teacher: "Please, navigate the wiki as you want. I will observe your navigation for some minutes."
2. Observe navigation with attention to:
  - a. Places selected (where does the teacher click on?)
  - b. Path followed when in the wiki.
  - c. Questions and comments made.
3. Interview briefly:
  - a. About the navigation:
    - i. Why did you start on XXXX?
    - ii. What were your thoughts?
  - b. Perceptions about wiki:
    - i. What in the wiki do you like the most? Why?
    - ii. What do you like the least? Why?
  - c. Suggestions:
    - i. What do you think the wiki needs in order to be more useful for YOU?
    - ii. What do you think the wiki needs in order to be more useful for the NETWORK?
    - iii. What changes would you make?

## **Appendix 5: Protocol Follow up Meeting**

*Hablemos sobre enseñanza / Let's talk about teaching*  
University of Michigan School of Education  
2014

### **Follow Up Meeting Protocol**

Follow up meeting with selected participants conducted months after the intervention finalized.

#### **Initial Motivation**

Thank you so much for having me and be willing to talk about the project we implemented last year. The purpose of this conversation is to share views about the project with the perspective that we have now, after almost a year since we worked together. Also, it would be great to talk about your vision on collaboration among teachers to improve your work in teaching.

#### **Questions to guide discussion**

I would like to invite you to begin with overall experiences you might have had around collaboration with others:

- What successful projects have you had where you collaborated with others to improve teaching practice?
  - Who defined the topic or focus of that work?
  - What role you had in that definition, and also on potential adjustments?
  - How did you look for common understanding about that focus?

About the “Let’s Talk about Teaching” project:

- What do you think was the “problem” in which we were focusing?
- Was it useful for you? How was it useful?
- How much interest did you have in the project?
- What did you expect that the project would support? To what extent were those expectations met by the project?

## Appendix 6: Codebook Analysis Interviews

### Analysis of Interview data - Codebook Themes and Categories

Theme	Category	Description	Example
Interaction	Critical stance	Participant expresses a critical view regarding his/her interaction with others.	"Entonces, igual o sea hay beneficios y en términos de que si tú vas igual algo te vas a beneficiar de ello, pero yo siento de que un gran tema en general estas iniciativas son en el tiempo libre de los profes. Por ejemplo, el viernes [día de las reuniones] es mi tarde libre."
	Disposition toward collaboration with colleagues	Perception of participant's inclination to collaborate with others and the value placed on collaboration. This refers to what the participant thinks about his/her disposition to collaborate, not necessarily what he/she does.	"Es un apoyo, entonces yo le puedo recomendar algo o me puede decir esto salió súper bien, como lo puedo hacer en este curso?, ellos decirme lo mismo a mí, entonces eso hace que haya un ambiente mucho más rico, porque uno siente que esta creciendo con el par tu no estas compitiendo"
	Expectations from network	Ideas about what participants would like to find in the network regarding interaction. Involves reasons to participate.	"me gustaría saber, cómo ocurre en los otros colegios, que hacen ellos, que hacen para que los chiquillos trabajen y también para que se motiven, porque es difícil motivar a los chiquillos adolescentes, nada los entretiene."
	Learning from others	Ideas about how participant see him/herself learning from peers through interaction. Involves the perception of value that the participant has.	"Entonces crecemos también desde la parte como pedagogos, no solamente como estudiantes, sin embargo después le va a tocar a otro profe y yo voy a aprender de lo que ese profe me va a entregar a mí."
	School experience	Perception of interaction within their own schools. Refers to how the participant experiences interaction in the workplace	"[sobre compartir materiales? Estrategias?] Es que nunca hemos hablado de eso con los profes, porque en la sala de clases estamos cada uno como en su cuento, pero yo creo que si uno consultara, ellos podrían dar, como manejan esto, si, pero yo nunca he hablado así con los profes"

<b>Network activity</b>	Benefits from participation	Perception of gains from participating in the network's activities.	"Entonces, igual o sea hay beneficios y en términos de que si tú vas igual algo te vas a beneficiar de ello, pero yo siento de que un gran tema en general estas iniciativas son en el tiempo libre de los profes. Por ejemplo, el viernes [día de las reuniones] es mi tarde libre." "
	Collaborating	Description of how collaboration is conducted in network's activities. Descriptions refer to practical examples of collaboration.	"En general era mostrar actividades que a uno le hubieran resultado y explicar por qué creías que te habían resultado"
	Coordinator role	Perceptions about the role of coordinator in network's activities.	"Lo otro es que ella [coordinadora] se consiguió unos libros, que es como una biblioteca para nosotros. Entonces nosotros todos los meses cambiábamos las cosas y eso también era bueno. Traía unas láminas preciosas, de un material perfecto. Entonces esas cosas te ayudan y te motivan."
	Critical stance	Participant expresses a critical view regarding his/her participation in network's activities and different aspects of network's life.	"[Hablando de sus interacciones con colegas y de poder aprovechar la experiencia de otros, pero ponerlo en práctica no solamente pensar que es bueno, si no que también probarlo] Pero si es solamente un intercambio y eso queda allí. La verdad es que es estéril. No te lleva muy lejos."
	Participation	Description of how people participate in network's activities.	"De la Red, que compartimos cosas, porque nadie está obligado a ir. Entonces yo siento que las personas que van allá van porque realmente quieren hacerlo."
<b>Teacher_Context</b>	Critical stance	Participant expresses a critical view of the context where he/she works as teacher.	"Y desde ahí que esta esa, digamos, esa red en este colegio, porque gracias al director también, porque el como te digo siempre nos está empujando, nos está apoyando, ahora no nos apoya económicamente... Que no lo hace, pero nos da apoyo moral, pero tampoco nos apoya con tiempo, tampoco, pero bueno, pero siempre está ahí que yo agradezco igual."
	School experience	Perception of school experience as the context where the teacher works. Perceptions are related to his/her job in the school, not	"nosotros igual tenemos una hora de reunión de departamento. (...) una hora pedagógica, y ahí conversamos que ha pasado con los cursos, en que vamos, si hay que preparar material o por correo, más que nada nosotras nos comunicamos por correo, nosotras las

		necessarily connected to network experience.	tres de inglés. (...) Por ejemplo hay cosas que hemos planteado en las planificaciones y que las cambiamos después, porque resulto otra cosa y salió."
<b>Teacher_expectations</b>	High expectations on students	Perception of expectations about students that are at a high level. Refers to the level of demands the teacher place in students with the purpose of supporting them in learning.	"Uf, harto!, yo de verdad puedo ser inocente en ese sentido, pero me hago muchas expectativas de ellos, muchas, sobre todo que se puedan comunicar, primero, que se puedan comunicar bien, que puedan entablar una conversación. (...) para mí sería ideal llegar un día con un nativo, así como la Mae?, y que ellos conversaran con ella."
	Positive disposition to learn	Participant expectations on how students should react to learning situations.	"Así es que lo principal en la sala de clases es eso, tener la disposición a escuchar a estar atentos, pero mucho la clase si veo a alguien distraído, tratando de llamar la atención como al grupo, para que estén todos pendientes, si no, no hablo."
	Student compliance	Participant expectations on students following rules and complying with school and his/her requests.	"lo que yo espero de ellos es que realicen las actividades que yo les propongo y a mí también me gustaría que ellos aprovecharan mejor el tiempo, en esa parte me frustró y ellos no entienden"
	Student participation and production	Participant expectation of how students should participate and produce in his/her classroom.	"Yo lo que espero, obviamente lo que yo creo que esperamos todos los profes es que participen todos. En el camino me equivoque en utilizar ciertas estrategias en donde pensaba que con eso los iba a hacer trabajar a todos, pero después me daba cuenta que sentían un poco de miedo porque Ay! Me puede tocar?. Entonces ya después lo dejo como un poco más abierto a que solito, ellos si quiere participar entonces que participe. Yo creo que eso es lo principal que tengan la disposición a trabajar con uno, a participar a preguntar a ofrecerse, yo nunca digo, la mayoría del tiempo no digo tú lee esto, si no que pregunto quien me puede ayudar con esto?"
<b>Teacher_selfperception</b>	Active and positive	Participant perception of being an active and positive teacher. This might involve the use of humor or fun activities.	"Siento que una vez que, ya, logro que los chiquillos se rían conmigo, siento que ya facilita el ambiente para comenzar a aprender las cosas que son más difíciles, que lamentablemente nosotros como profesores de Inglés tenemos que enseñarlas, que pasan por las normas gramaticales, por un montón de cosas que."

Demanding	Participant perception of being demanding with students in his/her classroom instruction.	"es como ser exigente pero a la vez relajado, sereno, no relajado en el sentido de no exigir. "
Differentiating self	Participant comments on traits that differentiate his/herself from other teachers.	"Yo he visto profesores en otros colegios que te pasan la guía o revisen la página tanto del libro, y chao! No hay nada. No hay retro, no hay feedback, no hay nada. No hay ninguna cosa. Me entiendes?"
Practice based	Participant describes his/herself using specific aspects of his/her practice in the classroom.	"de la clase y lo que trato de hacer harto es con las "productive skills" harto con las habilidades productivas, harto "writing", harto que escriban y harto "speaking", harto dialog, role play."
Relevant practices	Participant describes his/herself mentioning the practices that are relevant for his/her work as teacher.	"Es importante que los chiquillos trabajen en grupo, porque así el que sabe más va a enseñarle a los otros compañeros y se van corrigiendo entre ellos mismos, pero también a veces es un arma de doble filo, porque se ponen a conversar algunos, pero eso lo tengo que organizar bien"
Teaching philosophy and style	Participant mentions his/her teaching philosophy or influences.	"soy como fan de (risa), fan de Montessori, de María Montessori, me gusta mucho su método, como hacia ella participar a los alumnos, yo no tengo esos métodos acá, son como más para niños, pero esta la idea y la otra es Paulo Freire."
Willingness to improve	Participant describes his/herself as someone who wants to improve and get better in his/her profession.	"Pero bueno, porque quiero mejorar porque siento que necesito tanto, tanto, tanto de repente mis clases se van más a la estructura, de repente no se me ocurre que hacer, como que me falta el asunto de la didáctica, siendo bien objetiva, y bien critica conmigo misma, me falta eso."
Working with students	Participant describes his/herself as in connection to students. Refers to working with them.	"La idea es que las personas aprendan y produzcan, por lo tanto yo trato de crear con los temas que estamos estudiando un espacio para que los chiquillos participen y se conecten entre ellos y conmigo."

## Appendix 7: Proposed strategy for network

### Documento de Trabajo

#### "Aprendizaje docente en redes pedagógicas utilizando registros de práctica: una estrategia para analizar la práctica de enseñanza"

##### *Algunos antecedentes:*

Durante los últimos dos años he tenido el privilegio de conocer las Redes Pedagógicas Locales de profesores de inglés en Chile gracias a la valiosa colaboración de miembros y coordinadores de estas redes. La meta que me ha orientado es comprender las características más relevantes de las redes y el trabajo que realizan para aportar al desarrollo docente. Aunque han existido iniciativas para crear este tipo de asociación entre profesores que enseñan en diferentes áreas del aprendizaje<sup>6</sup>, las redes de inglés son un fenómeno particular en el contexto chileno. Estas redes se distinguen por su enfoque en una disciplina específica —el inglés como lengua extranjera— y porque reciben apoyo del Ministerio de Educación a través del Programa Inglés Abre Puertas. Por su carácter distintivo a nivel nacional, es relevante conocer de qué manera se han desarrollado las redes de inglés y cómo interactúan los profesores que participan de ellas para producir colaboración y desarrollarse profesionalmente.

A partir de un trabajo exploratorio realizado el año 2011 con un grupo de redes pedagógicas en la Región Metropolitana pude identificar que las redes de inglés ofrecen importantes espacios para construir comunidad y conectarse con otros profesores del subsector en una localidad determinada. En las redes visitadas, observé que los profesores compartían recursos y estrategias para la enseñanza del inglés, organizaban actividades orientadas a mejorar las oportunidades de los estudiantes para practicar el idioma inglés, y se apoyaban mutuamente en los desafíos de su trabajo. Conocí también de los enormes logros alcanzados por las redes, entre los que destacan las actividades que involucran a los estudiantes.

La investigación sobre redes profesionales y comunidades de aprendizaje docente ha mostrado que los profesores que participan en redes pedagógicas se benefician de la interacción con otros colegas en actividades que están orientadas a aprender sobre la práctica de enseñanza. Esto sucede especialmente cuando los profesores tienen oportunidad de conversar sobre sus ideas acerca de la disciplina que enseñan, sus estudiantes, y el trabajo en el aula<sup>7</sup>. Esta es una meta que las redes en general buscan alcanzar, y en la que necesitan enfocarse para ser aún más efectivas en crear oportunidades para aprender colectivamente. Otro aspecto que la investigación ha identificado en las comunidades de profesores que se orientan al aprendizaje docente es

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<sup>6</sup> Fuentealba, R., and A. Galaz. "La Reflexión Como Recurso Para La Mejora De Las Prácticas Docentes En Servicio: El Caso De Las Redes Pedagógicas Locales En Chile." En *Prácticas Reflexivas Para La Formación Profesional Docente: ¿Qué Las Hace Eficaces?*, 141–168. UCSH. Santiago, Chile, 2008.

<sup>7</sup> Horn, Ilana Seidel. "Teaching Replays, Teaching Rehearsals, and Re-Visions of Practice: Learning from Colleagues in a Mathematics Teacher Community." *Teachers College Record* 112, no. 1 (2010): 225.



la práctica de conversar sobre como cada uno enseña en un análisis colaborativo de la práctica. Por ejemplo, los profesores en redes pedagógicas pueden aprender a través de la práctica de hacer público su trabajo en la red, siendo ayudados por sus pares en el reconocimiento de los aspectos que pueden ser mejorados o potenciados<sup>8</sup>. Este foco en la práctica de la enseñanza y el desarrollo de conversaciones puede contribuir en acoger a los participantes y producir un mejor entendimiento sobre la enseñanza del inglés, incrementando las oportunidades para el aprendizaje en los miembros de la red. A través de la reflexión sobre la enseñanza, la discusión con los pares y el esfuerzo por desentrañar las complejidades del aprendizaje de los estudiantes, los profesores pueden ser más efectivos en aprender sobre su propia práctica de enseñanza.

***Propuesta de estrategia:***

Inicialmente, quisiera proponer una estrategia para el trabajo de la red pedagógica que ofrezca oportunidades efectivas para el análisis de la práctica de enseñanza. Esta propuesta involucraría actividades en las reuniones presenciales y otras en forma virtual en un ambiente en línea que sería provisto como parte de la estrategia.

El objetivo es que a través de la implementación de la estrategia, los miembros de la red puedan involucrarse en actividades orientadas al análisis de la práctica de enseñanza a través de conversaciones mediadas por registros de práctica –los registros de práctica son representaciones concretas de la enseñanza, como por ejemplo, videos de actividades en aula, descripciones detalladas de una estrategia, trabajos de los estudiantes, o bitácoras de los profesores. La idea es ofrecerles una primera versión de esta estrategia, y trabajar juntos en su desarrollo de manera que sea útil y significativa para alcanzar las metas de la red.

La estrategia buscaría apoyar a la red creando oportunidades para:

- a) orientar las conversaciones hacia las prácticas de enseñanza, generando ideas sobre la enseñanza en los participantes. Algunas fuentes para estas ideas pueden ser los métodos de enseñanza del inglés como lengua extranjera, la filosofía de enseñanza que tienen los miembros de la red, creencias sobre los estudiantes, el rol de los profesores y los estudiantes en el proceso de enseñar y aprender, entre otras,
- b) enfocarse en características particulares de la enseñanza mediante el uso de “registros de práctica” ofrecidos por profesores de la red y/u otros,
- c) participar en un ambiente virtual donde los miembros de la red puedan interactuar en el tiempo entre reuniones, y acceder a los registros de práctica,
- d) colaborar con los pares dentro de la red en la reflexión colectiva para la comprensión de la práctica de enseñanza. Por ejemplo, caracterizar la orientación pedagógica de la práctica, identificar y contextualizar sus componentes, explicar cómo se desarrolla una estrategia de enseñanza de manera que otros puedan comprenderla, y finalmente

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<sup>8</sup> Lieberman, Ann, and Diane R. Wood. “From Network Learning to Classroom Teaching.” *Journal of Educational Change* 3, no. 3 (2002): 315.

e) involucrarse en el proceso de evaluar y rediseñar la estrategia.



**Modelo inicial de la estrategia para el análisis de la práctica de enseñanza en la Red Pedagógica de Inglés.**

Como muestra el diagrama, el punto de partida sería una conversación sobre la práctica de enseñanza entre los profesores de la red enfocada en las características de esa práctica. Por ejemplo, las fases de preparación, desarrollo y evaluación de las clases, la toma de decisiones en estas distintas fases, la interacción con los estudiantes, la interacción de los estudiantes con los contenidos, entre otras. Para ayudar a enfocarse en la práctica, se utilizarían los registros de práctica. La revisión y análisis de estos registros estaría orientada a la generación colectiva de “ideas sobre la enseñanza” que los miembros de la red irían desarrollando mediante la clarificación de supuestos, y la discusión de perspectivas sobre la intersección entre el conocimiento sobre la asignatura, los estudiantes y el contexto. En suma, se trataría de interactuar con otros miembros de la red para definir qué entienden sobre la práctica que están analizando, construyendo interpretaciones a medida que evolucionan en la comprensión de lo que significa enseñar inglés en los contextos en que cada uno trabaja.

Los ambientes principales para el análisis colectivo de la práctica serían el ambiente virtual en línea – muy probablemente un sitio web tipo wiki que los miembros de la red como grupo podrían modificar y enriquecer – y las reuniones mensuales.

Una característica particular de esta propuesta es que se orienta a desarrollar la comprensión sobre como implementar esta estrategia de manera que eventualmente pueda ser de utilidad para otras redes pedagógicas de profesores. El desarrollo de esta comprensión involucra la participación directa de los miembros de la red en el diseño colaborativo de la estrategia. Esto es algo que realizaremos en conjunto y que buscaremos que implique el menor esfuerzo extra posible para los miembros de la red. La participación de cada miembro es clave para desarrollar una estrategia que responda a las necesidades de la red en cuanto al aprendizaje sobre la práctica de enseñanza, y que provea herramientas efectivas para el análisis de la enseñanza a través del uso de registros

de práctica. La activa participación de los miembros de la red desde el principio de la implementación enfatiza la relevancia de que los miembros de la red y yo como investigadora podamos compartir la comprensión sobre los desafíos que la estrategia intenta abordar.

***Propuesta de actividades:***

En términos generales las actividades se concentrarían en ciclos de conversación sobre la práctica de enseñanza en los que los miembros de la red se involucrarían en forma regular durante un período de tiempo a definir. Las conversaciones tendrían lugar tanto en forma presencial en las reuniones mensuales, como virtualmente en el sitio web.

En el sitio web habría un espacio para comentarios individuales, y medios para apoyar la interacción entre los miembros de la red en una conversación estilo foro. Las conversaciones se centrarían inicialmente en las prácticas representadas en los registros de práctica que yo, y eventualmente los miembros de la red, proveerían. El plan es proveer un diseño inicial del sitio web para iniciar la conversación, pero los miembros de la red estarían invitados a examinar el diseño y sugerir cambios que contribuyan a mejorar las actividades en el ambiente virtual permanentemente. En las reuniones presenciales los miembros de la red participarían en la puesta en común de la experiencia virtual a través de una reflexión que sirva para profundizar la conversación, generar “ideas sobre la enseñanza” e interpretaciones sobre lo que significa enseñar inglés como lengua extranjera en sus contextos particulares.

## Appendix 8: Letter about project for recruitment

Letter about the Project prepared by coordinator and researcher

Marzo, 2013

Estimados miembros de la Red de Inglés XXXX:

Una de las formas reconocidas para la mejora sostenida de la práctica pedagógica es la investigación sobre las prácticas efectivas. Sin embargo, mucha de esa investigación se realiza sin incorporar la mirada de los docentes de aula que son quienes pueden aportar una comprensión focalizada de los problemas y sus soluciones. Como señala John Dewey (1904/1965), dicha comprensión se puede alcanzar cuando los docentes no sólo practican la enseñanza, si no que también la estudian.

Con la idea de desarrollar una investigación que involucre la perspectiva docente, nos contactó Florencia Gómez Z., de la University of Michigan quien está realizando estudios de doctorado sobre las redes pedagógicas del PIAP. Ella nos ha propuesto un proyecto para desarrollar conversaciones sobre la práctica pedagógica que permitan comprender mejor la enseñanza de nuestra asignatura mediante la colaboración en la red. En nuestra primera reunión del mes de marzo, Florencia presentará el proyecto considerando justificación, objetivos, actividades de implementación e investigación, compromisos y beneficios para los participantes.

Como un adelanto de lo que será compartido en la primera reunión les cuento que el proyecto tiene por objetivo desarrollar una *estrategia de andamiaje* para el estudio de la práctica pedagógica con los miembros de la Red XXXXX. Dicha estrategia estará dirigida a apoyar conversaciones sobre la práctica focalizándose en la experiencia de enseñanza y aprendizaje del inglés como lengua extranjera en aula. La propuesta se centra en el uso de un sitio web exclusivo para la red donde se publicarán “documentos de práctica” como videos o descripciones de actividades de enseñanza, motivando la reflexión y discusión de ideas con los pares, que luego podrían continuar en las reuniones presenciales de la red.

El proyecto se desarrollará durante el año académico 2013, considerando tiempo de las reuniones mensuales de la red y tiempo individual de cada profesor entre reuniones para participar en el sitio web.

Los miembros de la red contarán con apoyo presencial y remoto durante el desarrollo del proyecto para utilizar el sitio web y discutir cambios a la estrategia. También recibirán material de apoyo para guiar la reflexión de la práctica pedagógica, y serán retribuidos por su participación y tiempo dedicado al proyecto. Con su participación, la red contribuirá en el desarrollo de nuevo conocimiento sobre las potencialidades del trabajo colaborativo centrado en la práctica entre docentes que participan en redes pedagógicas de inglés.

El proyecto es parte del trabajo de tesis doctoral de Florencia y cuenta con la aprobación y supervisión de la University of Michigan. Por las características propias de este trabajo, ella deberá recolectar información sobre los participantes y su trabajo, realizar registros de audio y video de las reuniones, y almacenar las interacciones entre

participantes en el sitio web. Todos los registros serán tratados con absoluta confidencialidad.

Desde ya, muchísimas gracias por su interés y participación.

## Appendix 9: Project Presentation for recruitment

### Project Presentation – Let's Talk about Teaching



**Why talk about teaching?**

Because it helps...  
to focus attention in what we do in teaching,  
to notice needs for improvement and good practices,  
and to learn from others in an ongoing basis.  
Also, and importantly, to know our students better.



**But this is hard to achieve!**

Yes. It needs support.

## How to support these conversations to be generative?

- Active participation and interaction with colleagues.
- Content related to subject matter classroom practice.
- Focus on student learning.
- Use of different means for interaction that can enhance opportunities to gather and share.



## So... what to do?



- Strategy to support conversations about English as foreign language teaching practice

→ *scaffolding* ←

- Use of a website exclusive for the network with access to “artifacts of practice”: videos, detailed descriptions.
- Conversations in face-to-face meetings.
- Participation in a process of co-design.

## What does this actually look like?

- Participate in the website
- Respond a survey
- Meet individually
- Welcome me in your meetings
- Discuss improvements for the scaffolds



## What do you get?

### “Large picture”

- Opportunity to learn from colleagues in a potentially new way.
- Website exclusive for the network to be in contact and interact between the meetings.
- To contribute in producing knowledge about English networks in Chile.

### “Close-up”

- Co-design a tool that can be useful to your network and other networks.
- Access to resources for English teaching and learning.

## Next steps

- Individual email check in:
  - Say hello! and answer any other questions
  - Send the survey link
  - Scheduling individual meetings
- I am coming to your April’s network meeting.



## Two ideas...

Teachers voices are part of the discussion about supporting teaching practice.

Teachers who not only practice teaching,  
but also study teaching.

~ John Dewey

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