

Inside a School-University Partnership:  
Participation in a Community of Practice as Professional Growth





## AN ABSTRACT OF THE DISSERTATION OF

SueAnn I. Bottoms for the degree of Doctor of Philosophy in Science Education  
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Research suggests that long-term participation in professional development is critical in helping teachers meet the increasing demands of reform efforts and changing practice (Gallucci, 2003; Darling-Hammond, 1995; Little, 1993).

Understanding the influence that participation in a community of teachers as a community of practice may have on teachers' professional growth requires a deeper understanding of those aspects of teacher community that encourage or discourage participation. This research examines teachers' perceptions as to why they participate in a community of practice. It also addresses what these perceptions suggest about the potential resources that participation in a community of practice provide in support of professional growth.

This study utilizes community of practice as theoretical framework because it encourages thought about learning as participation rather than simply the acquisition of knowledge or skills (Wenger, 1999). This mid-level analysis focuses on the actions, artifacts, tools, stories, events, and discourse of the participants in a given context. It is a critical case study using a phenomenological perspective (Patton, 2005) to understand the essence of the experience of participation from the perspective of the participants themselves.

Analysis of participants' responses indicates that from their perspective, participation in a community of teachers as community of practice through a school-university partnership constitutes a resource for professional growth. Teachers in this study describe their participation in terms of leadership, disengagement, student-centeredness, pedagogy and pedagogical content

knowledge, financial and material resources, professional development, collegial interactions and relationships, and shared personal practice. Analysis of participation is characterized by reason(s) for initial participation, for continuing or discontinuing participation, in terms of collegial interactions and relationships, and by changes in participation or experience over time.

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Inside a School-University Partnership: Participation in a Community of Practice  
as Professional Growth

by  
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I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

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SueAnn I Bottoms, Author

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## CHAPTER I

### THE PROBLEM

#### **Introduction**

A decade of education reform calls for teachers to have opportunities to learn and to engage in collaborative processes similar to those that teachers are expected to provide for their students. These changing expectations along with the growing recognition that traditional methods of professional development have had mixed results in creating these opportunities has led to a rethinking and re-conceptualizing of what constitutes effective professional development for teachers. Arguments for change in professional development are supported by sociocultural learning theories that look at both the context and the content of the learning.

Thompson and Zeuli (1999) describe a shifting focus, one that favors the implementation of small learning communities in science and mathematics classrooms. They suggest that such a shift represents the sociocultural constructivist emphasis of reform efforts in science and mathematics education. Thompson and Zeuli argue that what is missing in this refocusing is a consistent alignment with the in classroom expectations for teaching and learning as well as the professional development generally available to teachers. A study by Avery and Carlsen (2001) found that teachers in a community of practice who chose to teach science more as a socially constructed enterprise *drew on the membership in a community of practice for support, ideas, and curricular innovations* (emphasis added). In another study Howe and Stubbs (1996) suggest that bringing science teachers and scientists together in a professional development model that uses a sociocultural approach gives teachers a sense of empowerment as well as tools and opportunities to construct knowledge and make meaning in a social context. While this model offers promise, it requires further examination in order to address how these types of experiences impact learning and practice in the classroom. Stein, Silver, and Smith (1998) suggest that this sociocultural structure offers not only

multiple sources of teacher learning but ways to move the focus from the individual responsibility of teachers to the community of teachers responsible for student learning.

This sociocultural perspective represents a move away from the individual view of learning and toward one that takes into account the interactions of people within a ‘community of practice’, where the act of participating and interacting is practically equivalent to the construction of knowledge and learning in practice (Glazer & Hannafin, 2006; Gallucci, 2003; Little, 2003; Barab, Barnett, & Squire, 2002; Hansman, Wilson, & Arthur, 2002; Knight, 2002; Ball & Cohen, 1999; Lave & Wenger, 1991; Wenger, 1998).

More generally, my use of the concept of practice does *not* fall on one side of traditional dichotomies that divide acting from knowing, manual from mental, concrete from abstract. The process of engaging in practice always involves the whole person, both acting and knowing at once. In practice, so-called manual activity is not thoughtless, and mental activity is not disembodied. And neither is the concrete solidly self-evident, nor the abstract transcendently general; rather both gain their meanings within the perspectives of specific practices and can thus obtain a multiplicity of interpretations. (Wenger, 1998, pp. 47-48).

Now that professional development for teachers has begun to take the communities of practice point of view seriously, research must also shift to understand the influence of participation in a community of practice on teacher professional growth. This requires a deeper look at teachers who participate in such communities and how they describe their experience of participation. This study explores the potential for the professional development of a community of teachers engaged in a community of practice one that is situated in a school-university partnership built upon teacher participation, collegial interaction and collaboration. This study has as its foundation a sociocultural learning theory of community of practice as developed by Etienne Wenger and Jean Lave along with empirical studies of community of practice, teacher learning communities, professional development, and school-university partnerships.

### From Acquisition to Participation

Educational reform efforts over the past two decades have required new ways of thinking about teaching and learning, a move from an acquisition of knowledge view to one of participation as learning and knowledge in practice (Barab & Duffy, 1998). The historical and dominant training model of teachers' professional development has been acquisition; as such, this has focused primarily on expanding individual repertoires. Increasingly, this is not seen as adequate to address more recent views of teaching and learning (Clarke & Hollingsworth, 2002; Ball & Cohen, 1999; Hawley & Valli, 1999; Wilson & Berne, 1999; Bell & Gilbert, 1994). The content and process of training as acquisition communicates a view of teaching that is at odds with current reform efforts (Darling-Hammond & McLaughlin, 1999). Little (1993) describes most professional development as inadequate to meet the increasing demands placed on teachers and not at all in line with current views on teaching and learning.

Much staff development or in-service communicates a relatively impoverished view of teaching, and teacher development. Compared with the complexity, subtlety, and uncertainty of the classroom, professional development is often a remarkably low-intensity enterprise. It requires little in the way of intellectual struggle or emotional engagement, and takes only superficial account of teachers' histories or circumstances [*sic*] (Little, 1993, p.148).

There are many challenges involved when moving from skills training to embedding opportunities to learn in the routine of the teacher's work day and year (Hausman & Goldring, 2001). All require changes in the structure and culture of the institution as well as the adoption of an alternative view of the teacher as an intellectual not a technician (Smylie, 1995; Little, 1993).

These alternatives to the training model embody assumptions about teacher learning and the transformation of schooling that are much more complex than training. They demand equally complex contexts of teaching, placing demands on teachers to not only integrate content but provide students with opportunities to learn that many teachers may not have experienced themselves (Loucks-Horsley, Love, Stiles, Mundry, & Hewitt, 2003; Darling-Hammond, 1997; Little, 1993).



From this perspective the traditional view of professional development as training for specific skills needs to be replaced with the idea of continuous professional growth and lifelong learning (Fickel, 2002; National Research Council, 1996). Of course, not all professional development is created equal Knight (2002) views continuing professional development as requiring different levels of knowing. As an individual develops in a profession s/he will require different knowledge at different points in his/her career. Cochran-Smith and Lytle's (1999) conceptual framework for teacher learning ask questions about what is presently known about how teachers learn, what assumptions are made about the nature of teaching as well as the assumptions about the structures that support teacher learning. Of particular interest to my study is Cochran-Smith and Lytle's conceptualization of the 'knowledge-of-practice' concept. This idea examines teacher learning not only across the professional continuum but within the context of teacher interactions in teacher networks or other collaborative efforts where teachers come together to study their practice as well.

Research in the area of teacher professional growth and learning suggests that teaching and learning are strengthened when teachers are able to come together to share and collectively question their practice. Clarke and Hollingsworth (2002) describe a model of professional growth that emphasizes learning through professional activities and the situated and personal nature of teaching practice and teacher growth. Their work suggests that teachers should have opportunities to study and learn together. Ball and Cohen (1999) call for a *pedagogy of professional development*, (emphasis added) learning in and from practice which will then build upon what teachers need to do in relation to both the materials of their practice and the discourse of their practice as it supports their learning. Darling-Hammond and McLaughlin (1999) suggest that a move toward viewing teaching as a learning profession requires *both the unlearning of old practices as well as the learning of new practices* (emphasis added) with a focus on the connections between student learning and teaching. Wilson and Berne's (1999) review of research on the ways in which teachers acquire professional knowledge found three recurring themes about what teachers need: opportunities to talk about

and engage in subject matter; opportunities to talk about student learning; and opportunities to talk about teaching. In a three year study on teacher development Bell and Gilbert (1994) describe professional learning as consisting of three overlapping areas; professional, personal, and social development. When examined independently, each of these studies makes a case for change in the way teaching and learning are viewed and the ways in which ongoing professional development can and should be better designed to meet the needs of teachers' continuing professional growth. Collectively, this work implies a direct relationship between teacher learning in communities and the efforts to advance some of the changes proposed by school and educational reforms.

### Communities of Practice

Historically the concept of communities of practice came from anthropological research. In recent years a small but growing body of research looked at the concept in educationally designed settings (Glazer & Hannafin, 2006; Gallucci, 2003; Little, 2003, 2002; Barab, Barnett, & Squire, 2002; Clarke & Hollingsworth, 2002; Knight, 2002; Avery & Carlsen, 2001; Hansman, Wilson, & Arthur, 2001; Barab & Duffy, 1999; Stein, Silver, & Smith, 1998; Howe & Stubbs, 1996). This resulting shift in research—from looking primarily at the individual context of learning to the community—focuses attention on what it means to learn through participation within a community. It makes a strong case for looking at the potential of communities of practice as an alternative form of professional development for teachers. Glazer and Hannafin (2006) suggest that the reciprocal interactions of teachers within a community of practice may promote professional development and collaborative practice. In their study reciprocal interaction, is presented as an example of mutual engagement in a community of practice as defined by Wenger (1998). This research suggests that the educational potential of communities of practice lies in the opportunities for professional growth and development of the teachers who participate (Clarke & Hollingsworth, 2002; Little, 2002). Several other studies suggest that in addition to providing opportunities for learning, participation in communities of practice can

facilitate teachers' responses to reform-based initiative (Gallucci, 2003; Little, 2003). Avery and Carlsen (2001) argue that membership and identity play a role in teachers' willingness to adopt innovative curricular practices and to teach science as a social activity. Teaching and learning science as a social activity, Howe and Stubbs (1996) argue support collaborative learning and encourage new ways of thinking. This shift from the individual context to a sociocultural context emphasizes interactions among learners and focuses on the context within which these interactions take place (Hansman, Wilson, & Arthur, 2001).

How do people become members of a particular community of practice over time? Wenger and Lave (1991) use the concept of legitimate peripheral participation to describe the role of learners as they become part of a community of practice. People join different communities at different times in their professional lives. As that happens, they become engaged and learn about some particular phenomenon or aspect of the practice of the community. Through participation over time they become more and more involved with the community, learning how to be a part of the community through their participation. Apprenticeship is the primary metaphor for learning within the communities of practice literature (Rogoff, 1991). Since apprenticeship of new members is such a central aspect of any community of practice, learning can be defined as a part of the sociocultural process (or function) of the community. This is why Wenger (1998) begins the discussion of community of practice with a theory of learning. Learning is situated in the community of practice and is characterized by shifts of participation within the changing community of practice; in fact, learning and practice are seen as interdependent.

'Legitimate peripheral participation' provides a way to speak about the relations between newcomers and old-timers, and about the activities, identities, artifacts, and communities of knowledge and practice. It concerns the process by which newcomers become a part of a community of practice. A person's intentions to learn are engaged and the meaning of learning is configured through the process of becoming a full participant in a sociocultural practice. (Wenger & Lave, 1991, p. 29)

Wenger and Lave's theory of participation argues that the community serves as both content and context for participation by providing a structure to support participation. In later work Wenger and Snyder (2002) describe the characteristics of this model. In Figure 1, the structural components of communities of practice are compared to the structural components of the community in which the teachers in this study participate. The model describes the domain of the practice: where and under what conditions the practice takes place; the community and the structures that support the interactions; and the practice, resources, tools, and ideas around which the members of the community interact.

### **From Wenger and Snyder**

*Domain* refers to a domain of knowledge that both invites participation and creates a common ground and sense of identity.

*Community* is the structure that fosters interactions and relationships with respect and trust as its foundation.

*Practice* is the tools, ideas, resources, stories, and artifacts that the members of the community share.

### **From Current Study**

*Domain* provides academic enrichment and access to higher education to underserved and underrepresented students in grades 4-12 focusing on science, technology, engineering, and mathematics.

*Community* provides the opportunity four times a year to interact and engage in the elements of the domain.

*Practice* is the curriculum, activities, resources, pedagogy, pedagogical content knowledge, and conversations around the interactions.

**Figure 1. Communities of Practice: A Structural Model. Adapted from Wenger and Snyder, 2002**

Wenger (1998) suggests that community and practice come together through mutual engagement, a sense of joint enterprise, and a shared repertoire. It is through the relationship of these three dimensions of practice that a community begins to take on coherence. Mutual engagement is defined as whatever it is that brings the group together; that is, the work that is done through this mutual

engagement (p. 73). This shared practice creates diverse and complex relationships and interactions among group members (p. 77). Joint enterprise is negotiated through mutual engagement; it is the process of this negotiation that defines the work of the community of practice (p. 77-78). The conditions, resources, and demands of the group shape and produce the practice of the group as well (p. 80). Shared repertoire refers to both tangible and intangible shared resources of the community. These are the words, conversations, routines, artifacts, and documents that are created through mutual engagement and joint enterprise (p. 83).

The role and function of participation is critical to fully understanding the concept of community of practice and is a primary focus of this study. Wenger (1998) suggests that participation implies both action and connection.

I will use the term participation to describe the social experience of living in the world in terms of membership in social communities and active involvement in social enterprises. Participation in this sense is both personal and social. It is a complex process that combines doing, talking, thinking, and belonging. It involves the whole person, including our bodies, minds, emotions, and social relations (Wenger, 1998, pp. 55-56).

Learning as participation in a community of practice represents shared personal practice. It offers the opportunity for collegial interactions and collaboration, and opens one practice up to others. It is not without its challenges and risks. It requires participants to interact with colleagues in new and different ways.

Forming a professional community requires teachers to engage in both intellectual and social work, new ways of thinking and reasoning collectively as well as new forms of interacting interpersonally. Learning from colleagues requires both a shift in perspective and the ability to listen hard to other adults, especially as these adults struggle to formulate thoughts in response to challenging intellectual content (Grossman, et al., 2001, p. 973).

### Community of Teachers as Community of Practice

#### School-University Partnerships

Communities of teachers who come together through a community of practice are thought to be most effective if they are both a part of teachers' regular

practice and located within the school setting (Glazer & Hannafin, 2006; Little, 2003; Grossman, et al., 2003). However, others argue that the resources and structure to support these communities are not always available within the culture of a school system (Hausman & Goldring, 2001; Cochran-Smith & Lytle, 1999; Lieberman 1995). Research on the function that teacher networks can have in facilitating educational reform has been advocated as an alternative to address the current inability to sustain communities of practice within schools (McDonald & Klein, 2003; Lieberman & Grolnick, 1996). In light of the numerous constraints on teacher communities within schools a search for other teacher network options suggests the possibilities of school-university partnerships. Several studies on school-university partnerships (Borthwick, et al., 2003; Bainer, 1997; Borthwick, 1995) indicate that such partnerships can provide the resources, structure, and opportunities for teachers to engage in a community of practice. Comparisons of the characteristics of communities of practice, communities of teachers and school-university partnerships support this argument and build a case for situating this study on teachers' participation in a community of practice within a school-university partnership.

Table 2 provides a comparison of some of the characteristics of school-university partnerships, with characteristics of communities of practice and teacher communities. The table was adapted from *The Many Faces of School-University Partnerships: Characteristics of School-University Partnerships* (Borthwick, 2001); literature on communities of practice (Gallucci, 2003; Wenger, 1998; Lave and Wenger, 1996); and empirical studies on teacher community (Little, 2003; Grossman et al., 2001; Huffman, 2001; Keats, Whelan, Huber, Rose, Davies, & Clandinin, 2001; Keiny, 2001; Manoucheri, 2001; Royal & Rossi, 2001; Jenlink & Kinnucan-Welsch, 1999; Dunn & Honts, 1998; Lasiter, 1996; Zahorik, 1987).

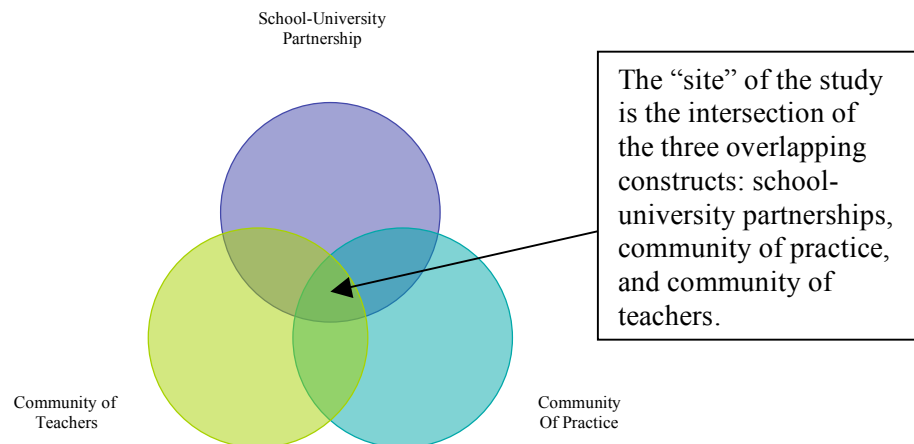
**Table 1: Comparison of Characteristics of Community of Practice, Community of Teachers, and School-University Partnerships**

<b>School-University Partnership</b>	<b>Community of Practice</b>	<b>Community of Teachers</b>
Focus: Goals, context, and outcomes.	Mutual Engagement: Engaged diversity, doing things together, relationships, social complexities, community maintenance.	Individual Development: Content, pedagogical content knowledge, college credit, continuing professional development, curriculum, resources, stipend.
Members: General characteristics, commitment, roles and responsibilities.	Joint Enterprise: Negotiated enterprise, mutual accountability, interpretations, rhythm, local responses.	Collegial Interactions: Caring and connecting, conversational space, recognition and value of teachers' personal practical knowledge, talking about practice, teaching, students, situating learning in practice and relationships.
Funding and Other Material Resources  Connections and sharing	Shared Repertoire: Styles, stories, artifacts, actions, tools, discourse, historical events, and concepts.	Collective Capacity: Shared vision and values, a voice, collective learning and application, sense of shared responsibility, student centered outcomes, shared personal practice, shared leadership, social and cultural community, supportive conditions, inclusivity.
Communication: Decision-making and action planning, group dynamics, inquiry into partnership process.		Change in Practice: Conceptual change, change in strategies or methodology, perceived need for change, context-specific.
Stages	Stages	Stages

A comparison of the characteristics of school-university partnerships, communities of practice and communities of teachers shows an overlapping of a number of the identifying characteristics. These include a common focus, shared practice and opportunity to interact and collaborate. Such connecting threads

suggest that the similarities are close enough to be able to view them as interrelated and supporting structures. It is the emergence of these overlapping characteristics and similar structures that offers support to the decision to locate this study on teacher participation in a community of teachers as a community of practice within a school-university partnership.

The focus of this study is not site—or place—specific. Instead, it focuses on times when teachers have the opportunity to interact and collaborate. Figure 2, page 10 illustrates the “site” of the study. It is the intersection in time where a community of teachers in a school-university partnership comes together as a community of practice. This is a community that is distributed over time and geographical distance and physically convenes four times a year; the interactions and experiences from these interactions are the subject of this study.



**Figure 2: Locating the Study: An Intersection between Three Constructs**

### Teacher Community

As described in numerous studies (Huffman & Jacobsen, 2003; Little, 2003, 2001; McDonald & Klein, 2003; Talbert & McLaughlin, 2002; Grossman, Wineburg, & Woolworth, 2001, 2000; Lieberman & Grolnick, 1996) teacher community provides an ongoing structure and support for teacher learning.



Attributes of professional communities including collegial interactions are seen as a resource of and for the community. Wilson and Berne (1999) indicate that the ways in which these interactions represent a resource for teacher learning and change in practice are not clearly identified. Little (2003) further pursues this issue by examining the teacher learning opportunities and dynamics of professional practice evident in teacher-led groups.

A review of research on teacher community provides a growing description of the construct. In these studies, teacher communities are characterized as having developmental stages (Lasiter, 1996) i.e., they evolve from immature to mature leaning communities (Grossman, et al., 2001; Huffman, 2001). While not necessarily linear, these stages appear to share some common developmental characteristics (Lasiter, 1996). Initially, the teacher groups in these studies are described as supportive, providing a structure that includes time and opportunity to work with colleagues. The second stage focuses more on practice. In the third level, the teachers began to deal with more fundamental questions about teaching and learning such as how students learn (Dunne & Honts, 1998). Grossman, Wineburg, and Woolworth (2001) developed a model of the formation of teacher professional community that can serve as an exemplar of community formation. Their model describes beginning, evolving, and mature stages of teacher communities with four general characteristics: the formation of group identity and norms of interaction; navigating conflicts; negotiating the essential tensions or purpose of the community; and communal responsibility for individual growth, similar to the description proved by Dunne and Honts (1998). Additional factors that seem to contribute to sustaining teacher communities are shared and supportive leadership, shared values and vision, collective learning and application, student-centered, supportive conditions, and shared personal practice (Huffman, 2001).

The growing body of work in the area of teacher community has made considerable progress both in the conceptualization and measurement of collegial relationships and interactions. In addition, much work has been done to characterize the attributes of professional communities as well as indicate the

potential role of collegial interaction in teacher professional growth. However little of this research has focused on the specific interactions and dynamics by which a professional community constitutes a resource for teacher learning and innovation in teaching practice (Little, 2003; Wilson & Berne, 1999). Little (2003) further states that, if a teacher community supports professional development, then such development or change should be evident in the interactions teachers have with each other and in the documents produced as a result of these interactions, what she refers to as the “intellectual, social, and material resources” (Little, 2003) of a professional community.

Although Little (2003, 1990) supports many of the claims of the positive effects of collegial interaction and collaboration she cautions against embracing this concept without more clearly defining what the collegial interaction are and what teachers actually gain from these interactions. Specifically, she urges awareness of the context of the interactions. Are teachers sharing their stories? Are they asking for assistance or giving aid? Are they sharing to open up their practices to others? Or are they collaborating? Each of these questions suggests a different motivation for the teacher and frames the potential effects of the interaction. Little stresses that any claims of the benefits of collegial interactions need to be supported by locating and specifying the resources within the communities that provide these benefits. Stein, Silver, and Smith (1998) describe the isolationism and conservative nature of the teaching profession, values that do not invite opening up one’s practice for view or critique. These studies suggest that there is definitely a need for more rigorous research in the area of teacher communities and communities of practice in order to more clearly understand the potential benefits of these types of professional communities.

### Summary

A community of practice model of professional development provides a useful lens with which to examine teachers’ participation in a partnership or program. It also offers a way to look at their perceptions of why they participate because it allows the researcher to focus on the interactions and practice as

characterized by the teacher. Examining teachers' perceptions within this context can provide insight into factors that encourage or discourage teacher participation in a community of practice. Such a study provides teachers with a voice in the profession and an opportunity to advocate for what they see as important and effective in supporting their professional growth and development. It adds to the call of educational reform efforts to change both the opportunities and structures that support the ongoing professional growth of teachers.

### **Statement of the Problem**

Teacher community is seen by some researchers as a way to overcome the isolation and autonomy of the profession as well as a means for teachers to examine and potentially change their practice (Knight, 2002). Others suggest that teacher community is more of an optimistic premise, one that requires more rigorous study before explicit benefits and potential can be linked to these concepts and practices (Little, 1991). This study investigates teachers' participation in a teacher community as community of practice through a long-term, school-university partnership. Specifically, this study examines teachers' reasons for initial and ongoing participation. Anecdotal accounts from teachers in the pilot phase of this study suggest that participation in this partnership provides a collegial community and professional development opportunities that enhance and support their professional growth.

Research suggests that long-term participation in professional development is critical in helping teachers meet the increasing demands of reform efforts and changing practice (Gallucci, 2003; Darling-Hammond, 1995; Little, 1993). Understanding the influence that participation in a community of teachers as a community of practice may have on teachers' professional growth requires a deeper understanding of those aspects of teacher community that encourage or discourage participation. This research examines teachers' perceptions of why they participate in a teacher community and what these perceptions suggest about the

potential resources that participation in a community of practice provides in support of professional growth.

This study was guided by four questions:

1. What are the teachers' initial reason(s) for participating?
2. What are the factors that the teachers identify that support their continuing participation? That discourage their continuing participation?
3. How do teachers describe their interactions and relationships with other participants?
4. How do teachers describe their experience or participation over time?

### **Significance of Study**

Studies that have looked at communities of practice and communities of teachers argue that the benefit of these communities would be most effective if implemented within school settings (McDonald & Klein, 2003). They also acknowledge that inherent problems with school structure and culture have neither supported nor sustained these efforts (Bainer, 1997). School-university partnerships can provide the financial and material resources to both support and sustain professional communities of practice for teachers (Borthwick, et al., 2003). These partnerships offer opportunities for teachers to engage in a community of practice beyond what most school districts are able to provide. This examination of teachers' participation in a community of practice through a school-university partnership provides some insight into the potential benefits this participation might provide for teachers in supporting their continuing professional growth and development.

Some researchers see teacher community as a way to overcome the isolation and autonomy (Little, 1990) of the profession and as a way for teachers to examine and thus potentially change their practice. Research also suggests that long-term participation in professional development is critically important, helping teachers meet the increasing demands of reform efforts, changing practice, and

address student learning issues (Loucks-Horsley, et al., 2003). Other researchers (Ball & Cohen, 1999; Little, 1990) suggest that the potential benefits of teacher community needs to be more rigorously studied-the construct better defined-before any such claims can be made. This study addresses this issue by examining teachers' perceptions of participation in a long-term community of practice.

## CHAPTER II

### EXPLANATION OF RESEARCH PROCEDURES

#### **Introduction**

As discussed in Chapter I, more studies that take an in-depth look at the benefits of teacher communities from the community of practice perspective are needed. This chapter builds on that discussion, while laying the framework of this study.

#### Guiding Questions

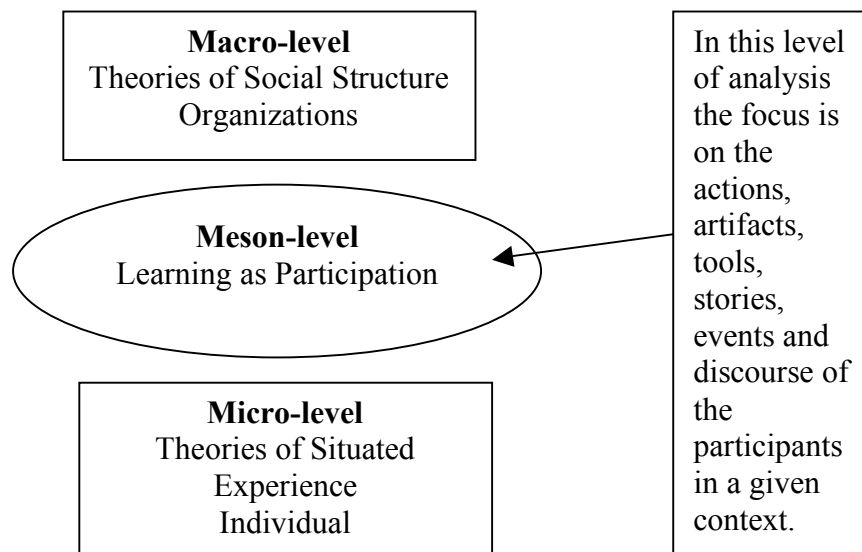
1. What are the teachers' initial reason(s) for participating?
2. What are the factors that teachers identify that support their continuing participation? That discourage their continuing participation?
3. How do teachers describe their interactions and relationships with other participants?
4. How do teachers describe their participation or experience over time?

#### **Methodology**

#### Theoretical Frameworks

This is an exploratory study using an interpretive epistemology (Patton, 2002; Mertens, 1998). According to Mertens (1998), this perspective is best employed when trying to interpret the meaning of some phenomena from a certain perspective, in this case a community of practice perspective. Patton (2002) adds that this epistemology is useful when trying to uncover a person's reported perceptions or views of the world. Still, it is important to emphasize that this study is not a grounded theory approach. Rather it uses a community of practice framework as a way to make sense out of what the teachers say and how the teachers' perspectives line up with or challenge the accepted theoretical perspective of community of practice as interpreted and understood by me.

Using community of practice as a theoretical framework offers a mid-level analysis (See Figure 3) and allows for thinking about learning as participation rather than simply the acquisition of knowledge or skills (Wenger, 1998).



**Figure 3: A Mid-level of Analysis (Adapted from Wenger, 1998 p. 12)**

Learning as participation is located between theories of social structure and theories of situated experience and focuses on the interactions and activities of the participants within a particular context and set of circumstances (Wenger, 1998 p.12). Theories of social structure focus mainly on the rules and norms of a program, group, or institution often to the exclusion of what it feels like or means for an individual to live within that structure in terms of everyday practice. Theories of situated experience focus almost exclusively on the interactions within groups or organizations to the exclusion of the structure within which these interactions take place. Theories of practice offer an intersection between these two theoretical approaches; they create a space from which to examine interactions and activities within a given and specific context. The assumption that engagement in social practice and the fundamental processes by which we learn are interdependent and that participation in practice facilitates learning are inherent in this approach. These assumptions provide a way to both explore a community of teachers through their perceptions of why they participate and look for evidence

for the connection between participation and learning. This study examines teachers' perceptions about why they participate in communities of practice, the organizational contexts of such practice, and the teachers' engagement in this practice.

### Methodological Framework

This study utilizes a phenomenological perspective (Patton, 2002) to explore participant perceptions and the meaning of the phenomena under investigation for both the participant and the investigator. Such a perspective focuses on the experience of participating in a community of practice and assumes that there is an *essence or essences to the shared experience* (emphasis added) (Patton, 2002, p.106) that can be articulated through research. Interpretation and experience are intertwined and essential to understanding the phenomenon.

The study also uses a critical-case sampling methodology (Miles & Huberman, 1994) to examine teachers' perceptions of participation in a community of practice through a school-university partnership. A critical case is one that can be used to make a point, i.e., in this case the location of a community of teachers as a community of practice inside a school-university partnership. The case is generally selected from a site that seems likely to yield the most information and have the greatest impact on the development of knowledge (Patten, 2002 p. 236). An often-perceived drawback of case studies is that they lack generalizability thus, making it make it difficult to understand differences in experiences. On the other hand, a critical case study design allows the researcher to make logical generalizations and apply information to other related cases (Miles & Huberman, 1994, p. 28). This proves useful when trying to exemplify a particular construct or phenomenon. The value of case studies from an interpretive perspective (Stakes, 2005) is that they allow the researcher to go into considerable depth with participants thus developing a critical understanding of the participants' perspective. Within-case sampling is appropriate when trying to understand in some depth a particular construct from multiple perspectives—in this case the teachers' perceptions of participation as well as the researcher's—and in greater



depth. Additionally, within-case sampling is useful when trying to understand how the construct operates within a set of specific conditions or contexts (Miles & Huberman, 1994).

### Context

The community of practice under investigation takes place in the context of a school-university partnership now in its eighteenth year of operation. In 1999, this program was one of five national programs to receive the National Science Foundation's Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. The nexus of the partnership is the teachers. They facilitate weekly after-school programs in their districts, attend professional development workshops, provide area field trips for their students, and bring the students to the university each year for a college connection event. Without the teachers there would be no partnership.

The partnership involves twelve school districts, thirty-five schools, sixty teachers, and approximately 700 students annually. Partnerships with school districts have been in existence from three years to eighteen years. Four districts have been in the partnership for eighteen years and four for seventeen years. The remaining districts range from one year to eight years, three districts no longer participate in the partnership. Thirty-five schools currently participate in the partnership. The following table provides an overview of the schools and their participation over time as well as the participation of the teachers. These schools are located from one to ten hours driving time away from the university. Aside from teachers working within the same district, the participating teachers do not see each other except during the specific times they are brought together through this partnership. Table 2 provides an overview of some of each district's characteristics including its length of involvement in partnership, total number of teachers involved over the time in the partnership and the average length of time its teachers participated. District data comes from website of Institute of Education Sciences, U.S. Department of Education, and <http://www.nces.ed.gov/ccd/schoolsearch>.

Note for Table 2: Unless otherwise noted a partnership consists of one elementary school, one middle school, and one high school and does not necessarily include the entire district.

^ Includes two middle schools

\*Indicates high need schools based on Oregon Department of Education classification.

`Indicates percentage of minority students in elementary and middle school/high school.

\*\*One teacher spent time in both these districts.

\*\*\*Teacher transferred from another district and had been in program two years in another district.

**Table 2. District Characteristics and Teacher Participation**

Districts	# Students in Schools served	Percentage of free and reduced lunch eligibility	Percentage of students who are minorities	Span of participation	Total number of teachers over length of partnership	Mean years of participation from population	Number of teachers participating in study	Mean years of participation of sample population
District A*	1,293	74%	11%	2003-present	11	2.2	7	2.4
District B	554	68%	46%	1988-present	18	2.8	2	5.5
District C*	2000	79%	68%	1988-present	25	4.2	6	5.0
District D	2,166	38%	24%	1989-present	17	4.1	6	5.7
District E*	1,121	60%	45%	1989-present	18**	5.1	5	6.6
District F*	1,833	71%	54%	1988-present	23**	4.3	4	7.0
District G (No EL)	2,595	28%	44%	1998-present	7	5.1	3	7.0
District H*^	2,959	71%	82%	1988-present	30	3.8	10	5.4
District I	971	62%	29%	1989-present	25	4.1	3	3.4
District J	617	56%	58%/19%	1989-present	25	3.3	6	4.7
School K (MS only)	300	25%	6%	2002-present	2	4	0	NA
District L	1,028	43%	30%	2001-present	8	2.7	2	4.5
District M (2 EL, 3 MS, 2 HS)	7,953	32%	28%	2000-2004	26	2.6	3	3.6
District N (1MS, 1 HS)	2,205	38%	34%	1989-1999	5	1	2	1
District O (MS only)***	519	62%	5%	2003-2004	3	1	0	NA

In this study, I examine not only the context in which these teachers come together but also their perceptions of these experiences. Teachers formally come together four times each year—three times for professional development and once at the college connection event—for a total of seventy-two hours. The summer workshop is designed to provide the teachers with an overview of the program theme for the year; it also includes curriculum, planning time, and engagement in their own learning processes. The focus of the winter workshop is curriculum and planning time to support the spring (March–April) college connection events. The spring workshop focuses on program evaluation and assessment as well as lifelong learning. It is also structured to give participants a chance to reflect upon all the components of the program and offer feedback about what worked well and what needs improvement. These discussions guide the planning for the following year.

### Participants

The teachers in this study are a purposeful sample drawn from all the teachers who have participated in the program over the past eighteen years (N=243). Thirty-eight of the current sixty teachers agreed to participate in this study. Twenty-nine completed the study. Thirty-five former teachers agreed to participate; thirty completed the study. The combined responses produced a sample size of N=59. All but one of the current partner schools and one former partner school are represented by these participants. Sixteen of the participants were high school teachers, twenty-five were middle school teachers, and nineteen were elementary teachers. Thirty of the participants were female, twenty-nine were male. Two identified their ethnicity as American Indian, two as Hispanic, one as Multi-racial/Multi-ethnic, six did not provide this information, all others identified as Euro-Americans. See Chapter 4 (p. 70) for more details on participants including educational background, length of time in teaching, and length of time in program.

### Data Collection

Data collection consisted of three phases: a pilot study, an on-line questionnaire, and focus groups. The pilot study, Phase I, included interviews and an open-ended questionnaire. Other data collected during the pilot study included field notes, audio-tapes of the telephone interviews, transcriptions of the interviews, and an open-ended questionnaire. Phase II and Phase III included an on-line questionnaire followed up by four focus groups conducted using a modified Q sort activity (described on p. 34). Data collected during the second phase and third phase of the study included the online questionnaire, focus groups, audiotapes of the focus groups, transcription of the focus group dialogues, field notes, and transcription of the data tables created by the participants in the focus groups. Table 3 shows the relationship between the research questions, the data source and the data analysis methods.

**Table 3: Relationship between Research Question, Data Source, and Data Analysis**

Research Question	Data Source	Data Analysis
1. What are the teachers' initial reason(s) for participating?	Online questionnaire Focus groups	Iterative cycles of inductive and deductive analysis using analytical framework based on communities of practice and communities of teachers. Modified Q-sort.
2. What are the factors that the teachers identify that support their continuing participation? That discourage their continuing participation?	Pilot Study Online questionnaire Focus groups	Iterative cycles of inductive and deductive analysis using analytical framework based on communities of practice and communities of teachers. Modified Q-sort.
3. How do teachers describe their interactions and relationships with other participants?	Pilot Study Online questionnaire Focus groups	Iterative cycles of inductive and deductive analysis using analytical framework based on communities of practice and communities of teachers. Modified Q-sort.
4. How do the teachers characterize or describe their participation or experience over time?	Pilot Study Online questionnaire Focus groups	Iterative cycles of inductive and deductive analysis using analytical framework based on communities of practice and communities of teachers. Modified Q-sort.

This study is structured to focus on the teachers as the unit of analysis, not the partnership. Some information that emerged from the analysis was more relevant to the partnership and will be analyzed at another time. Only the data deemed most relevant to the teachers and their participation was analyzed to address the overarching question of interest. How does participation in a community of practice constitute a resource for teacher professional growth?

#### Phase I Pilot study (Interviews and Questionnaire)

An open-ended questionnaire was developed for the pilot study based on a literature search of research in the area of teacher community. This questionnaire

was developed specifically for this group of teachers; there is no expectation that it is applicable to any other teacher group. Table 4 describes the studies in the literature review including the ways in which each study contributes to the current knowledge on the subject of teacher community. Questions for my pilot study were developed from these studies. A list of the twenty questions that were used in the pilot study follows the table.

**Table 4: Data Sources of Questions for Pilot Study Interviews and Open-Ended Questionnaire**

Author	Community Characteristics	Research Question
Dunn & Honts, 1998	Support group; safe; focused time with colleagues; time to talk about practice and grapple with issues in teaching.	How do teachers describe their interactions with each other at workshops and other events?
Grossman, Wineburg, & Woolworth, 2001	Group identity, norms of interaction; negotiating tensions; communal responsibility.	What are the group norms for teachers in the program? How are new teachers brought into the community? How are differences acknowledged and understood? How do teachers describe their role/responsibility as part of participating in the program?
Huffman, 2001	Learning communities move along a continuum; shared leadership; shared vision; collective learning; shared personal practice within the learning community.	How are the vision and its values shared with teachers in the program? What level of buy-in is necessary for teachers to successfully implement the program in their schools? How do teachers talk about the program and its values and visions?
Jenlink & Kinnucan-Welsch, 1999	Caring relationships; teachers learn by working together to construct ideas they can apply to own practice; teachers learn to negotiate how community functions, what its beliefs are, and what is important.	How do you create an ethic of caring within a teacher community? What evidence would you look for to determine if the teachers internalized “caring capacity”? How does the program create and sustain a sense of community for teachers?
Keats, Whelan, Rose, Davies, & Clandinin, 2001	Telling your story in different locations to different groups provides possibility for new ways of dealing with a situation; sense of safety and support; an arena for making sense of one’s personal landscape; a space to construct new stories.	What are the lived stories of teacher’s experience? How can these stories be come a reflective tool for teachers? How might these stories be used as data for funding or for others interested in duplicating the model?
Keiny, 2001	Context for collaboration and practice; provides opportunity for conceptual change,	How are community/industry people approached to participate in this study? What was their level of buy-in? How did they see their role in the collaboration? What was their learning as a result of this experience?



Lasiter, 1996	Developmental stages; motivation to work together; building trust and becoming a team; negotiating differences; coping with changes; collegiality and professional interaction.	<p>To what extent do teacher's exhibit characteristics of the teacher's professional learning community as defined by leading scholars in the field?</p> <p>Through what stages do teachers evolve as they stay in the program and are the stages the same or different across teachers?</p> <p>What are the contributing factors that inhibit the teachers from developing within the community?</p> <p>In what ways has the teacher community that develops within this program enabled teachers to change?</p>
Manouchehri, 2001	Collegial interaction; affective engagement and cognitive involvement; cognitive collaboration.	<p>How could you determine or characterize the level of engagement of a teacher in the program?</p> <p>What is the relationship between their level of engagement and effectiveness as a club facilitator?</p>
Thomas, Wineburg, Grossman, Myhre, & Woolworth, 1998	Effect of learning community is different for teachers with different levels of experience; opportunities to learn PCK; improve understanding of student learning; curriculum development.	What is the experience of participating in the professional development as a perspective over time?
Zahorik, 1987	Categorized 11 types of help teachers reported receiving; differences in collegiality between schools.	<p>During a typical workshop, which teachers do you usually talk with?</p> <p>How much time do you spend in these conversations?</p> <p>Of these conversations, what portion deals with teaching as opposed to social-personal matters?</p> <p>Describe some instances in which you got help from a colleague concerning teaching practices in the past year.</p> <p>Describe some instances in which you gave help to a colleague concerning teaching practices during the past year.</p> <p>What topics related to teaching practice do teachers at workshops talk about outside of workshop sessions?</p>

The pilot study questions (see Appendix A for a copy of the questionnaire that participants received) are included to facilitate comparison between these questions, the studies referenced in the development of the questions, and the questions later developed for the on-line questionnaire. I am also including them as a way to show both the evolution and refinement of my research focus over time. The teachers themselves have always been my intended unit of analysis. Nevertheless, the continuing reference to the program in the questionnaire used during pilot study questions illustrates one of the difficulties I encountered in studying my own work: how to separate what I do in my practice from what I am trying to investigate in this study (see p. 40 for a more detailed explanation of this conflict).

The following twenty questions were asked of all eleven teachers in the pilot study:

1. How would you describe your interactions with other [program name] teachers at workshops and events?
2. How are [program name] vision and its values shared with [program name] teachers?
3. How do [program name] teachers' talk about [program name] and its values and vision?
4. How would you describe your role/responsibility as part of [program name]?
5. How would you describe your experience of participating in [program name] professional development over time?
6. During a typical workshop, with which teachers do you usually talk?
7. How much time do you spend in these conversations?

8. Of these conversations what portion deals with teaching as opposed to social-personal matters?
9. Describe some instances in which you got help from a [program name] colleague concerning teaching practices.
10. Describe some instances in which you gave help to a [program name] colleague concerning teaching practices.
11. What topics related to teaching practice do teachers at [program name] workshops talk about outside of workshop sessions?
12. What would you say are the group norms for teachers in [program name] ?
13. How are new teachers brought into the [program name] community?
14. What level of buy-in is necessary for teachers to successfully implement [program name] in their schools?
15. How does [program name] create and sustain a sense of community for you as a [program name] teacher?
16. What factors contribute to your professional development as a result of participating in [program name] workshops?
17. What factors inhibit your professional development?
18. In what ways has the teacher professional development in [program name] enabled you to change as a teacher?
19. How would you characterize your level of engagement as a teacher in [program name]?

20. Do you have any questions or additional information that you would like to share?

At a workshop in the spring of 2004, all current teachers in the program were invited to participate in the pilot study. I provided a brief overview of the study, explaining not only that participation was optional but that choosing to participate or not participate would have no effect on their tenure in the program. Additionally the teachers were given a written overview of the research and an informed consent form to complete if they agreed to participate. A total of eleven teachers participated in the pilot study. Of this group three teachers with the most longevity in the program were chosen to be interviewed. Coincidentally one was an elementary teacher, one a middle school teacher and one a high school teacher each with sixteen, seventeen, and twelve years in the program respectively. Eight others completed the open-ended questionnaire. Table 5 shows the teaching level, whether the teacher was interviewed or completed a questionnaire; the teacher's length of time in the program; and number of time s/he would have come together as a group given her/his time in the program. The length of time in the program, the number of opportunities to participate, and the actual participation are of most relevance to the issue of teacher community and communities of practice.

**Table 5. Participants Time in Program and Teaching Level**

Teaching level	Data source	Length of time in program (years)	Number of times possible to come together as a community (% total)
Elementary	Interview	16	64 (100%)
Elementary	Questionnaire	2	8 (100%)
Elementary	Questionnaire	3	12 (83%)
Middle School	Interview	17	64 (100%)
Middle School	Questionnaire	9	36 (100%)
Middle School	Questionnaire	1	4 (100%)
Middle School	Questionnaire	2	8 (87%)
Middle School	Questionnaire	5	20 (90%)
High School	Interview	13	52 (100%)
High School	Questionnaire	7	28 (100%)
High School	Questionnaire	8	32 (97%)

A noticeable characteristic of the teachers who participated in the pilot questionnaire is their attendance rates; seven have 100% attendance; one has a 97% and one a 90% attendance rate; and two are in the 80% attendance rate with 87% and 83% respectively. As teacher community and communities of practice are affected by the length of time in the program, the number of opportunities to participate, and the actual participation these findings are of interest to this study and will be described in more detail in Chapter 4.

Semi-structured interviews were conducted over the telephone. Upon agreement to participate, the interviewees were sent a copy of the questionnaire. All had it in front of them during the interview. Each interview lasted sixty to ninety minutes and was audio-taped and later transcribed. Transcriptions of the interviews were sent to each interviewee as a way to elicit further information and feedback. Two respondents followed up with a question or two to further clarify their comments. The same set of questions was used for interviews and for the written questionnaire. Of the eight completed questionnaires, five were done electronically and three were filled out in longhand.

#### Phase II Open-ended Questions (On-line Questionnaire)

Analysis of the pilot study was instrumental in informing the design and focus of Phase II of this study. Findings from the pilot study (see Chapter 3, p. 42) suggested a slightly different approach to the research. An additional literature search uncovered a questionnaire created by Meyer and Barufaldi (2001) that examine the role of the Texas Regional Collaboratives for Excellence in Science Teaching, a statewide professional development network, in teacher retention and renewal. I met and corresponded with Meyer; as a result, I was able to obtain a copy of the instrument she and Barufaldi had used in their research. I then used their instrument as a template to redesign the original questionnaire on teacher community I'd used in the pilot study. A science education faculty member located at the university in this study and her graduate students in a data analysis class reviewed my revised design.

In order to create a questionnaire that could be easily completed by teachers and could be used to aid in the analysis, an on-line questionnaire service (Survey Monkey©) was employed. Survey Monkey© provides templates for designs, as well as various options for collection and analysis of data. Two versions of the questionnaire were created, one for current teachers in the program and one for former teachers. The main difference in the questionnaires was the tense of the verbs when asking questions about teachers' participation. See Appendix B and C for copies of each of these questionnaires.

The first question in the questionnaire addressed the issue of informed consent, "I have read the attached informed consent document and agree to participate in this research." If the respondent chose "yes" as a response he/she could move into the questionnaire, if "no" the questionnaire ended immediately. The questionnaire was available at a Survey Monkey© website for five months from May through September 2006. An electronic reminder was sent in mid-September to those who had started but not completed the questionnaire.

Data collected through the questionnaire included name and school; willingness to participate in a future interview or focus group; demographic data; number of years teaching; years as a member of the partnership, earned degrees and certification. Six open-ended questions related to participation and perception teacher of the value of participation. A twelve item Likert-scale response was included in the questionnaire but was not analyzed. See the section on Data Reduction, p. 40 in this chapter for a detailed explanation of the whole process.

Prior to receiving an invitation to participate in the study, current teachers in the program were given an overview of the proposed study at the spring 2005 workshop. All current teachers then received an email notification with an invitation to participate and a URL for the questionnaire. Former teachers (N=183) were initially contacted via standard postal mail using addresses in the program data base. This contact included an invitation to participate, an overview of the study and a link to the questionnaire site. Fifty-three letters were returned because of out-of-date addresses; of these twenty-eight were subsequently located in the Oregon Teacher Standards and Practices Commission (TSPC) database and re-

mailed. No further effort was made to contact the remaining twenty-seven. Table 5 provides an overview of the teachers who completed the study and their teaching level.

**Table 6 Participant Consent**

<b>Teachers</b>	<b>Total number of teachers contacted</b>	<b>Number of teachers (%)</b>	<b>Teaching level (Elementary, Middle, High)</b>
Current	60	29 (48%)	6 E, 14 M, 8 H
Former	183	30 (16%)	12 E, 11 M, 8 H
Total	243	59 (24%)	18 E, 25 M, 16 H

As noted in Table 5 above, there is a fairly even distribution of teachers throughout the three teaching levels represented in the program. Elementary represents grades 4-5; middle school grades 6-8, and high school grades 9-12.

The questionnaire was open for five months, May through September 2006. Analysis did not start until after the survey was closed. All questionnaires were downloaded and read through one time. After this initial reading I went back to Survey Monkey© and downloaded the questionnaires again sorting them by each of the six open-ended questions. To help in delineating the analysis, each section of the questionnaire was downloaded separately. The demographic questions were put aside and not looked at until after the analysis of data from the focus groups. This was done to help me separate the actual responses from the individuals who made the responses. The responses to the Likert scale questions were summarized by Survey Monkey© and were set aside for analysis at a later time. This decision was made because it seemed that those statements in particular spoke more about program attributes and not as much about teachers' perceptions of participation.

### Phase III Focus Groups

To delve further into the information gathered in Phase II and get teachers perspectives, focus groups were conducted in four communities representing 33% of the communities who participate in the overall program. All have longstanding, successful partnerships. These communities were chosen for their diverse

geographical representation as well. In each community, every individual who'd previously indicated that they would be willing to be interviewed or contacted for further information was invited by an email invitation. This created a potential pool of twenty-three participants for the focus groups; actual participation was eleven (48%). After hearing from those who were willing to participate in the focus, another email was sent to these teachers to arrange a time and place for the focus groups to be held. In one community, two separate focus groups were necessary because of the physical distance between the community with the elementary school and the community with the middle and high schools.

Table 7 illustrates the number of teachers contacted and the number of teachers who actually participated in the focus groups. Also included in the table is the teaching level represented by the participant and his/her length of time in the program.

**Table 7. Focus Group Representation by Teaching Level and Time in Program**

<b>Community</b>	<b>Total number of teachers contacted</b>	<b>Number of teachers who participated (%)</b>	<b>Teaching level and length of time in program (years)</b>
Community A	8	4	HS (7, 3); MS (8); EL (4)
Community E	4	2	HS (16); MS(10)
Community F	3	2	EL (12, 2)
Community H	8	3	HS (8); EL (17, 6)

Length of time in program is included in this table because one of the characteristics of identity and membership in a community is length of time involved in the community.

The purpose of focus groups was to have the participants provide feedback on the initial analysis. This offered me a way to "check-in" with the participants and learn more about how they perceived the information they had previously provided (Morgan, 1996). Each focus group started with a brief overview and update of the research to address any participant questions or concerns. Each



session was audio-taped and later transcribed by an undergraduate hired by the researcher. I presented the data from the online questionnaire and served as moderator and recorder at each session.

Data was collected using a modified Q-sort methodology based on the work of Borthwick, Stirling, Nauman, and Cook (2003). Q-sort methodology is similar to factor analysis but is used for data that is in “everyday language” rather than numerical representations. Such a strategy allows participants in the study to have input into the analysis of the data they have provided. This study uses the strategy of the methodology but I did not conduct the actual factor analysis due to limited numbers in the focus groups.

The modified Q-sort consists of statements that come directly from the respondents. The statements are grouped by questions from the Phase II online questionnaire (See questionnaires in Appendices B and C). Statements were printed and cut into strips, with one statement per strip. The only sorting done by the researcher prior to the focus groups was by question, i.e. Question 1. “Briefly describe the reason(s) you initially decided to participate in the...program.” All of the statements for question one were sorted as a group. Each open-ended question from the questionnaire was treated as a separate sorting process.

Each collection of statements was sorted by at least two different focus groups. Participants were asked to sort the “sentence strips” and then to put them on a continuum of what they perceived as least important to most important. Each focus group sorted two to three questions over the course of a ninety minute session. Each group sorted and taped their statement sentence strips onto a blank sheet of paper. Following each session the researcher collated the results of the group sorting process in both a word processor form, and using a graphic, brainstorming software (Inspiration©). By representing the data in a graphic format, I was able to capture for analysis the actual way the teachers physically sorted the sentence strips. This data will be presented and discussed in Chapter 3.

## Data Analysis

### Analytical Framework

The data analysis for this study followed an iterative process of inductive and deductive reasoning. It involved reading the data from the open-ended questions, looking for emergent patterns and themes, refining the process, applying two layers of coding and eventually some data reduction to focus on the data that addressed the four questions of interest in this study a strategy borrowed from grounded theory research (Miles and Huberman, 1994). In this initial stage, emergent themes were grouped together with no labels or classifications. After several iterations, I characterized emergent themes with one or two word descriptors. For each theme or pattern that was identified, I searched for a corresponding disconfirming theme or pattern.

The theoretical perspective of communities of practice focused on the characteristics and activities of such communities (Wenger, 1998). I used this framework to develop a set of macro and micro codes for the second level of analysis. Note: a description of the derivation of the codes is provided on page 38. See also Table 8, p. 39. These codes were used to view the same data but provided a more focused lens. These codes were applied to the same data set as previously described to look for confirming or disconfirming evidence of the representation of communities of practice. A third level of analysis was conducted with codes developed from empirical studies on community of teachers. The results of these two coding schemes were compared to look for similarities and differences in coding. The results of these multiple layers of comparisons are used to further examine the notion of a community of teachers as a community of practice.

### Analysis of Community of Teachers as Community of Practice

#### Analysis of Pilot Study

Analysis of the pilot study followed a process for confirming or disconfirming evidence of teacher community in the words of the teachers. Both interviews and questionnaire responses were read several times to develop a sense of what the teachers were saying in their responses to the questions. After these

initial readings, similar phrases or expression were noted and compared. The process I used for this stage of the analysis was later used in this dissertation. See the following section, Analysis of Online Questionnaire for a detailed description of the process.

Analysis of data from the pilot study shifted the focus from teacher community to the narrower framework of communities of practice. This phase involved an additional review of literature in search of studies also utilizing a communities of practice framework, connections to teacher community, and teacher professional growth.

### Analysis of Online Questionnaire

The initial analysis involved reading through all the responses to the six open-ended questions and looking for patterns and themes. This was done without having pre-established codes (Miles & Huberman, 1994) so I could more directly see what emerged from the teachers' actual responses. These statements were then organized into initial groupings of similar ideas or themes. The first process was clustering and color-coding to separate current and former teachers. The color-coding made it clear that there was no analytical reason to keep current and former teachers responses separate. Subsequent analysis of these emergent patterns or themes utilized, Inspiration© a graphical software package.

The coding scheme consisted of macro and micro codes based on the information in Table 8. Macro-codes were the overarching descriptions of each construct. For communities of practice macro-codes are: mutual engagement (MUT), joint enterprise (JEN), shared repertoire (SHR); and stages (STG). The macro-codes for community of teachers are: collective capacity (CCY); collegial interactions (COI); individual development (IND); change in practice (CIP); and stages (STG). Micro-codes are drawn from the sub-topics listed under the main characteristics in the table, i.e. MUA could be coded with the addition of ENG (engaged diversity) and COI could have a second layer of coding such as LIP (learning in practice).

**Table 8: Coding Scheme and Derivation**

<b>Community of Practice</b> (Mutual engagement, Joint enterprise, Shared repertoire)	<b>Community of Teachers</b> (Intellectual, Social, Material resources)
Engaged diversity Doing things together Relationships Social complexity Community maintenance	Collective Capacity: Shared vision and values, collaborative, a voice, collective learning, and application, sense of shared responsibility, student centered outcomes, shared personal practice, shared leadership, social and cultural community, supportive conditions, inclusive.
Negotiated enterprise Mutual accountability Interpretations Rhythm Local response	Collegial Interactions: Caring and connecting, conversational space, recognize and value teachers personal practical knowledge, talking about practice, teaching, students, situating learning in practice and relationships.
Styles Stories Artifacts Actions Tools Discourse Historical events Concepts	Individual Development: Content, PCK, credit, continuing professional development, curriculum, resources, stipend.
	Change in Practice: Conceptual change, change in strategies or methodology, perceive a need for change, context specific.
Stages	Stages

A more detailed description of this analysis process—including results and illustrations of the coding—is presented in Chapter 3.

Data are analyzed a second and third time first using the codes created from the literature on community of practice and then the codes on community of teachers. This process of comparing data for confirming or disconfirming evidence (Miles & Huberman, 1994) was used to support the claim that this “coming together” of teachers can be characterized as a community of teachers in a community of practice and that this community of practice creates a potential opportunity for professional growth.

## Analysis of Verification by Participants

### Focus Groups

Focus groups are a useful tool in qualitative research and are frequently used in combination with questionnaires (Morgan, 1996). Because questionnaires are inherently limited by the questions asked it is a common practice to use focus groups to provide data on how respondents themselves talk about the topics of the questionnaire, a follow-up that assists in interpreting the results of the questionnaire (Morgan, 1996). Comparisons between focus groups and questionnaires are another way to look for confirming and disconfirming evidence of the phenomena under investigation. Focus groups allow the researcher to focus on the group's interaction as a source of data. They also acknowledge the researchers role in creating the discussion for data collection purposes. Focus groups are important when there may be a difference in perspective between the researcher and the research subjects. Feminist researchers like Mertens (1998) support the use of focus groups because they allow the participants to have some control over the interpretation of data about themselves.

### Q-Sort Methodology

In a study on school-university partnerships, Borthwick, et al., (2003) uses Q-methodology to study participants' perceptions of the value of participating in a partnership. Q-methodology is a way of rank ordering this data and is qualified by the participants in the study or other key informants (Borthwick et al., 2003). It is not used to generalize to a larger population but to test theories on small sets of individuals who have some significant relationship to the characteristics under study. This methodology uses a process of deductive and inductive analysis to produce forty to fifty statements representative of the phenomena under investigation. A goal is to identify factors with which at least four to five people identify. In this study, due to the small number of participants in the focus groups, a modified Q-sort methodology was used. Statements taken directly from the teachers' responses to open-ended questions in the online questionnaire were cut up into were cut into "sentence strips." See Chapter 3 for a representation of these

comments. The teachers in the focus groups were presented with a set of these strips. These sets were statements taken directly from the teachers responses to each of the open ended questions in the on-line questionnaire. Questions were sorted by at least two different focus groups; as a result, some appear in more than one place along the continuum. These strips were then presented to the teachers in the focus groups who were asked to sort the statements and rank them along a continuum of least important to most important. There was no vertical delineation in the statements. I did not give any specific directions about the spread of the continuum. Three of the focus groups placed statements on a scale of one to five, and one placed them on a scale of one to six. The teachers in these focus groups then talked about the process of sorting.

I then used a continuum of least important to most important to assign a relative value to each of the subtopics under each theme as reported by the teachers in the focus group. I looked at the patterns in the sorting process including what statements were placed where along a continuum. My goal was to understand how the rankings compared to the initial analysis of these statements by the researcher and to findings of other similar empirical studies.

### Data Reduction

Miles and Huberman (1994) describe data reduction as an important part of data analysis that helps the researcher to refine and clarify analysis. The data being reported for this study are intended to describe the teachers' perceived benefits from participation and not to describe a particular program. After my initial analysis, some of the data collected through the course of this research that was program specific was set aside. Additionally, the responses to the Likert scale items, which focused more on characteristics of the program—rather than the teachers' perceptions of participation—were set aside to be analyzed at a later time.

### Researcher as Participant/Observer

As the associate director of the program in this study and the designer of the professional development for the same program, I have walked that fine line between being the researcher and being the practitioner. In some cases, a professional as well as a personal relationship exists between the participating teachers and myself. The constant interplay between these two roles has allowed me to be both engaged in the process at the same time that I also reflect on it. As a result I have strived to maintain my researcher perspective throughout this study.

My theoretical perspective on communities of practice is grounded in my own background as a researcher, a professional development designer, and a former classroom teacher. In addition, the topics I've chosen for investigation in my doctoral research—including the questions used in the online questionnaire and focus groups—all grew out of my long-term involvement with teachers engaged in their own professional growth.

While some researchers may argue that such an insider (or emic) perspective hampers research, others argue that it may in fact be a significant strength (Patton, 2002; Mertens, 1998). Madeline Lampert (1998) who also studies her own practice offers the following:

Studying practice from the perspective of *my* practice means that what I know is lodged in a place both personal and public. This place—between the inside and outside of practice—is where I locate myself in the study of teaching. (Lampert, 1998 p.55)

This place that Lampert refers to is similar to the one I have located for myself and my study—both inside and outside of my practice. To open up my own practice for review and critique is exactly what educational reform is asking of teachers in general. Since it is also what I am asking of the participants in my research, I should ask no less of myself.

## CHAPTER III

### COMMUNITY OF TEACHERS

#### **Introduction**

As described in the previous two chapters, a theoretical framework of legitimate peripheral practice (Lave & Wenger, 1991) and communities of practice (Wenger, 1998) provide an analytical framework for investigation of the community of teachers that is the subject of this research. Such frameworks allow us to look at the teachers' descriptions of social interactions from their perspectives. This includes the ways in which these descriptions do or do not correlate with existing literature on the subject as well as, the ways these interactions can lead to teacher learning. The primary aim of the analysis presented in this chapter is to offer an explanation of the potential for teacher learning from the perceptions of the teachers who participate in these types of experiences.

In this chapter and Chapter 4, I will draw primarily on the teachers' responses to describe the scope and meaning of each theme. In my view, it is important to respect the teachers' voices as part of the data presentation. It is equally important in reporting research to, whenever possible make the data "visible" and open for further questioning and analysis by readers. And it is equally important for the reader to be able to "hear" the teachers' voices in order to be able to judge the strength or weakness of the claims I am making based upon this data. This complicates my presentation; nevertheless, I believe it strikes a balance between and thoroughness in reporting.

The characteristics of community of practice and community of teachers as previously discussed (see pp. 9-12) illustrate the usefulness of these constructs as a framework for analyzing teachers' perceptions of participation. Communities of teachers provide a broad lens that brings my research into focus. Community of practice provides a finer lens, one that allows me to hone in on specific characteristics and the dynamics of such a community. It is through this latter lens that the data in this chapter are presented and analyzed.



This is the first of two chapters presenting the data analysis for this study. It briefly describes the findings from the pilot study, and then examines the results from analysis of the on-line questionnaire using a ‘community of practice’ analytical framework. Chapter 4 reports on the use of a modified Q-sort methodology (as described in Chapter 2) to test for participant verification of the initial analysis. The following coding scheme is used for the quotations throughout the rest of this dissertation to identify the teacher who made a particular statement or comment: Female (F), number 1-30; Male (M), number 1-29; A-O, community designation (see Table 2 in Chapter 2, p. 27); and teaching level as elementary (E), middle school (M), high school (H). See Chapter 4 for a more in-depth analysis of the individual teachers.

### **Building a Case for Teacher Community**

Analysis of data from the pilot study (Spring, 2004) illustrates teachers’ perceptions of their participation in a community. These teachers capably articulate the vision and values of the program (Huffman, 2001); this indicates that they have a sense of shared purpose. In addition they feel like they have a voice and are being listened to (Keats, Whelan, Rose, Davies, & Clandinin, 2001), an indication that they are engaged (at the very least) as legitimate peripheral participants. They also express a clear purpose for coming together and can articulate roles and responsibilities (Grossman, Wineburg, & Woolworth, 2001; Keiny, 2001). This indicates their sense of mutual accountability and engagement in actions whose meanings they are negotiating with one another. All appreciate opportunities to reflect on teaching practices and content knowledge, and to acquire additional resources to support teaching science (Huffman, 2001); this indicates that they feel a shared repertoire of practice including common tools, ways of doing things, and actions that are part of their common practice. They also have the opportunity for focused and purposeful time together (Dunne & Honts, 1998) which leads to a sense of joint enterprise during which they come together to share and learn from each other. Participants also display a sense of trust along

with the ability to work as a team. Dealing with such change indicates, once again, (Lasiter, 1996) their sense of mutual engagement as they negotiate and create meaning in their actions. All involved appreciate the collegiality and professional discourse (Manoucherhri, 2001; Zahorik, 1987) an indication of a sense of shared repertoire in their common experiences.

A few quotations from the pilot study illustrate the teachers' perspective on being a part of a community of practice:

Learning that your school is not a small island with lonely problems, but connected to other learning communities facing similar difficulties... The teachers that join...are by definition teachers who care and are interested in student learning (good teachers in other words) and you can learn just by listening and watching them interact with others and solve problems. (F19GH)

I have gotten so many more ideas about content and methods in teaching; it has expanded my repertoire and my comfort zone. I have continued my own learning and expanding my own knowledge helps me share my love of learning with my students. It's great to be part of a community of people with these same things in mind because my purpose then is greater than just a teacher at a school. (F22JE)

Trying activities and receiving encouragement from the teaching community has helped me be a bit more comfortable and confident as a teacher. I have more ways to teach and model teamwork than before. (F17IM)

The networking that occurs is superb. I always return with a new outlook on ways to improve instruction. I have also had the opportunity to make many friends in distant parts of the state. (M26GH)

The most rewarding professional experience of my nineteen years of teaching... I've used most of the concepts learned at workshops. (M10BM)

Teachers in the... program are some of the most engaged educators I have ever seen. They are interested and energetic. (F31IE)

The collegiality helps me try new things and not be discouraged even if they fail. (F32IM)

These teachers' comments reflect a sense of being part of a community that offers support and encouragement, one that gives them such a sense of collegiality

in that they look forward to ongoing interactions with one another. In fact the participating teachers use words such as “collegiality” and “community,” terms that are important to this analysis. The teachers also describe a sense of belonging to something larger than just being a classroom teacher, indicating a sense of membership another important aspect of community of practice. And they also talk about shared personal practice a significant concept in the development and maintenance of a community of practice.

Preliminary findings from the pilot study indicate that, from the perception of the participants sampled, there was a sense of belonging to a community. This legitimizes my research decision to analyze this particular community from the perspective of community of teachers as community of practice. In fact, I feel the issue is worth pursuing in order to gain a better understanding of the nature of the perception, including the myriad ways it could be more fully described. Of additional interest is the opportunity to learn more about the relationship of participation in the community to opportunities for professional growth and development for the teachers who participate.

## **Analysis of Community of Teachers**

### Introduction

Eight themes emerged from the analysis of the answers to the open-ended questions from the online questionnaire. In this section each theme is described in relation to its connection to the theoretical framework of communities of practice:

- *Leadership.* Participation in a community of practice provides teachers with the opportunity to influence and guide the direction of the community and can impact their sense of efficacy as a teacher (Hausman & Goldring, 2001);
- *Disengagement.* Communities of practice continually replicate themselves, new members move from the periphery of the

community into full membership as others move on and leave (Barab & Duffy, 1998);

- *Student-centered*. Teachers in a community of practice engage in focused talks on student thinking and learning in relation to their teaching practices (Wilson & Berne, 1999);
- *Pedagogy and pedagogical content knowledge*. Participation in a community of practice provides teachers the opportunity to talk both about the content they teach and how to teach that content (Lampert, 1998; Howe & Stubbs, 1996);
- *Financial and material resources*. Participation in a community of practice can provide teachers with access to materials and resources not otherwise available to them (McDonald & Klein, 2003);
- *Professional development*. The focus shifts from individuals to the community of practice and how learning is created and shared within this context (Knight, 2002);
- *Collegial interactions and relationships*. Teacher collaboration is central to communities of practice and represents the potential for teachers to learn from and with one another (Little, 2002); and
- *Shared personal practice*. Teachers share their experiences, the problems of their own practice, and knowledge based on their practice with each other in a community of practice (Cochran-Smith & Lytle, 1999; Lave & Wenger, 1991).

The following section delves into more detail concerning the open-ended questions from the on-line questionnaire. First a general summary describes each of the open-ended questions and the participants' response to these questions. The responses are presented as a percentage of the number of times a particular topic is mentioned. Because respondents may have mentioned several reasons, the percentages may not add up to 100%. These response summaries are followed by "exemplary" quotations from the teachers' responses that were chosen because they highlight each thematic area and thus help the reader develop a more

complete picture of each thematic area. These questions are the crux of support for my argument that this coming together of teachers described here can be considered a community of practice. Questions addressed initial participation, continuing or discontinuing participation, collegial interactions and relationships, and participation or experience over time. It is important to note that neither the classification of the questions nor the emergent themes reported on in this chapter represents discrete categories; rather, they are an attempt to interpret the data while recognizing there is overlap in many of the thematic areas.

### Initial Participation (Guiding Question 1)

Teachers' responses about why they decided to participate in the partnership fell into six main themes: student centered (53%); pedagogy and pedagogical content knowledge (27%); professional development (19%); disengagement (19%); financial and material resources (13%); and collegial interactions and relationships (5%).

I first started because of the way...connects kids to college and influences their decisions to stay in school. (M22HM)

The opportunity to engage students in the learning of math and science in a different setting....Helping students realize their potential and not letting the fact that they are minorities or from a small town in Oregon limit their futures. It was a way for me to continue by search for better methods to help my students learn and enjoy math and science. (F12JH)

I had heard wonderful things about the professional development opportunities. (F24FE)

I was extra super strongly urged to participate, as the school's math teacher was either unwilling or unavailable. It was within a week of back-to-school when this was sprung on me, so I honestly cannot recall what evaluative process I used. I was almost certainly considering the money-my initial motives may have been less than noble. (M12JM)

Receiving a stipend for my work outside the teaching day and the promise of professional development was a plus. (F13FE)

The networking that occurs is superb. I always return with a new outlook on ways to improve instruction. I have had the opportunity to make many friends in distant parts of the state. (M26GH)

When reading the comments of the teachers, it is important to keep the context in mind. These are responses to specific questions asked on the on-line questionnaire (see Appendices B and C for the full questionnaires) about initial reasons for participating in the program. What is most compelling about the teachers' responses is the intensity and commitment expressed through their words. Teachers talk about a strong connection to students and a desire to help them succeed; this expresses a shared sense of responsibility. These teachers also talk about professional connections and interactions with other teachers, and a desire to further their own professional growth and development.

### Continuing Participation (Guiding Question 2)

Five themes emerged from analysis of the question about why the teachers continued their participation: student-centered (42%); pedagogy and pedagogical content knowledge (26%); professional development (24%); financial and material resources (21%); and collegial interactions and relationships (14%).

Peer collaboration...Extended study opportunities (professional opportunities)...Involvement with students outside of class. The money is definitely a factor, but I still think the main reason I stick with...is because of the opportunity to go places, see things, and be exposed to people and their workplaces that I probably wouldn't otherwise. (M13HH)

...allows children to learn in a hands-on way not possible as frequently in regular classroom. Excellent support of teachers is offered by...staff. (F30JE)

Getting to know students on a personal level has been very rewarding. It is a great opportunity to help students with science and math and also let them know about college and success! (M28CM)

Teachers' reasons for continuing participation reflect their ongoing commitment to students and to their own individual professional development. The teachers clearly appreciated the financial support given in the form of a stipend, although money does not appear to be the main reason they continue to be

involved. Access to resources and materials to aid their teaching is an added value of participation. The focus on science and mathematics content is seen as important to the teachers too.

I continued...for eleven years. The work with students was rewarding and fun. Receiving professional development from...and having a chance to network with other teachers across the state was an invaluable source of knowledge and inspiration for me. (F13FE)

I am sorry to say that I am no longer involved in the...program. I left [district]... and did the program in [district]...for two years and then moved to a district where there was no program. I am back in [district]...again. I am impressed and very proud of our current...students. I would love to get back into the ... program. (M25E/F)

My expectations were not met. I found it difficult to motivate students. (M5CH)

I didn't like the curriculum...and didn't have time to dedicate fully to the program. (M6HH)

It was time to leave due to excessive travel and workshop requirements. (M7FH)

The reasons for leaving the program were related to personal and professional issues: family situations, balancing a regular teaching workload with the additional responsibilities of program, and not liking the curriculum or program. Three teachers actually retired: teachers left the district or were reassigned to another school; teachers were in a district where the district dropped the program; one teacher became an administrator; two cited excessive time requirements; three cited lack of support from the program; one did not like the curriculum; two found it difficult to motivate students and felt like it was more social than academic; and six reported family obligations.

### Interactions and Relationships (Guiding Question 3)

Analysis of responses describing interactions and conversations with teachers in the program produced three main themes: shared personal practice (55%); collegial interactions (69%); and student-centered (22%). Collegial

interactions were categorized as sense of community (47%); friendships (11%); social time (8%); and venting (3%).

We talk about how to provide great activities for our students, and trouble shoot making activities work well. Often we discuss our own teaching experiences, share problems, and at times help each other solve problems [regarding students and teaching]. We have a great time learning together and trying out the activities we'll be using in our clubs, and sharing our own lessons and teaching strategies. (F1AM)

We were excited about learning together and excited about taking back what we learned and sharing it with our ...students. (F4IE)

Over the past seventeen years I have made several friendships in the program. Us [*sic*] old timers continue to keep in touch and always find time at workshops just to catch up (family, hunting, etc). (M24DM)

The social time is what makes me feel like I belong in... Without it I would not feel as attached and willing to come back every year. (F26HE)

They have mostly been positive, although sometimes there are too many cliques (e.g. conservatives and liberals). The irony, it seems, is that among ourselves we are very focused on some socio-economic sensitivities, but not others. (M19GM)

These stories of shared personal practice and a shared repertoire of experiences reflect the collective capacity of these teachers. These representations—including the language and the teachers used to describe their interactions—are grounded in both their participation in this group and their common experience of being classroom teachers.

#### Participation and/or Experience over Time (Guiding Question 4)

The responses for this question were related to the teachers' experiences of participation over time. Seven themes emerged: leadership (24%); shared personal practice (21%); student-centered (14%); professional development (8%); financial and material resources (6%); disengagement (6%); and collegial interactions and relationships (5%).



I feel that I have become more of a participant in the process of guiding the direction of the program rather than simply a student in a workshop. (F17IM)

It has gotten richer through long term relationships, a growing library of hands-on activities, seeing students graduate and attend college, and the involvement with students' families. (M22HM)

Each year that I was in the...program made me feel like a more professional teacher and I was becoming someone who was making a real difference to students and the community. (M8JM)

I like being handed new ideas with kid activities to use and now even the equipment and supplies to go along with implementing the ideas. I don't have to create so much myself, so I can spend less time getting ready and do a better job teaching! I can remember the days when the workshops were interesting and fun, but I did not benefit directly. Now I come away from the workshops and use a great amount of the materials and ideas. (M18CE)

I became more confident after the first year and enjoyed participating [*sic*] more. (F5HE)

I have a much harder time staying inspired as our (district) administrator dictates how to run our club and the amount we are expected to do increases. (F18EE)

The teachers' descriptions of their experiences or participation over time capture the development of long-term collegial relationships. An increased comfort in sharing their personal practice with one another is also evident through in their responses. They express the difficulties they have when teachers they have gotten to know leave the community as a loss and/or the loss they feel when they leave the community. Their participation over time moves them into leadership roles in both the program and the district. Some teachers express that this makes them feel more professional while others express some reluctance and discomfort. When reading through these responses, a growing sense of belonging and membership in a mutually engaged practice is definitely evident.

### Summary

The data described above represent a synthesis of the data collected during this research to address these questions of interest: 1) What are the teachers' initial reason(s) for participating? 2) What are the factors that the teachers identify that support their continuing participation? That discourage their continuing participation? 3) How do teachers describe their interactions and relationships with other participants? 4) How do they describe their participation or experience over time?

Taken individually these findings are of interest from the standpoint of learning more about teachers and their interests and motivations. But collectively these findings suggest an alignment with the domains of communities of practice: mutual engagement, joint enterprise, and shared repertoire. Mutual engagement is represented through the teachers' descriptions of shared personal practice, collegial interactions and relations, and student-centeredness. Joint enterprise is represented in the teachers' descriptions of shared personal practice, pedagogy, and pedagogical content knowledge, professional development; student-centeredness, and leadership. Shared repertoire is represented through the teachers' descriptions of shared personal practice, pedagogy and pedagogical content knowledge, financial and material resources, and interactions and relationships. See page 58, Dimensions of Community of Practice of this chapter for a detailed analysis of these alignments.

### **Participation in a Community of Practice**

The value of each theme—as determined by the percentage of teachers who mentioned something relating to the theme—was ranked differently depending on its relation to the teachers' initial participation in the program or their on-going participation. Student-centeredness was cited by 53% of the respondents as a reason for initially participating, by 42% for their continuing participation, and by 14% in their participation over time. Pedagogy and pedagogical content knowledge was cited by 27% for initial participation and by 26% for continuing

participation. Opportunity for professional development was cited by 19% for a reason for initial participation, by 24% for continuing participation, and by 8% for participation over time. Disengagement (not voluntarily choosing to participate) was cited as a reason for initial participation by 19% of respondents and cited again under participation or experience over time by 6% of the respondents. Financial and material resources were mentioned by 13% for initial participation, by 21% for continuing participation and by 6% for participation over time. Collegial interactions and relationships were mentioned in every response to the questions from the on-line questionnaire. It was mentioned by 6% for initial participation, by 14% for continuing participation, and by 5% for participation over time. It was the entire focus of one of the questionnaire questions. Shared personal practice was cited by 55% of the respondents in collegial interactions and relationships and by 21% of the respondents in participation or experience over time. Leadership was mentioned by 24% of the respondents in participation or experience over time. In fact, this is the only place in the findings where leadership is mentioned. The findings highlight the fact that reasons for initial and continuing participation are dynamic and change over time with further participation. These findings resonate with characteristics of community of practice, in particular the ways in a sense of membership and identity in membership changes with long-term participation.

See Chapter 4 for a comparison of the relative value of these themes with the relative values of the themes from the modified Q-sorts of the focus groups.

## **Community of Teachers as Community of Practice**

### Introduction

This section describes the analytical process used to verify that the teachers who participate in this program can be described as a community of teachers involved in a community of practice. A description of the coding scheme developed for this process was described in Chapter 2 (refer to pp. 38-39 and Table 8). Details of the representations of community of teachers as community of

practice are presented in the following three tables. A brief summary of the findings is provided after each table. This summary is followed by an explanation of how the coding scheme described in Chapter 2, pp. 38-39 was used to compare and contrast the construct community of teachers with the construct community of practice

### Dimensions of Community of Practice

The dimensions of community of practice as conceptualized by Wenger (1998) are mutual engagement, joint enterprise, and shared repertoire. See Chapter 2, pp. 37-39 for a detailed description of these dimensions. Wenger (1998) talks about “knowing in practice” as part of being a competent member of the community through the following ways:

1. *Mutuality of Engagement.* The ability to engage with other members and respond in kind to their actions, and thus the ability to establish relationships in which this mutuality is the basis for an identification of participation;
2. *Accountability to the Enterprise.* The ability to understand the enterprise of the community of practice deeply enough to take some responsibility for it and to contribute to its pursuit and its ongoing negotiation by the community; and
3. *Negotiability of the Repertoire.* The ability to make use of the repertoire of the practice to engage in it. This requires enough participation (personal or vicarious) in the history of the practice to recognize it in the elements of its repertoire. Then it requires the ability—both the capability and the legitimacy—to make this history newly meaningful (Wenger, 1998, p. 137).

Tables 9-11 provide illustrations of the characteristics of each of the three dimensions describe above.

**Table 9: Community of Practice as Mutual Engagement.**

<b>Teacher Statements from Study</b>	<b>Wenger, 1998</b>
I have met so many new people! I cannot think of a...teacher that I have met that I would not choose to converse with again. We are a very diverse group with many different experiences and points of view. I think this makes us a better, more productive group overall. (F29FM)	Engaged diversity
I like the time we share experiences and activity ideas with others...I hate to reinvent the wheel. (M27LM)	Doing things together
I think that my relationships have become stronger and it is really hard at times to see people move on to other things. I know it is necessary and that many times the association with...leads to better opportunities. I enjoy working with...staff and leaders. (F12JH)	Relationships
I have loved getting to know everyone. Sometimes it's a little hard because everyone already knows each other, but I have seen a lot of positive progress. (M19GM)	Social complexity
I was a new teacher and my mentor teacher...asked that I help her. Her strong area was science and mine was math. (F7HM) I was asked by a teacher I respected. I like doing science, so more is better. (F19GH)	Community maintenance

**Table 10: Community of Practice as Joint Enterprise.**

Teacher Statements from Study	Wenger, 1998
I think at the teacher workshops we share the same dream for our students to go on to college, that's the whole purpose of...so we always talk about that. (M24DM)	Negotiated enterprise
I feel that I have become more of a participant in the process of guiding the direction of the program than simply a student in a workshop. As my responsibilities with my club have grown, I am more involved in planning and therefore get more long term use out of many "lessons" and projects, but there is also a lot more time commitment and stress. (F17IM)	Mutual accountability
Not sure all teachers had a shared understanding of cultural competence issues, or had high expectations for their students. (F21MM) The vision and values are communicated all year long by the people in each...school. Those teachers MUST buy into it, believe in it, and teach it. Without them, would be a lost cause. (M25E/FM)	Interpretations
To provide club members with great science/math activities at our club meeting each week. This includes prepping for the meetings, carrying them out and debriefing in order to improve. Take kids on field trips (which should involve a college connection some of the time). Hold at least one family activity night for our local community. Keep in contact with other clubs in other communities. Attend trainings to learn of new activities and tie in with the statewide...community of teachers and ...staff. Do some recordkeeping involving club meetings/membership. (F1AM)	Rhythm
We are given great topics and resources to base our meetings on but also have the freedom to run the program how we determine to be beneficial to our students. (M28CM)	Local responses

**Table 11: Community of Practice as Shared Repertoire.**

<b>Teacher Statements from Study</b>	<b>Wenger, 1998</b>
My role as a...leader is to take the curriculum supplied by...and incorporate it into my club. I have the freedom to do this in my own style and way. (M24DM)	Styles
We talk and share stories of students. A discussion on how to motivate the “30%” – those students who have earned only 30% of a semester was Friday night’s major topic. (F19GH)	Stories
The motto envision, believe, succeed...(M18CE)	Artifacts
At my first...in-service, I was impressed with how the veteran...teachers were talking about the program. When peers speak out on a program, positively or negatively, others especially early career teachers listen. That day...was well represented by the teachers they serve! (M1NM)	Actions
...I like being handed new ideas with kid activities to use, and now even the equipment and supplies to go along with implementing the ideas. I don’t have to create so much myself, so I spend less time getting ready and do a better job teaching! (M18CE)	Tools
We discuss methods and activities we have used and how students responded. We brainstorm ways to make things work even better. We share our successes and our failures trying to help others and get help in return. Every...leader I have known wanted to improve their skills so that they could be of more help to their students. We meet with that goal in mind. (F12JH)	Discourse
The workshops were good and I really enjoyed the workshops that took us places like the Andrews Forest, Mt. St. Helens. (M6HH)	Historical events
I buy into the vision more as I learn more about the background that goes into the program. I am eager to attend workshops and bring as much possible and relevant back to the club and classroom. (F27CH)	Concepts

The words of the teachers clearly express their thoughts and feelings about participation. Pairing teachers' responses with the dimensions of community of practice supports the alignment of community of teachers as community of practice and illustrates the teachers' sense of mutual engagement, joint enterprise, and a shared repertoire.

### Introduction

This section explains the process of re-examining the concept maps that were used to identify the emergent themes described earlier (pp. 45-46) to illustrate the overlap of the two constructs of community of teachers and community of practice. The codes derived from the theoretical frameworks of community of teachers and communities of practice were used to compare these two constructs. See Table 8 (p. 38) for a representation of the codes. Chapter 2 provides additional information about the codes and the coding process. A concept map illustrating the analysis process is included for each of the guiding questions.

### Initial Participation (Guiding Question 1)

Six themes emerged from the analysis of this question: student-centered; pedagogy and pedagogical content knowledge; professional development; disengagement; financial and material resources; and collegial interactions and relationships. Each is represented by the clusters on the concept maps. These thematic clusters were used as a starting point for assigning the codes. As can be seen in Figure 4 on page 60, dimensions of community of practice and community of teachers are not only present, but in many cases, they overlap. The dimensions of community of practice that emerged from this analysis were shared repertoire, mutual engagement, and joint enterprise. The dimensions of teacher community that emerge were collegial interactions, individual development, collective capacity, and change in practice.



### Continuing Participation (Guiding Question 2)

Five themes emerged from analysis of this question: student-centered; pedagogy and pedagogical content knowledge; professional development; financial and material resources; and collegial interactions and relationships. Each is represented by the clusters on the concept maps. Figure 5, on page 61 illustrates that all three dimensions of community of practice were identified with the largest focus on mutual engagement. The dimensions of teacher community that are represented included collective capacity, collegial interactions, and individual development. There is overlap in all of these dimensions with the most overlap in mutual engagement and collegial interactions.

### Interactions and Relationships (Guiding Question 3)

Shared personal practice, collegial interactions and relationships, and student centered were the three themes associated with this question. Two dimensions of community of practice arise in this analysis: mutual engagement and shared repertoire. These dimensions overlap with teacher community dimensions of collegial interaction, and collective capacity. Figure 6, on page 62 illustrates these overlaps.

### Participation and/or Experience over Time (Guiding Question 4)

Themes that emerged in response to this question: leadership; shared personal practice; student-centered; professional development; financial and material resources; disengagement; and collegial interactions and relationships. All three dimensions of community of practice are identified as illustrated in Figure 7, on page 63. Mutual engagement overlaps with the teacher community dimensions of individual development and collegial interactions and relationships. The dimension of shared repertoire in community of practice overlaps with the teacher community dimension of collective capacity. The third dimension of community of practice, joint enterprise, overlaps with the dimension of collective capacity of teacher community.

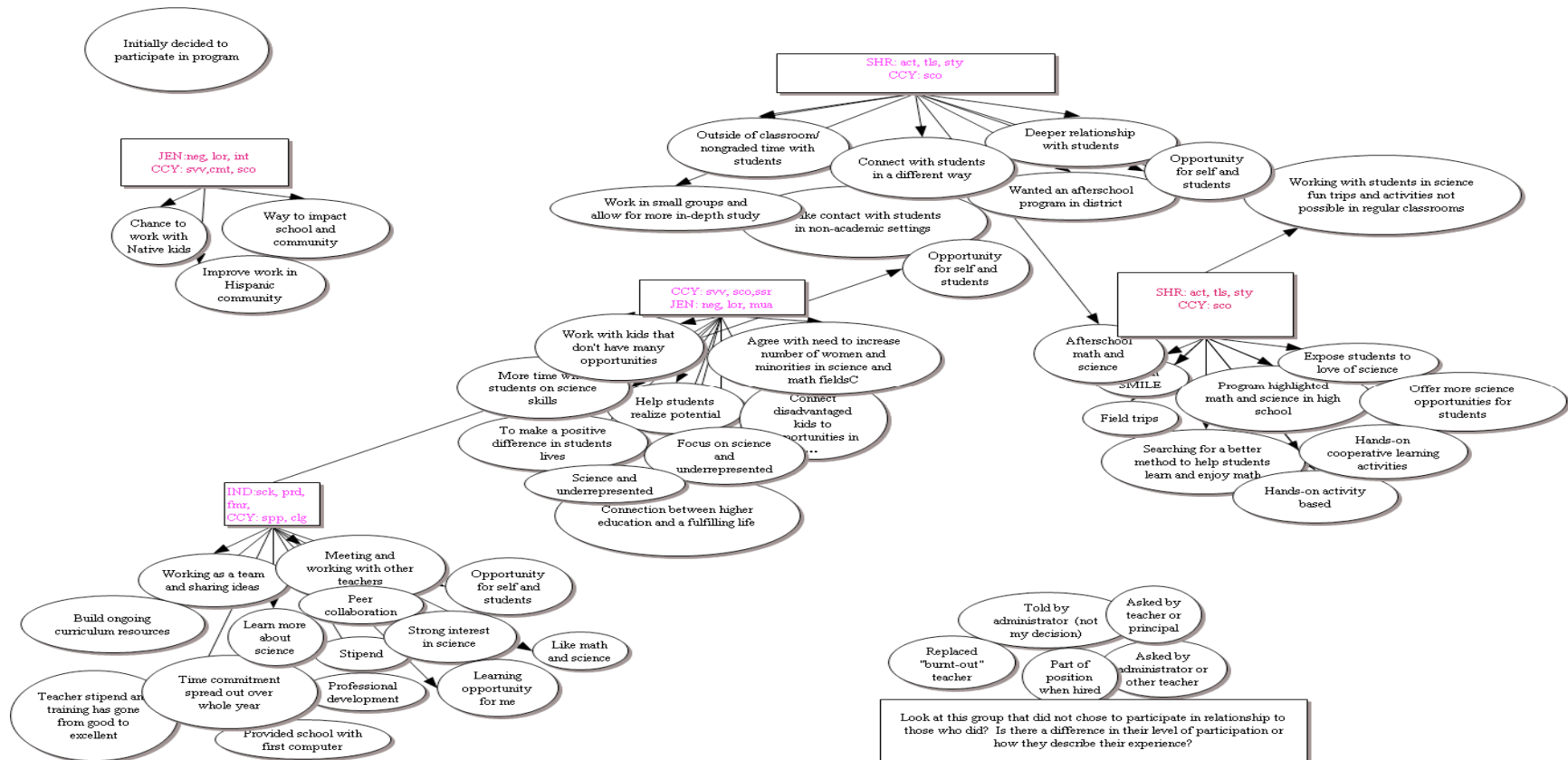


Figure 4. Initial Participation in a Community of Teachers as Community of Practice

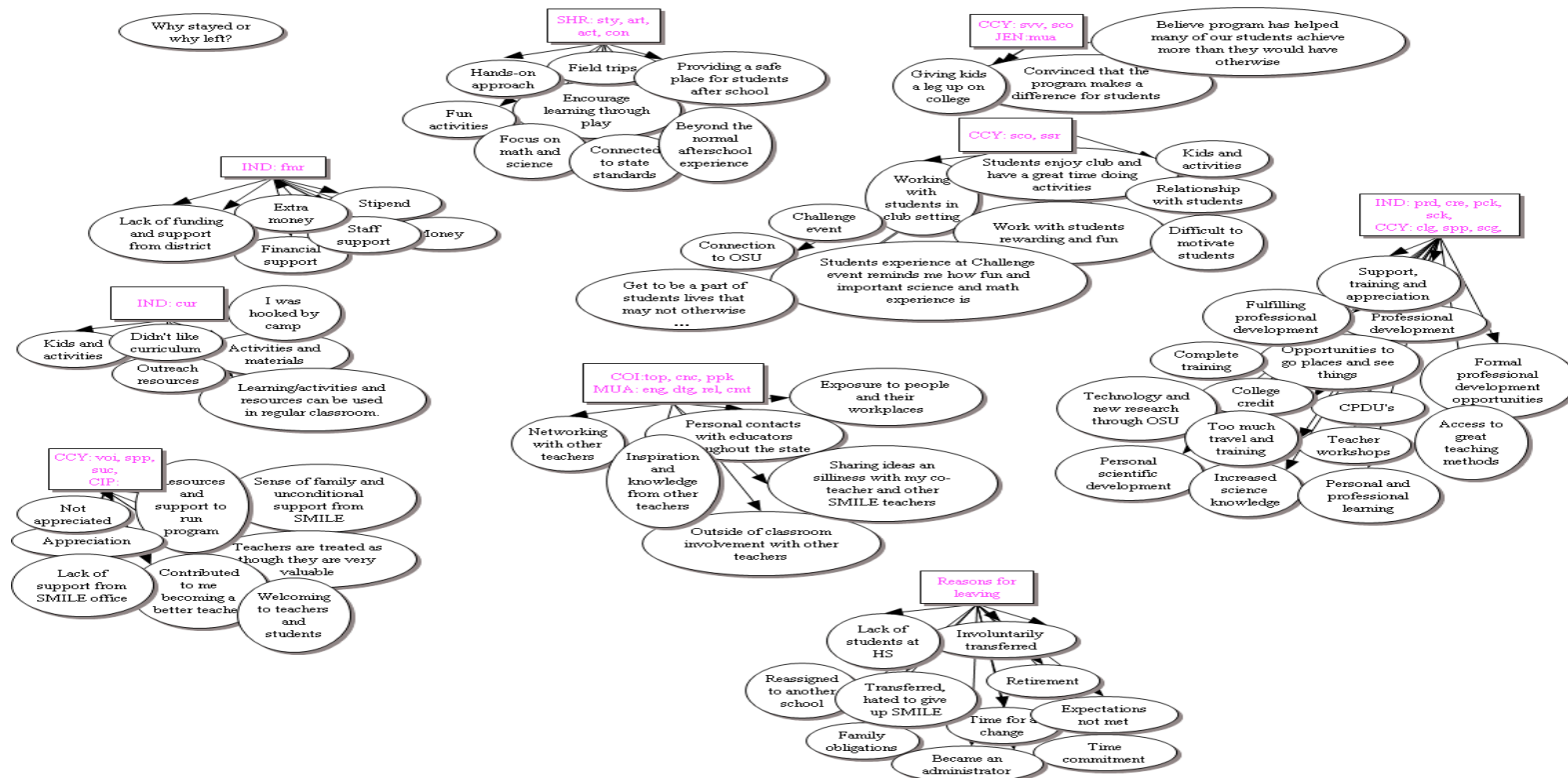
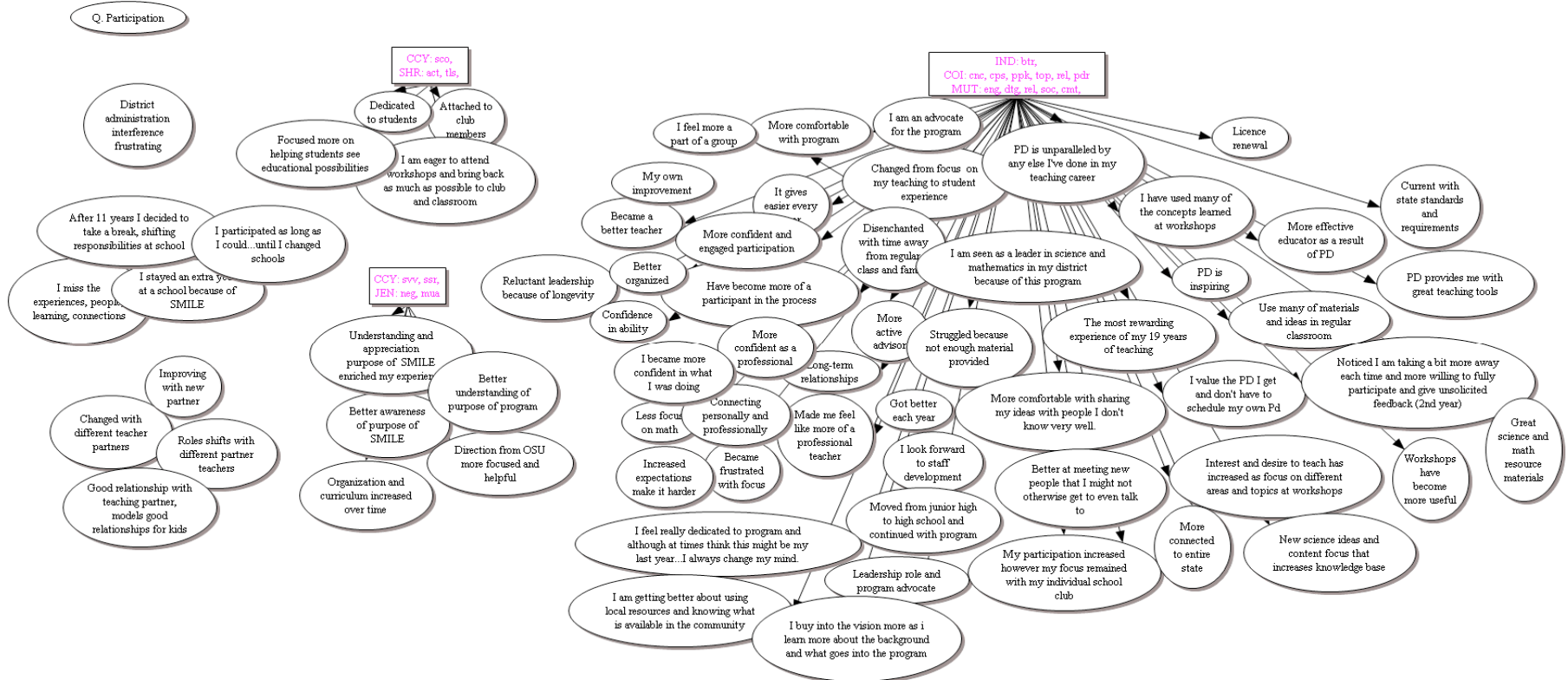


Figure 5. Continuing or Discontinuing Participation in a Community of Teachers as Community of Practice.

**Figure 6. Collegial Interactions and Relationships as Community of Teachers as Community of Practice**



**Figure 7. Participation and/or Experience over time as Community of Teachers as Community of Practice.**

### Summary

This section builds a case for the claim that this gathering of teachers constitutes a community of teachers as a community of practice. First, a teacher community is described based on other empirical studies and then from the teacher data of this study. Emergent themes from this analysis are then described to illustrate the teachers' perceptions of their participation. This is followed by a description of the dimensions of community of practice as developed by Etienne Wenger (1998) and a parallel representation of these dimensions from statements of the teachers in this study. Finally, the dimensions of teacher community are compared to the dimensions of community of practice.

In the next section, Chapter 4, this argument will be further developed by analysis of participant verification through the focus group process. The teachers' responses to a modified Q-sort methodology will be compared to the findings from Chapter 3. More particularly, this next step will examine what aspects or characteristics of each theme were rated or valued by the teachers. In addition, this analysis will look at the individual teachers and the characterization of their participation.

## CHAPTER IV

### PARTICIPANT VERIFICATION

#### **Introduction**

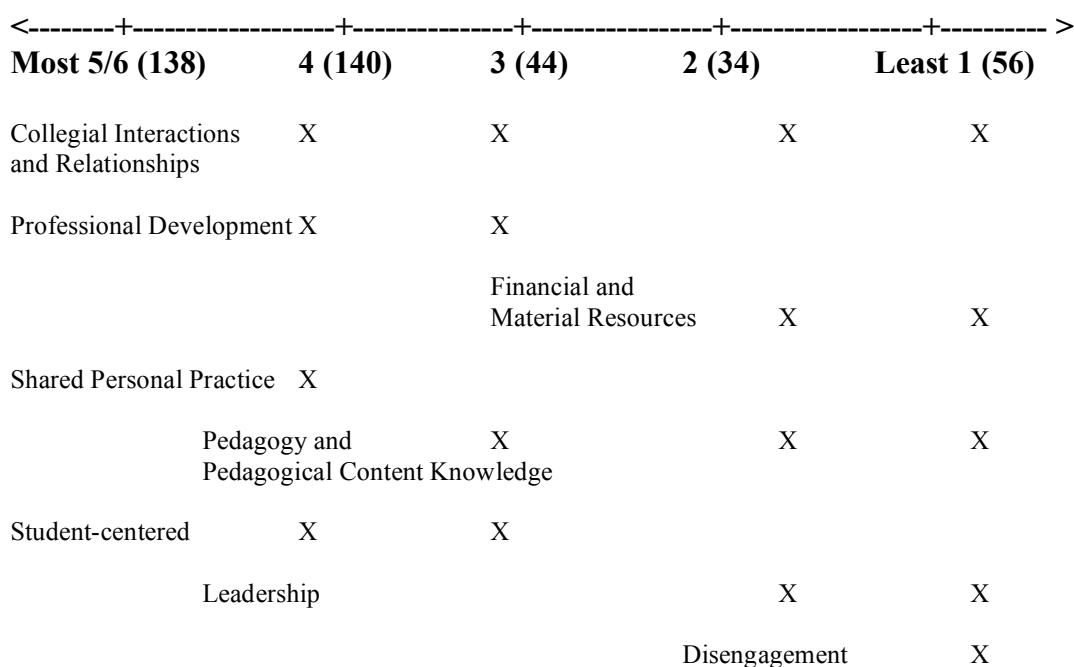
This chapter focuses on the participants' verification of my initial analysis presented in Chapter 3. This chapter tries to further explore participants' perceptions of their participation and compares the relative value they place on their perceptions. In a study with a phenomenological approach, "checking in" with the participants is a way to both verify the researcher's analysis and clear up any confusions or misleading interpretations that may have been made. In qualitative work such participant *sense making* (emphasis added) is often used and is considered a form of data triangulation (Creswell, 2003; Miles & Huberman; 1994).

The section, Participant Verification through a Modified Q-Sort, describes the results of the modified Q-sorts and provides examples of statements from the participants for each of the relative values described. The two following sections, Participants and Participation and Participation in a Community of Practice, examine the participants and their length of time in the program and their level of participation. Taken together these three sections further support my argument that this is a community of teachers involved in a community of practice.

#### Participant Verification Through a Modified Q-Sort

Transcriptions from the focus groups were used to create the following figure. As discussed in Chapter 2 (p. 34), participants in the focus groups sorted "sentence strips" into columns along a continuum using a modified Q-sort methodology. Results of the Q-sorts from all four focus groups were compiled and concept maps were created for each level along the continuum (1–5). The emergent themes (as described in Chapter 3, pp. 46-47) were identified for each relative value on the continuum. Figure 8 illustrates the relative value of statements that make up the eight emergent themes as the participants in the focus

groups sorted them. The number in parentheses represents the number of comments in each section along the continuum.



**Figure 8: Themes as Sorted on a Continuum by Focus Group Participants**

Statements related to collegial interactions and relationships are represented in all five levels on the continuum. The statements related to professional development occur in levels 5 through 3 with relative values at the higher end of the continuum. Financial and material resource statements are located in three places on the continuum, from the middle of the continuum to the least valued, levels 3 through 1. Statements classified as shared personal practice fall into levels 5 and 4 on the continuum indicating a consistent and relatively high value for this thematic area. Comments about pedagogy and pedagogical content knowledge fall in four levels on the continuum except the highest relative value. Student-centered comments fall into three levels (3, 4 and 5) and indicate moderate to high value. Statements related to leadership are in three levels, the two lowest values and the second highest value. Disengagement comments fall in the two levels representing the lowest relative value. Examining the data more closely reveals what statements or aspects of each of these themes are valued relatively



more or less than other statements. Because Q-sorts were performed by more than one focus group some comments appear in more than one level along the continuum.

Each thematic area is highlighted through quotations from the participants for each of the levels on the above continuum. The quotations are listed from least relative value to most relative value.

### Collegial Interactions and Relationships

Teachers' statements about collegial interactions and relationships appear in all five levels along the continuum. The relative value of the statements seems to parallel the development of participants' sense of community. Comments in the lower end of the continuum are reflective of teachers relatively new to the community and still on its periphery. Comments in the upper end of the continuum are reflective of teachers who are longer-term participants, ones who have moved from the periphery to a more central place in the community. Descriptions shift from not knowing many teachers and feeling like it is difficult to get to know other teachers to descriptions of long-term relationships and friendships.

1. Sometimes a little hard because everyone already knows each other, it has gotten better. (M19GM)
2. I enjoyed the interactions and getting to know the other teachers. It was an opportunity to talk with others in my profession from different schools. (M6HH)
3. There is a real sense of community; especially with those who are in the same level and who have several years of experience. (M22HM)
4. My relationship with other teachers has become more comfortable as we all get to know each other. (F9AH)
5. I know so many of the people reasonably well now and I look forward to the conversation, activity, and learning opportunities with the teachers. (M15LM)

### Professional Development

Comments about professional development reflect the relatively high value the teachers have for the professional development they receive from their participation in this program. The teachers refer to the professional development as an opportunity to learn. Professional development was also credited for feeling like a more *qualified* (emphasis added) teacher.

1. I enjoyed the hands-on activities and cooperative learning that...provided our students. It was another learning opportunity for me. (M4D4)
2. Through the years, I have become more competent in my teaching abilities and felt more confident in knowing how to use the information presented during professional development session. (F13FE)
3. I feel better about teaching science both in and out of my classroom because of the...training and work with...students. (F25AE)

### Financial and Material Resources

Although financial and material resources are valued and appreciated by the teachers who participate in the program, it was not the main reason they continued to participate. A stipend for their work was a benefit. Earning continuing professional development units and college credit was valued slightly more. Access to materials and resources that their schools or district could not provide was relatively important.

1. Receiving a stipend for my work outside the teaching day and the promise of professional development was a plus. (F13 FE)
2. I am able to earn CPDU's and college credit to help in renewing my teaching license. I am also able to obtain new equipment through the...club, which I use in my classroom. (M21DH)
3. It also gave me access to resources that were impossible to receive from my district. (M8JM)

### Shared Personal Practice

The value of shared personal practice received high ratings from the teachers who participated in this research. The opportunity to work together, share ideas, and learn from each other was described by most participants as an important factor in their continuing participation. Shared personal practice was

mentioned by those who no longer participate as one of the things they missed the most.

1. I enjoyed the team teaching situation and the professional development that came from working as a team and sharing ideas. (M18CE)
2. I learned a lot from other...teachers. It made me a better science teacher, being able to share with others. (F5HE)

### Pedagogy and Pedagogical Content Knowledge

The relative value for pedagogy and pedagogical content knowledge seemed to be reflective of whether the individual teacher liked the curriculum. Those teachers, who did not care for the curriculum or the focus, rank this factor relatively low while, those teachers, who did liked the curriculum and focus rated this factor relatively high.

1. I became frustrated with narrowing of the focus. (F3DE)
2. The curriculum was challenging with real life issues. (F14CH)
3. The program continues to supply us with current science and math activities that are not only fun and interesting, but also tie into the state standards for science. (\*M24DM)
4. It was a way for me to continue my search for better methods to help my students learn and enjoy math and science more. (F12JH)

### Student-centered

A student-centered focus was consistently ranked as important to all teachers in this study. The teachers' responses reflect the importance each placed on increased opportunities for student learning. The teachers valued the additional involvement with students outside of the regular classroom experience.

1. It is very satisfying seeing the impact the program has on kids; the subtle change from saying, "if I go to college," to "when I go to college." (M19GM)
2. I enjoy doing activities outside of the classroom with my students in a non-graded situation. (\*M15LM)

3. Wanted to offer more science opportunities for kids, wanted to be able to work with smaller groups-allowing for more “in-depth” study, wanted to work with kids that don’t have as many opportunities. (M11MM)

### Leadership

Leadership within the community of practice was ranked with a low relative value. Some teachers expressed a reluctance to be a leader within their peer group. Other teachers described an expectation or acknowledgment of leadership in their district as a result of their participation in this program.

1. Sometimes, I feel strange at...events. I guess my time in the program has led others to look to me for leadership, when I’m (naturally?) reluctant to be a leader among those I consider my equal. (\*M14EH) [Only reference to leadership in either level 1 or 2]
2. Within the district in which I worked, others looked to me for leadership. (M3NH)

### Disengagement

All the statements related to disengagement received a low relative value. Disengagement was ranked low by some teachers due to personal and family issues. Other teachers ranked disengagement low for professional reasons, as they tried to balance their regular classroom workload with their participation in this program.

1. I became a little more disenchanted due to time away from my regular classroom and family. (\*M7FH)
2. The most difficult part of the program is balancing the workload of ...club activities with classroom responsibilities. (\*M13HH)

### Summary

The results of this sorting process suggest that teachers have a strong focus on students. They value their time together to talk about their shared practice and to learn from each other. The ongoing professional development allows them to remain up-to-date in terms of licensing requirements and state science and mathematics standards. A focus on science content and teaching strategies varies in importance. A leadership role in science and mathematics at the district level is rated relatively high while a leadership role within the community of practice falls

on the lower side of the continuum. Disengagement is based on curriculum, interactions, and personal choices. The sorting of statements into these five separate nodes along a continuum is not meant to suggest that statements that go into one column are totally separate from statements that were placed along the continuum before or after another statement. It merely reflects the process of the focus group participants at that particular moment in time.

### Participants and Participation

In this section, individual data about teachers' participation, length of time in the program and participation over time is described. In Table 12, Table 13, and Table 14, participants within the same teaching level (i.e., elementary, middle, and high school) are compared. The table identifies the participant by gender, reference number, community, longevity in the program, and participation over that time period. An asterisk (\*) indicates current participation. Each table is followed by a discussion of the data in the table.

**Figure 12: Length of Time in Community and Participation (Elementary)**

<b>Level Elementary</b>	<b>Years in Teaching</b>	<b>Years in Program</b>	<b>Participation (%)</b>
F2C	18	4	69
F3D	16	5	-
F4I	7	2	87
F5H	24	5	57
F8A	5	2	63
F10B	20	6	54
F13F	25	11	100
F16H	10	3	78
*F18E	5	3	75
F20D	7	1	25
*F22J	5	3	83
*F23A	2	1	50
F24F	5	1	100
*F25A	5	1	100
*F26H	5	4	63
F30J	3	3	67
M2ID	20	6	87
*M18C	22	16	100

The group is composed of two males and seventeen females. These teachers represent teaching experience ranging from two to twenty-five years. Half of the teachers have degrees beyond a bachelor's: either a master's degree in elementary education or a master of arts in teaching. All but one has a bachelor's degree in elementary education. Length of time in the program ranges from one to sixteen years. Participation ranges from 50% to 100% participation; the one outlier is 25% participation. This teacher was filling in for another teacher who became ill and had to resign. Four of the nineteen participants have 100% over their time in the program; two have been participating for one year and two have been participating for eleven and sixteen years respectively. Nine had a participation rate of 78% or greater. Four participated at a rate of 63% to 69%. Three had participation levels from 50% to 57%. Twelve of the respondents are no longer participants in the program.

**Figure 13: Length of Time in Community and Participation (Middle School)**

<b>Level Middle School</b>	<b>Years in Teaching</b>	<b>Years in Program</b>	<b>Participation (%)</b>
*F1A	17	3	75
F7H	10	1	100
*F11H	9	9	75
F15M	18	3	100
*F17I	7	2	87
F21M	15	3	-
*F29F	4	3	100
M1N	9	1	100
M4D	10	3	75
M8J	7	7	-
*M9J	7	6	75
M10B	20	5	95
M11M	18	5	100
*M12J	6	2	86
*M15L	17	5	100
*M16H	24	7	86
*M19G	2	2	86
M20A	10	1	50
*M22H	15	9	75
*M23E	9	4	87
*M24D	21	17	100
M25E/F	31	10	-
*M27L	14	2	75
*M28C	8	3	75

This group is represented by eight female and seventeen male teachers. Sixteen have degrees in a content area, eight are in a field of science, and one is in mathematics. The other nine are in elementary education. Thirteen hold advanced degrees. Two have a master of arts degree in teaching; four have a master of science degrees in education; one has a master of science in curriculum and instruction; one has a master's in science education; one has a master's in mathematics education; one has master's in education administration; and the other three have a masters of science degrees in education. The teaching experience ranges from four years to twenty-four years. Participation in the program ranges from one year to seventeen years. Their participation ranges from 50% participation to 100% participation. Seven of the twenty-five have 100% participation. One had a participation of 50%, all the others participated at 75% or higher. Eleven of the twenty-five are no longer participating in the program.

**Figure 14: Length of Time in Community and Participation (High School)**

<b>Level High School</b>	<b>Years in Teaching</b>	<b>Years in Program</b>	<b>Participation (%)</b>
F6C	13	3	67
F9A	20	3	58
*F12J	27	8	78
F14C	17	5	-
*F19G	12	8	84
*F27C	3	3	67
*F28H	2	2	75
M3N	31	1	100
M5C	14	1	50
M6H	10	6	58
M7F	20	6	-
*M13H	8	8	100
*M14E	12	12	100
M17A	2	1	64
*M21D	16	12	69
*M26G	29	8	78

Seven teachers in the high school group are female and nine are male. Teaching experience ranges from two years to thirty-one years. Two teachers have bachelor of education degrees; two others have bachelor degrees in mathematics education and science education respectively; the other twelve have bachelor

degrees in a content area; and six are in a field of science. All have advanced degrees. Five have Master of Arts degrees in teaching; six have Master of Science degrees in science education; two have master's degrees in mathematics education; two have master's degrees in education; and one holds a doctorate in a non-science field. The length of time of participation for this group is from one year to thirteen years. They have participated from a low of 50% to a high of 100%. Three teachers have 100% participation during their time in the program. Eight of the respondents are no longer participating in the program.

### Participation in a Community of Practice

Findings from this chapter and Chapter 3 offer evidence that furthers the case for calling this gathering of teachers a community of teachers and this community of teachers a community of practice. The teachers' individual and collective voices use the words and language of teacher community and community of practice when they describe their initial reason(s) for deciding to participate as well as their reason(s) for continuing. Even the teachers who no longer participate respond in language that reflects their perception of having been a participant in a community. Although teachers may not refer to their participation specifically as being part of a community of practice, the language they use and the descriptions they provide align with the construct.

The following quotations from the teachers describe or characterize their participation over time or their reason(s) for no longer participating. They are divided into five sections: participation from one to three years, four to six years, and seven to nine years, from ten to twelve years, and from sixteen to seventeen year. For each division, quotations are from current teachers and former teachers. An asterisk identifies the current teachers.

From one to three years:

I really enjoyed the opportunity I had to work with the...program. It was wonderful to have professional development activities that met my interests in science and to have time to interact with other teachers. The opportunities that...students are able to have [*sic*] so many doors for them. It was nice to see what interested students and to find activities and field



trips that matched those interests. Thank you so much for the opportunity!  
(F24FE)

Mostly a positive influence. Some parts took too much time away from family. (F16HE)

I feel better about teaching science both in and out of my classroom because of the...training and work with...students. (\*F25AE)

I have enjoyed the autonomy and freedom that this program has allowed me as a teacher experience with a range of students. I have enjoyed going into enriching activities with students, so they can continue onto *[sic]* college themselves. The more independence to explore decreases with, with set curriculum and outside topics, the less motivated I feel as a teacher. (\*F18EE)

...does it right!...is student-focused and teacher focused. The student activities were well planned, the campus challenge day was exceptionally organized, and it was fun! For an early career teacher, like I was...was some of the best professional development that I ever had...had high expectations for its teachers, but was also there to support teachers through its professional development, and prepared teacher leader folders, newsletters, professional library, staff drop-ins, and more. I really felt supported by the...staff...(M1NM)

I have found it to be rewarding and fulfilling. I have also found it to be a much bigger commitment than I realized with my other activities.  
(M20AM)

I feel listened to, and respected, and somewhat pampered by the staff at ... Their regard for us as teachers and efforts to provide for us and our students gives me a very positive boost. (\*F17IM)

Enthusiastic and very committed to doing the best for kids. The staff pays attention to the feedback we give them and acts to improve the program based on this feedback (As evident by the improvement in available, easy-to-prepare activities this last year). (\*F1AM)

It was a great experience working with students. Some of the expectations of the people at the...program were higher than I was able to cope with. Although the workshops were very well done it was too much time traveling back and forth from this far away. I was gone too much from my regular classroom. (F7FH)

My expectations were not met. I found it difficult to motivate the students. Attendance was inconsistent and there was strong tendency to make a

social science out of our 1.5 hours together each week. I came to discover that there are a lot of people both locally and many miles away, who really want to see our youth do well, and they are willing to provide the means for them to do so. (M5CH)

I have received many good ideas from conversations at the workshops and events. The time to interact with other teachers is one of the highlights of the program for me. (\*F9AH)

The program has increased my cutting edge science knowledge, current best practices, teacher development, and I am able to visit sites in...I have never been. (\*F27CH)

From four to six years:

I became more confident after the first year, and enjoyed participating more. The time involvement became more difficult as my own children needed more and more of my time. (F5HE)

The...program is a very valuable program for the students we addressed. There were many positive aspects of my association with the program, but there also existed a definite caste system [to allocation of resources]. (M2IE)

The more teacher workshops I go to the more I feel like I am building relationships with other...teachers. (\*F26HE)

I've taught at six schools in three sites, rural and city, large and small. By far the best experience I've had professionally at any place. It helped me with my regular classes and performing my duties as a...advisor. I stayed an extra year at the school because I really enjoyed everything about... (M10BM)

The only reason [for leaving the program]...lack of funding and support [from district]. (M11MM)

I believe I have learned a great deal from these experiences with my students and my fellow teachers, both within and outside my district (\*M15LM)

I am more comfortable talking with other teachers and staff than when I started. This is one truly dedicated group of people. (\*M23EM)

From seven to nine years:

I liked the way my kids and I [*sic*] were treated. I always came away from...feeling like I had learned something important that was worth

sharing with my non...kids—and I did pass it on. I always came away from ...feeling like I was doing something very ‘right’ for my students. I will cherish my...experience forever. My memories of my...friends from all over the state of...will never be forgotten. (M25E/FM)

The teacher training is the best professional development I have had. The kids get really connected to colleges. The...staff is very supportive and work hard to connect us to resources. (\*M22HM)

From ten to twelve years:

I have fond memories of my experience with...The program gave me a chance to make a more personal connection with students and I was able to see how they benefited from their opportunities in...My interactions with...coordinators and teachers was equally rewarding. I am thankful for the information and strategies I received, and for the chance to view how other teachers and districts approach teaching. Professional development opportunities provided by...have given me a solid base and make me feel more competent and capable throughout my teaching career. (F13FE)

I continued with...because I loved the program, the kids, and the activities. I quit because it was time. (F14CH)

I enjoy the more intimate interactions with students. It is very interesting to learn all the hot new science information. I get a lot of PDU's so I don't have to worry about them. I learn new things to do in my classroom and get pre-made activities along with materials. (\*F19GH)

The money is definitely a factor but I still think the reason I have stuck with...is because of the opportunities to go places, see things, and be exposed to people and their workplaces that I probably wouldn't be able to otherwise. (\*M13HH)

I have had an enjoyable and educational twelve years with....Lately the benefits have been “selfish” in the fact that I am able to earn CPDU's and college credit to help in renewing my teaching license. I am also able to obtain new equipment through...which I use in my classroom. (\*M21DH)

I became convinced that the program was making a tremendous difference for students. The program also provided me with great personal satisfaction. This stemmed from the formal professional development opportunities, as well as the personal contacts I gained from educators throughout the state. I also came to appreciate tremendously the sense of family and unconditional support that the...program staff provides. (\*M14EH)

From sixteen to seventeen years:

...has allowed me to mature in my field, becoming better at teaching, and rewarded me with support, training, and appreciation. (\*M18CE)

I have been with the...program for seventeen years. I can't believe it has been that long. If I felt the program was not up to par I would have been gone years ago. This program is great and has helped me become a better teacher throughout my career. Unless the funding stops, I see myself being with...until I retire. (\*M24DM)

The teachers' comments above illustrate a pattern of participation that indicates developing membership. Teachers talk about initially feeling a bit uncomfortable within the group, not as sure of themselves, and less willing to share their ideas or practice. Over time there is a shift in participation. Teachers start to talk about their increased confidence. They are more willing to share their ideas and practice with others, find the interactions and feedback supportive and helpful, even contributing to them becoming better teachers. Another shift in participation occurs when the teachers start to see themselves as responsible for the direction of the program. Many describe moving away from being a passive participant to a person who has a role in guiding the direction of the program. A shift in participation is, in fact, the move from legitimate peripheral participation to more central participation as an expert in the community.

Not all teachers experience these shifts. Some move on before a shift occurs; others stay on the periphery during their entire time in the community. Some teachers become engaged in sharing personal practice and report an increased level of comfort in interactions with other teachers and program staff over time; some report being comfortable with teachers and not as comfortable with program staff; and a few report the opposite. There does not appear to be any specific point in time when such a shift occurs. A shift in perceptions of participation seems to be more reflective of the individual teacher and his/her own sense of belonging. The expression of belonging suggests the development of identity of membership, an important characteristic of participation in a community of practice.

Levels of community also play a role in this sense of belonging to a community. Teachers at the elementary, middle, or high school levels talk about more extended and purposeful interactions with teachers within their own teaching level. Two elementary teachers reported that they sought out information on how to teach particular science content from middle school and high school teachers they have gotten to know because of the program. However, when teachers are talking about content and student specific issues most of the references are to teachers within their own teaching levels. When specific school or district issues, administrators, or policy are discussed, there is talk across levels. There is also talking across levels related to specific program issues and responsibilities.

The opportunity for teachers to interact and collaborate with their colleagues is described by these teachers as an important factor in their ongoing participation and something they miss after they discontinue their participation. The access to on-going and high-quality (as described by the teachers) professional development is perceived as a benefit of participation. Another benefit is the ability to earn continuing professional development units and graduate level college credit.

Teachers' responses reflect the characteristics of participation in a community of practice. They express a mutual engagement around the goals and focus of the program. They talk about their interactions with each as well as the activities they do together. They describe developing and on-going relationships with other teachers and the challenges of working in a community where some people already know each other and others are relatively new to the group. And they talk about missing teachers who leave the program and valuing the ideas and experiences of new teachers coming into the community.

Teachers describe their involvement in a joint enterprise of creating opportunities and pathways for student success. All teachers involved express accountability to students and their clubs while others talk about an overall responsibility for the program as well. As in any community there are different interpretations and ideas about what is of importance or value as well as inherent tensions expressed from participants about the community itself. Still there is a

rhythm and a pattern of the activity within the community that teachers can and do articulate. Teachers also express appreciation for the ability and freedom to facilitate their clubs in ways that are appropriate for their particular communities and students.

Reading through the responses creates an image of the shared repertoire that the teachers share in this community of practice. There is a common framework that teachers use to describe the work they do; they talk about their students, their clubs, and implementing activities in their own manner or style. Sharing stories of students- their successes and failures-and searching together for solutions are common threads in these responses. Teachers describe program artifacts such as a teacher handbook and a program motto that continue to guide them. There are a common set of tools that teachers talk about along with curriculum, resources, activities, and materials to use in their clubs. Teachers describe conversations and interactions with each other around shared personal practice and the many ways they receive and gain ideas, support, and knowledge from their colleagues.

### Summary

Teachers' responses as to why they continue to participate or chose to no longer participate are grounded in their experiences in the program, relocation or retirement, conflicts with regular teaching assignments or family and other personal issues. Disengagement with the program itself comes from the curriculum (they didn't like it), the expectations and obligations of the program, student motivation, and interactions or experiences with program staff or other teachers that made them feel uncomfortable. Reasons for continuing engagement were based on curriculum and activities, the opportunity to work with students in a non-classroom situation, a focus on science and mathematics, the ability to connect students to higher education, the opportunity for their own continuing professional development, and their interactions with colleagues. Professional development and interactions with colleagues were valued both by continuing and non-continuing participants. Most teachers commented about the ways in which they felt supported, valued, or appreciated throughout their time of participation. The

teachers' responses clearly indicate their focus on students and opportunities for students.

## CHAPTER V

### DISCUSSION AND IMPLICATIONS

#### **Discussion**

##### Introduction

This chapter expands upon the findings from the previous two chapters. In the following sections, each theme and its characteristics are summarized. This summary is followed by claims about the data from this study. Each claim is further supported by connecting it to other similar empirical studies from existing literature, first in table form, then in a brief discussion of the significance of the claims as related to community of practice. This comparison to other studies serves as both a review of the relevant literature and as a form of data triangulation, helping to verify or clarify my claims.

In summary, this study found that participants in a community of teachers as a community of practice perceive their participation as an opportunity for professional growth and development. Teachers' perceptions of participation suggest that they view participation as an opportunity to interact with colleagues, share personal practice, learn from each other, and to engage in formal professional development.

#### **Emergent Themes**

##### Introduction

The first stage of analysis produced a set of themes that emerged from the data. The themes developed through a combination of working up from the data (as in grounded theory) and down from the frameworks of community of practice and teacher community (a heuristic/interpretive approach). The relationship of these themes to community of practice and teacher community frameworks is presented below along with the detailed descriptions of the themes.



In addition to presenting the teachers' voices from which my research claims are articulated, this section grounds these claims in four bodies of empirical studies:

- teacher professional growth;
- teacher communities of practice;
- teacher learning communities; and
- professional development.

Empirical studies were chosen for review as part of the analysis.

Specifically, I have reference empirical studies that are directly related to the claims made in this investigation. Each of the cited studies has its own strengths and weaknesses; collectively, they offer a backdrop for the claims drawn from this research, while providing a separate form of data triangulation within which my claims can be viewed.

Each theme is described in relation to the findings from this study. This description is followed by a claim about the data and is further supported by other empirical studies along the same theme (Tables 15-22). Finally, the significance of the findings is discussed in relation to the community of practice theoretical perspective.

#### Participation Provides New Opportunities for Leadership

A more accurate description of this theme might be “reluctant” leadership. Among their peers, teachers reported feeling uncomfortable assuming a leadership role, as they feel they are all equals in the profession. Teachers reported that districts turn to them for leadership in science and mathematics because of participation in program, particularly those with longer terms of participation. Teachers also felt a sense of empowerment and responsibility for guiding the program upon being asked for their input and feedback.

Sometimes I feel strange at...events. I guess my time in the program has led others to look to me for leadership, when I am (naturally?) reluctant to be a leader among those I consider equals. (\*M14EH)

I have taken a leadership role out of the two teachers that run our program, also acting as a mentor for our middle school program. These leadership roles have made me feel somewhat of an advocate for...and a leader at our school. (\*F22JE)

### Claim

Participation provides new opportunities for leadership both in the community of practice and in the teachers' school or district.

**Table 15: Supporting Evidence for Leadership Claim**

Supporting Evidence	Source
Teacher communities provided an alternative to the traditional route to leadership.	Grossman, et al, 2001
Participation in Texas Regional Collaboratives for Excellence in Science Teaching provided leadership opportunities not always available, especially to early career teachers.	Meyer, unpublished paper, 2005

### Significance

Although some teachers express reluctance in assuming a leadership role, the opportunity to explore this aspect of themselves—and to hear themselves referred to as leaders and looked to for leadership—may help facilitate a change in the way such leadership is viewed professionally. Within teaching, there are minimal avenues for advancement above and beyond becoming an administrator. In most schools, teachers have opportunities to become involved in school-based decision-making through site councils; in larger schools, a teacher can become a department chair (Grossman, et al., 2001). Because of the ongoing professional development that teachers receive through their participation in a community of practice, teachers become a resource for districts, especially the smaller-sized ones. Such leadership potential can be empowering for teachers and add to their sense of professionalism and job satisfaction (Meyer, 2005).

### Level of Participation and Disengagement

Descriptions from teachers indicate that disengagement sometimes occurs even before participation, especially in those cases where teachers are not given

any choice about participating, i.e., they were directed by their administrators to participate or told it was part of their position when hired. In some cases, these reluctant participants overcame their initial reluctance and continued with the program; others left after their first year. Of the fifty-nine teachers who completed the questionnaires, only five did not voluntarily decide to participate. Others describe disengagement over the course of participation because of a perceived lack of interest and motivation on the students' part. Several teachers didn't like the curriculum, or felt that the curriculum emphasized areas of little interest to them. Some reported that participation took too much time away from their regular classrooms, that they had too many other obligations (personal or professional) or that the time commitment to the program was too great.

I was asked to [by principal] and found I really liked teaching in an afterschool program, enjoyed the team teaching situation and the professional development that came from working as a team and sharing ideas. (M18CE)

My principal put it to me bluntly; one of you is going to do this...program. The three of us were all new to the school and had never heard of ... before. The other teachers said, "Absolutely not," so that left me. Wanting to please my principal, I hesitatingly said I would do it, and I'm glad I did! (\*F22JE)

It was time to leave due to excessive travel and workshop requirements. (M7FH)

### Claim

Disengagement may come from participation or from other personal or professional factors.

**Table 16: Supporting Evidence for Disengagement Claim**

Supporting Evidence	Source
Identified voluntary participation and equal (fair) treatment as factors in continuing participation.	Lieberman & Grolnick, 1996
Teachers who voluntarily participated in partnership expressed less resistance to examining their practice.	Borthwick, et al., 2003
Teachers felt a sense of empowerment as professionals in making choices about their participation in professional development.	Bainer & Wright, 1998

### Significance

Although it is an issue, disengagement in and of itself touches on two larger issues in the teaching profession: professionalism and empowerment (Lieberman & Grolnick, 1996). The traditional and widely held view of teachers and teaching is in direct conflict with the changing emphasis on teaching as a learning profession (Ball & Cohen, 1999; Darling-Hammond & McLaughlin, 1999). It is also at odds with current reform efforts. Teachers who had been told by their school administrators that they would take part in a particular program expressed reluctance to fully participate in the process (Borthwick, et al, 2003). Chapter 1's discussion about changing the focus of teaching from solely an acquisition focus of knowledge to participation as learning focus is relevant here. Such a refocusing suggests that teachers should be encouraged to participate in ongoing professional development but that they should also have a voice in deciding how and what that professional development will be (Bainer & Wright, 1998). Additionally long-term participation by teachers requires buy-in for the program or the curricula.

### Participation with a Student-centered Focus

Student-centeredness describes teachers' conversations on the subject of student learning and engagement. Teachers talked about having a different relationship with students because of their involvement in such a program as well as the opportunity to make more personal connections with students. Talk around student-centeredness focuses on how to help students see their potential, to make explicit connections for growing aspirations for higher education, and the role the program has had in helping students better achieve. Teachers described conversations about the curriculum as well as activities and ideas for adapting or changing lessons or activities to make them work better for students. Descriptions of conversations include discussions of science and mathematics content, including the value of spending more in-depth time on mathematics and science with students. Three topics that arose for nearly all the teachers were the

opportunities to take their students on field trips, to bring them to college campuses, and to not worry about grading the students.

As I became more involved in...and felt more comfortable in the process and organization, my participation increased, however my focus remained with my individual school club. (M11MM)

The program gave me a chance to make a more personal connection with students and I was able to see how they benefited from their opportunities. (F13FE)

I enjoyed working with students at my school in a more personal learning environment. When our current class sizes are 30:1 ratio...the...experience was a treat to teach with another adult and a smaller group of kids who all wanted to be participating in our program. (F20DE)

One of my favorite things about...and many kids' favorites as well are the fieldtrips that we get to go on. Students learn soooooo [*sic*] many things that they would not otherwise. Going on fieldtrips makes the club alive. Also, the more interactive the lessons are the more students enjoy them. (F26HE)

### Claim

Teachers' participation is motivated by their perceived ability to enhance interactions and deepen their relationships with students, to provide additional learning opportunities for students especially in the content area, and to help students see possibilities they might not otherwise envision.

**Table 17: Supporting Evidence from Student-centered Claim**

Supporting Evidence	Source
Teachers felt a responsibility to student success.	Little, 2003
Professional development that focuses on student learning identified as a criteria for identifying effective professional development.	Guskey, 2003

### Significance

Much of the teacher "talk" in this current study revolved around students and student learning. Teachers wanted to not only build their skills and strategies to help students be more successful in mathematics and science but also, to

provide them with additional opportunities in these fields. A shift in focus from teaching to a focus on student learning helps reframe the way teachers think about teaching and their practice (Guskey, 2003). A student-centered focus to professional development provides the context for teachers to examine their practice together as a community (Little, 2003).

### Participation to Enhance Pedagogy and Pedagogical Content Knowledge

The characteristics of this category focused on science and mathematics content and references to skills, techniques, or strategies that helped the teachers teach these subjects and perhaps even better than they would have without this experience. Teachers perceive an increase in their own understanding of scientific content knowledge and thus feel more skilled at teaching the content. The connection to a university—with exposure to current research through presentations from scientists and investigators—is mentioned by a number of teachers as something that fostered their continuing participation. Having access to activities and materials developed specifically for their clubs was an important factor in supporting teachers and their ongoing participation s well.

The program continues to supply us with current science and math activities that are not only fun and interesting, but also tie into state standards for science. (\*M24DM)

Since I was not a science person...greatly increased my knowledge and excitement in science. This greatly increased my teaching ability in science, which increased all of my students' learning opportunities. I came away from...excited about science experiences and what I was teaching (F7HM)

### Claim

A focus on science content, a connection to “real world” science, and new strategies for teaching science support teachers’ continuing participation.

**Table 18: Supporting Evidence for Pedagogy and Pedagogical Content Knowledge**

Supporting Evidence	Source
Teachers claimed increased content knowledge supported ability to teach inquiry; sharing practice with others provided a support system for sharing and testing new ideas.	Avery & Carlsen, 2001
Found that teachers in their study had developed a new way of listening to speakers; listening for ideas for activities, new ways to integrate new ideas into teaching, and felt able to critique material more objectively than before.	Stein, Silver, & Smith, 1998
Connected research scientists and science teachers as well as provided ongoing support for the teachers after they left the two week summer institutes. Teachers self-reporting indicated a sense of empowerment and confidence.	Howe & Stubbs, 1996

### Significance

The research studies cited above suggest a community of practice approach for teacher development. A common thread to their argument is that science and mathematics content knowledge is as much a social as an individual construction and that the practice of mathematics and science is basically a social practice (Stein, Silver, & Smith, 1998). The findings from this current study resonate with the findings of this earlier research.

Stein, Silver and Smith (1998) describe collaborative efforts in a national educational reform project, “Qualitative Understanding: Amplifying Student Achievement and Reasoning (QUASAR)”, a program designed to enhance middle school mathematics instruction and achievement for students attending schools in economically disadvantaged neighborhoods. Teachers who participated in this program felt that their involvement gave them a venue to collectively examine how they were teaching mathematics and how they might change their practice. One teacher reported that she felt like she was able to make changes in practice because she had been treated like a professional, a response similar to some teachers in this current study.

In a similar study that focused exclusively on science content, Howe and Stubbs (1996) describe a professional development model called SCI-LINK. SCI-LINK connected university research scientists and science teachers in two-week summer institutes. It also as well as provided ongoing support for the teachers once the institutes ended. Teachers' self-reporting from SCI-LINK indicated a sense of empowerment and increased confidence in their ability to teach science; this is similar to a number of teachers in my research. Avery and Carlsen (2001) examine teacher membership in a community of practice and the teachers' level of curricula innovation. These teachers clearly felt a sense of belonging to a community. Opportunity to interact with colleagues to talk about curricula and its implementation in their classes was cited as a source of support in attempting to implement change in their practice. Again the comments from the teachers in my current study offer very similar claims from the teachers' perception.

#### Participation for Financial and Material Resources

The sustained financial support for the program—through a stipend for teachers, a materials budget, and the availability of resources and materials to facilitate the after school programs—is all perceived as an important factor in supporting the teachers' on going participation. Teachers who do not perceive this support as adequate become disengaged and eventually stop participating. Several teachers also describe the additional bonus of having access to the materials and resources not only for their clubs but for their regular classrooms too. Although the stipend is considered important and certainly encourages ongoing participation, it is equally clear that it is not the main reason most teachers continue to participate.

I came to discover that there are a lot of people both locally and many miles away, who really want to see our youth do well and they are willing to provide the means for them to do so. Whether it's time, money, books, equipment, or raw knowledge...has the resources. (M5CH)

It also gave me access to resources that were impossible to receive from my district. (M8JM)



Help with funds for field trips and materials is [*sic*] awesome. I am so burnt out on fundraising... (\*F17IM)

... is one of the few after school programs that has the financial support, staff support, and outstanding outreach resources. (\*F23AE)

### Claim

Financial and material resources support teachers continuing participation.

**Table 19: Supporting Evidence for Financial and Material Resources**

Supporting Evidence	Source
Access to materials and lessons, especially for rural schools with limited resources was a factor in continuing participation.	Meyer, unpublished paper, 2005
Participants in the partnerships surveyed felt that a partnership with a university helped in securing resources and funding.	Borthwick, et al., 2001
Three-fourths of the teacher networks surveyed struggled to find funding, in some cases this supported the network and in others it created tensions within the network.	Lieberman & Grolnick, 1996

### Significance

Providing a venue for teachers to participate in a community of practice over time requires both financial and material resources. Many local efforts are begun thanks to a grant or another one-time funding source, when the funding runs out; these programs are often not sustainable (Lieberman & Grolnick, 1996). A partnership effort between multiple schools and districts and a large university can offer the resources to both sustain the program and support ongoing participation (Borthwick, et al., 2001). This is the case in the school-university partnership in this study. In Meyer's, 2005 study on teacher participation in a professional development program called the Texas Regional Collaboratives for Excellence in Science Teaching (TRC), teachers reported that access to resources and materials was an important factor in their continuing participation. This was especially true for teachers in the rural districts, a view expressed by teachers in this current study as well.

### Participation as Continuing Professional Development

Professional development is an important aspect of teachers' initial and continuing reasons for participation. Teachers describe the professional development they receive through participation as something that contributes to making them feel like qualified professionals. It builds on their current knowledge and skills, and supports their ongoing professional growth. The benefits of receiving continuing professional development units and graduate level college credit are also perceived as important factors in continuing participation. Teachers describe an increased sense of confidence and an improved ability to teach science. The opportunity to take advantage of professional development that would otherwise be unavailable is a factor in supporting their continuing participation.

The professional development is awesome. We are given great topics and resources to base out meetings but also have the freedom to run the program how we determine to be beneficial to our students. The support we receive from the...office is the best! (\*M28CM)

... left a huge impression on me both as a teacher and after school advisor. It provided me with a constructivist, inquiry-based style of teaching science, that *[sic]* I would pattern my classroom after. After we left...I still used many of the team-building ideas, warm-ups, and overall structure in my after school programs. (M1NM)

I feel better about teaching science both in and out of my classroom because of the...training and work with...students. (\*F25AE)

### Claim

Ongoing professional development supports teachers as professionals, leads to professional growth, and is central to their continuing participation.

**Table 20: Supporting Evidence for Professional Development Claim**

Supporting Evidence	Source
Obtaining current information on state science issues was a factor in continuing participation in the Texas Regional Collaboratives for Excellence in Science Teaching (TRC).	Meyer, unpublished paper , 2005
Opportunity to meet and learn from other teachers was credited with becoming a better teacher; provided access to a support system; and led to a perceived gain in confidence and ability as a teacher.	Meyer & Barufaldi, 2003
Participants viewed the opportunity to engage in professional development as a way to continue their professional growth.	Bainer & Wright, 1998
Nature of activities and relationships were the critical elements in facilitating continuing participation, provided a balance between teacher knowledge and expertise with outside expertise.	Lieberman & Grolnick, 1996
Teachers reported the development activities as providing opportunities for personal and professional growth; helping in addressing new policies; or in dealing with existing school problems or issues.	Bell & Gilbert, 1994

### Significance

Teachers' responses indicate that the professional development they receive is a factor in their continuing participation. Other studies related to professional development offer similar responses from teachers. Teachers who participated in the Texas Regional Collaboratives for Excellence in Science Teaching study described how the opportunity to learn from and with other teachers helped them gain confidence. These teachers also felt that participation helped them become better teachers. The ability to meet ongoing state licensure and credit requirements was also noted as an additional benefit (Meyer, 2005; Meyer & Barufaldi, 2003). These findings resonate with the responses from the teachers in this study.

In two other studies, teachers describe their participation as an opportunity for personal and professional growth as well as a way to address shared school issues and other educational problems (Bainer & Wright, 1998; Bell & Gilbert, 1994). Similar responses are reported from teachers in this current study.

Lieberman and Grolnick (1996) report that teachers who participate in teacher networks indicate that the balance between learning and sharing with and from their colleagues—and learning from external expertise—supported their continuing participation. Once again, these responses are similar to the ones made by the teachers in this study.

### Participation Enhances Collegial Interactions and Relationships

Collegial interactions and relationships refer to the conversations and exchanges teachers have with each other during their times together. Opportunities for these interactions occur at level-specific workshop sessions (elementary, middle school, or high school), sessions when all three levels are together, sessions when teachers from the same district are together, informal times between sessions, and formal as well as informal social times. These interactions are characterized as opportunities to talk and connect with a statewide network of teachers. They are often described as sharing stories and experiences, offering teachers a way to feel both connected with others and to less isolated in the profession. They also provide an opportunity to collaborate and share ideas. Additionally, teachers describe these interactions as contributing to the feeling that they are a part of something, a world that is larger than one's self or one's classroom. They are an opportunity to socialize, vent, and interact with other adults. Teachers describe a sense of trust and relationship building. Friendships and long-term relationships are frequently mentioned as important too.

I always meet someone new. Not new to the program, just able to have a conversation with someone and get to know them *[sic]* better. I am learning most names after three years. I am able to bounce ideas off other math teachers, listen to what works for them, school environment issues, and scope out good places to travel. (\*F27CH)

I have received many good ideas from conversations at the workshops and events. The time to interact with other teachers is one of the highlights of the program for me. (\*F9AH)

This is a part I really miss by not being in...anymore; it was always exciting seeing old friends and meeting new teachers. (F2CE)

### Claim

Participation in a community addresses some of the issues surrounding teacher isolation; creates a sense of being part of something, more than simply being a solo teacher in a classroom; and builds relationships and trust that support teachers opening up their practice to others.

**Table 21: Supporting Evidence for Collegial Interactions and Relationships**

Supporting Evidence	Source
Teachers reported feeling part of a greater statewide network of dedicated teachers, camaraderie, and commonalities with other teachers.	Meyer, unpublished paper, 2005
Examined the role of participation in teacher communities in sustaining teachers, findings supported the importance of strong collegial interactions and opportunities to learn.	Hausman & Goldring, 2001
Collaborative relationships built trust that helped facilitate participation and interactions.	Lieberman & Grolnick, 1996

### Significance

Clearly the chance to interact and collaborate with other teachers is perceived as a contributing factor to teachers' ongoing participation. The time to interact with a statewide network of teachers with common interests and similar issues was reported as an important reason for continuing participation in the Texas Regional Collaboratives for Excellence in Science Teaching (Meyer, 2005). The language the teachers used to describe their perception of the value of collegiality and collaboration in the Texas collaboratives mirrors the comments from teachers in my study. Hausman and Goldring's, 2001 findings from teachers' continuing participation in a community of practice emphasize the importance that teachers place on collegial interactions as well as the opportunity to learn. Collegial interactions were perceived by teachers in this study to be an important factor in their continuing participation. It was also reported as something that was missed when they no longer participated. Ongoing participation facilitates increased interaction and participation as the teachers in the community of practice

get to know one another (Lieberman & Grolnick, 1996). Again this is a response similar to ones heard from the teachers in this study.

### Participation Supports Shared Personal Practice

Shared personal practice is the opportunity for teachers to talk about their practice with each other and to share and learn from one another. Opportunities for this type of exchange occur during the times they are together in formal workshops sessions, between sessions, and during social time. Shared personal practice is characterized by teachers as an opportunity to share successes and failures, gain a different perspective on a topic or issue, talk about teaching and teaching practices, and talk about students and student learning. Teachers express an appreciation for opportunities to interact with teachers from other districts who face similar issues and problems. They also express the value of being able to talk with teachers at different teaching levels—elementary, middle, and high school. Many describe this as contributing to an increase in their confidence as a professional as well as motivating them to be better teachers.

I benefit from listening to other teachers and what is going on in their schools as well as how their...program is operating. We “get” to talk about frustration and successes associated with...and the educational process.  
(\*M21DH)

We discuss methods and activities we have used and how students responded. We brainstorm ways to make things work even better. We share our successes and failures trying to help each other and get help in return.  
(\*F12JH)

My conversations have to do with classroom techniques for teaching and management at times. I’m often interacting in group work activities, practicing for when I might be conducting these activities, in which case conversation centers on the challenge at hand, and of course our comments on how students might react to the activity. There is a fair amount of teasing (social lubrication of course) among veteran...teachers, and catching up on news about friend’s lives and teaching situations.  
(\*M16HM)

I learned a lot from the other...teachers. It made me a better science teacher, being able to share with others. (F5HE)

### Claim

Participation in a professional community provides the opportunity and structure to open up one's practice for others to view and critique. It provides a venue to learn from and with one another in practice.

**Table 22: Supporting Evidence for Claim of Shared Personal Practice**

Supporting Evidence	Source
Regular check-in time provided opportunity for participation and promoted collaboration; opened up the possibility to disclose and invited comment on uncertainties and dilemmas of practice.	Little, 2003
Participation was reported by teachers as a way to increase content knowledge. Supported ability to teach inquiry. Sharing practice with others provided a support system for sharing and testing ideas.	Avery & Carlsen, 2001
Resources for teacher development and improvement in practice were created through teachers' interactions and talks around the materials and activities they engaged in together.	Little, 2001
Opportunity to try new teaching activities and talk together about their uses together was an important aspect of participation.	Bell & Gilbert, 1994

### Significance

Shared personal practice is a function of a community of practice and was repeatedly identified by teachers in this study as an important contributor to their continuing participation. The time and structure to come together with colleagues and be able to then examine and share teaching practices are identified in a number of studies as an important factors that supports ongoing participation and professional growth. This regular "check-in time" as described by Little (2003) invites and promotes opening up one's practice. Teachers' responses from my study provide numerous examples of teachers sharing their practice with colleagues and, in turn, learning about their colleagues' practices. The activities and materials of the community of practice facilitate opening up one's practice and create a common ground from which to examine that practice (Avery & Carlsen, 2001). Bell and Gilbert (1994) reported that teacher interaction around the

activities was an important factor in sustaining teachers' participation. Teachers in the community of practice in this study engage in mutual activities: they have a common field from which to test their practice, i.e., the club they facilitate. They learn the content together and share ideas on how to teach the content. Little (2001) suggests that coming together around a particular set of materials or activities helps focus the interactions and talk. Teachers' perceptions of shared personal practice are reflective of the teacher responses from these similar studies. Clearly, the opportunity to engage and interact with colleagues in and around their practice is perceived as an important factor in sustaining their participation.

### Summary

The emergent themes described in the previous section and in the previous two chapters suggest that the teachers not only perceived their participation to be of value but could articulate various aspects of participation that were of importance to them. More similarities than differences emerged in their responses. This suggests a commonality of experiences as well as a collective sense of belonging to some identifiable group or community. The findings from this study align with the findings of other empirical studies in this field: community of teachers as community of practice.

In this next section, I return to the four guiding questions of this study in order to summarize and reflect on the findings of this study, and to address implications these findings may have for further research. The common thread throughout this study is a focus on the role of participation in a community of practice and the potential of such participation to contribute to professional growth.

### Question 1: Initial Participation Related to Community of Practice

*What are the teachers' reason(s) for initially participating?*

This analysis examined the aspects of participation that teachers reported as supporting their initial participation in this community of practice. Although



teachers do not explicitly refer to their participation in those terms, the language they to describe their reasons align with many aspects of a community of practice. Initially, the teachers are focused on the impact this experience will have on their students. At this stage even, their references to pedagogy and pedagogical content knowledge are very closely aligned with their perceived sense of obligation to students and student learning. When any reference to financial and material resources is made, their comments are more about the stipend than other material and curricula resources. Material and curricula resources are mentioned further along in their participation in the community of practice. The opportunity to interact and collaborate with colleagues is mentioned but, at this initial stage of participation, the language describing such experiences is not very well developed.

An examination of the responses of teachers' perceptions of why they initially decided to participate begins to show an alignment with the dimensions and characteristics of community of practice. Descriptions in many of the teachers' responses indicate an emerging sense of a mutual engagement even if, at that point in the study, exactly what the concept itself was is not entirely clear. On the other hand, the concept of joint enterprise—providing extended learning opportunities for students, searching for more ways to engage students, and helping students create and see possibilities—was clearly expressed at this stage. A sense of a shared repertoire of practice was also evident; many teachers could articulate aspects of practice that they expected to be involved in, such as facilitating an afterschool program focusing on mathematics and science.

Of course, not all teachers expressed all the dimensions of community of practice in their responses. Some, especially the ones who had participation imposed upon them by a principal or other administrator, had little if any idea, of about what participation would entail. Some teachers came from communities with a long history of participation in the program; others came from communities with a relatively brief history of participation or no participation at all. Teachers from communities with long-term participation had a sense of what participation entailed; their histories of participation gave them insights and understanding about what it means to be engaged as participants.

Question 2: Continuing (or Discontinuing) Participation Related to Community of Practice

*What are the factors identified by the teachers' that support (or encourage) or discourage their participation?*

Analysis of what teachers perceived as encouraging or discouraging to their continuing participation reveals a slight shift from their reasons for initial participation. The responses are still predominantly student-focused. The relative importance of pedagogy and pedagogical content knowledge has not changed. However, descriptions of their experiences of available professional development opportunities have become richer. There is another shift in the descriptions related to financial and material resources. References to the stipend decline while references to resource materials and activities increase. While mention of the collegial interactions and relationships doesn't noticeably increase at this stage, the descriptions of these interactions and relationships are more detailed.

Viewed from the lens of community of practice, this shift in descriptions indicates a developing sense of membership through legitimate peripheral practice. Teachers' portrayals refer to a sense of belonging, of being part of something outside of their classrooms that allows them to feel like more than just a classroom teacher. Such descriptions align with the language of becoming a member of a community of practice. Teachers talk about knowing more teachers and knowing them well. This increases both confidence and comfort levels which then allows teachers to participate and share their practice more openly with others.

While some participants become more fully engaged in the community of practice over time, others become less engaged and stay on the periphery or leave altogether. Even though they describe a growing connection to the community and seem to value their participation, some participants leave due to external factors, such as family obligations or their classroom responsibilities. Others become disengaged and leave because they do not enjoy the shared practice of the groups, don't like the curricula, or feel that participation requires too large of a commitment. Others report not feeling well supported.

### Question 3: Collegial Interactions and Relationships Related to Community of Practice

*How do teachers describe their interactions and relationships with other participants?*

Analysis of this question characterizes teachers' perceptions of their interactions and relationships with other participants throughout the time of their participation. Collegial interactions and relationships with other participants emerged as a theme from the responses to the three other guiding questions but was the primary focus of this question. It is clear from the teachers' responses that availability of time—particularly the opportunity and the structure to support these interactions—is a weighted factor in their ongoing participation. Collegial interactions and relationships with teachers in the program are mentioned by a number of former participants as what they most miss when they cease to participate.

It is in the analysis of this question and the one that follows (Question 4, see page 101) that the language of the teachers becomes clearly aligned with the language of communities of practice. In essence, this question (Question 3) describes the role and function of shared personal practice in this community of practice. Aspects of mutual engagement are evident. There are descriptions of a diverse community that leads teachers to view their practice differently. Many comments talk about the opportunity to do and learn the activities together which leads to strong bonds among the participants. There are feelings of loss when teachers leave the community, and feelings of opportunity when new teachers join. The teachers articulate a sense of joint enterprise; they can describe their roles and responsibilities and feel accountable to each other and to the program. They also have an increased sense of empowerment to take what they gain through this participation back to their clubs and classrooms and implement their new ideas or strategies in ways that best suit their needs and their students' needs. A rich description of a shared repertoire of experiences emerges through the analysis of these responses. The teachers have stories to share; tools and artifacts for their

practice; a shared understanding of the goals and purpose; and common events in which to participate with their students and with each other.

This community of practice is not without its tensions. For some participants, there is a sense of being on the outside in the beginning, and thus not feeling welcomed. This generally improves over time once an individual teacher starts to feel more like a legitimate member of the community. And just like any other community, there are personalities that conflict, feelings that get hurt, and voices that don't feel as listened to as others. While collegial interactions can be an avenue that makes individual practice more visible and open for critique, they can also serve to maintain the status quo if the participants don't feel legitimized to trust and share.

#### Question 4: Participation or Experience over Time Related to Community of Practice

*How do teachers characterize or describe their participation or experience over time?*

Analysis of this aspect of participation suggests a trend in participation and experience over time with an increasing focus on shared personal practice and collegial interactions. Leadership emerges as a factor for those with longer periods of participation. There is a reference to professional development especially in relation to the continuing professional development units required for their professional licenses and graduate credits. There is still a student-centered focus in these responses. However, mention of financial and material resources and disengagement are mentioned less frequently.

From a community of practice perspective, an analysis of teachers' perceptions of their participation and experiences over time suggests that the teachers who continue to participate clearly develop an identity of membership, an important factor in participation in a community of practice. This identity of membership is reflected in teachers' descriptions of an increased sense of responsibility for guiding and informing the practice of the community; the

emergence of leadership within the community and for the community outside of its practice; and an increased focus on opening up their practice to one another.

As with the analysis of the previous three questions, not all members have an equally strong sense of identity of membership. Some continue to remain on the periphery of full participation. Leadership, while accepted by some, makes others uncomfortable. New participants move in and longer-term participants move out creating community flux. Over time, the practice of the community shifts and adjusts to changing participants and changing practice.

### Summary

Participation in a community of practice provides both structure and opportunity for professional growth and development. Teachers are able to interact and collaborate within a common practice and share their own practice and to learn from practices of others. There is a perceived value for recognition of internal expertise (as represented by the teachers) coupled with external expertise (as represented by the formal professional development). The interactions and collaboration of the community is student-centered with a common theme of improving individual practice to help support student learning.

### **Implications for Future Research**

The results of this study have implications for additional research related to professional development as a community of practice and the location of communities of practice within a school-university partnership. This study suggests that community of practice as a framework for professional development provides teachers with an opportunity for professional growth and development that may not be available to them in other more traditional forms of professional development. Supporting teachers in a community of practice can provide learning opportunities that engage teachers in a shared examination of their practice. Locating such communities in a school-university partnership provides financial

and material resources not always available to school districts, especially smaller rural districts.

### Implications for School-University Partnerships

Researchers suggest that professional learning communities are most effective when located within the structure of the teachers' everyday work environment (Glazer & Hannafin, 2006; Little, 2003). Yet many schools, especially the smaller, rural schools profiled in this study, do not have the resources and capabilities to create these types of communities within their schools (Bainer, 1997). In addition rural districts typically do not have resources or staffing for sustained professional development (Shroyer & Enochs, 1987) and are not well prepared to provide support for those teachers who need assistance in meeting the No Child Left Behind Act's "highly-qualified" criteria (Kent, 2001; Darling-Hammond, 2002). On the other hand, school-university partnerships can and do help schools meet the increasing demands of educational reform (Borthwick, et al., 2003). Participation in a partnership as detailed in this study suggests that teachers who participate perceive a level of financial and resource support as well as a structure that provides opportunity for their professional growth.

As with all studies there are caveats. This is a single study focused on not only one partnership, but on only one aspect of that partnership: the teachers' perceptions of participation and the potential benefits they describe based on their individual experiences. In-depth details about how the partnership itself actually functions were neither described nor analyzed. Further study into the nature of the partnership and the relationship between the participating schools and the university would build upon the findings of this current study providing a more detailed picture of the potential of school-university partnerships in educational reform.

### Implications for Professional Development

The changing expectations for teachers and the teaching profession require rethinking about the ways in which professional development has been designed and implemented in the past (Darling-Hammond & McLaughlin, 1995; Lieberman, 1995). The findings from this study suggest that a community of practice approach to professional development may offer a way to address some of these changes. Teachers' reports in this study and others (Hausman & Goldring, 2001; Royal & Rossi, 2001) describe a sense of increasing efficacy in their practice because of participation; this may support their ability to indeed change their practice

Gallucci (2003) analyzed the usefulness of using a community of practice approach. She suggests that teachers in learning communities who opened up their practice to one another reported less difficulty in making changes to their practice as compared to teachers in learning communities less willing to open their practice. Similarly, Avery and Carlsen (2003) argue that teachers who are given an opportunity to collaborate and participate in the facilitation of their own learning appear more willing to adopt new practices.

Identity in a community of practice moves the focus from the individual teacher to the community. The community of practice becomes responsible for student learning. In this study, teachers expressed a common concern for student learning, a concern they were able to discuss with other teachers, sharing ideas and creating possible solutions together. Stein, Silver, and Smith (1998) suggest that teachers' participation in a community of practice and their developing senses of membership in this community are tied to their motivation to learn and be a contributing part of the community.

This study adds to a growing body of knowledge on teacher professional growth and learning as participation in a community of practice. Findings from my research indicate from the teachers' perspectives their participation in this community of practice was an opportunity for ongoing professional growth and development. Judith Little (2003) captures the essence of this field of research best:

Looking close up at the teacher interaction, across a range of settings—both in formally organized professional development and in naturally occurring school workplace contexts—will further open the black box of professional community and show when and how it is conducive, or not, to the transformation of teaching. (Little, 2003, p. 940)

There is certainly a need for more studies that examine the concept of teacher community as a community of practice. There is also a particular pressing need for studies that investigate the actual interactions of the teachers who participate in communities of practice and their discourse around these interactions. It is in through studying these interactions that researchers will be able to truly understand how participation in a community of practice constitutes a resource for professional growth and can lead to changes in practice.



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## Appendices



## Appendix A: Phase I Pilot Study Questionnaire



The ...Program Oregon State University, 18 Gladys Valley Center, Corvallis, Oregon 97331-3510  
T 541-737-2388 | F 541-737-3554 | [http://\[Program name\].oregonstate.edu](http://[Program name].oregonstate.edu)

### The [Program Name] as a Teacher Community: An Exploratory Study

1. How would you describe your interactions with other teachers at workshops and events?
2. How are [PROGRAM NAME]'s vision and its values shared with [PROGRAM NAME] teachers?
3. How do [PROGRAM NAME] teachers talk about [PROGRAM NAME] and its values and vision?
4. How would you describe your role/responsibility as part of THE [PROGRAM NAME] Program?
5. How would you describe your experience of participating in THE [PROGRAM NAME] Program professional development as a perspective over time?

6. During a typical workshop, which teachers do you usually talk with?
7. How much time do you spend in these conversations?
8. Of these conversations what portion deals with teaching as opposed to social-personal matters?
9. Describe some instances in which you got help from a [PROGRAM NAME] colleague concerning teaching practices?
10. Describe some instances in which you gave help to a [PROGRAM NAME] colleague concerning teaching practices.
11. What topics related to teaching practice do teachers at [PROGRAM NAME] workshops talk about outside of workshop sessions?

12. What would you say are the group norms for teachers in The [PROGRAM NAME] Program?
13. How are new teachers brought into the [PROGRAM NAME] community?
14. What level of buy-in is necessary for teachers to successfully implement [PROGRAM NAME] in their schools?
15. How does [PROGRAM NAME] create and sustain a sense of community for you as a [PROGRAM NAME] teacher?
16. What factors contribute to your professional development as a result of participating in [PROGRAM NAME] workshops?
17. What factors inhibit your professional development?

18. In what ways has the teacher community that develops in [PROGRAM NAME] enabled you to change as a teacher?
19. How would you characterize your level of engagement as a teacher in The [PROGRAM NAME] Program?
20. Do you have any questions or additional information that you would like to share?

**Appendix B: Phase II Online Questionnaire for Current Teachers**



**SurveyMonkey.com**  
because knowledge is everything

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Monday, January 22, 2007

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Preview

## The [REDACTED] Program: A School-University Partnership - Current Teachers

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### 1. Informed Consent Edit Page Delete Page Copy/Move Add Logic

Please read the Informed Consent document (attached in e-mail message or sent with cover letter in mail) before proceeding with this survey.

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\* 1. I have read the Informed Consent document and agree to participate in this research study.

Yes

No

Add Question Add Page

### 2. Details Edit Page Delete Page Copy/Move Add Logic

Please fill out the information below and follow the instructions to complete this survey. If you have any questions, or concerns please contact SueAnn Bottoms at sueann.bottoms@smile.oregonstate.edu or (541) 737-4653. Thank-you for agreeing to participate in this research study. Your identity will remain anonymous and participation is voluntary.

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\* 2. Name:

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\* 3. [REDACTED] school:

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\* 4. I would be willing to participate in a one-on-one interview to further discuss my experiences in this professional network

Yes

No

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\* 5. If yes, to number 4 above, please provide the following summer contact information:

Street/P.O. Box



City/State \_\_\_\_\_

Zip Code \_\_\_\_\_

Phone Number \_\_\_\_\_

Email address \_\_\_\_\_

[Add Question](#) [Add Page](#)

### 3. Demographic [Edit Page](#) [Delete Page](#) [Copy/Move](#) [Add Logic](#)

Please provide me with some background information about your teaching experience.

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\* 6. I have taught \_\_\_\_\_ years at the end of the 2005-2006 school year.

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\* 7. I have been a \_\_\_\_\_ advisor for \_\_\_\_\_ years at the end of the 2005-2006 school year.

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\* 8. Type of certification program:

Alternative      Traditional

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\* 9. Degree (s) earned and field (s) (i.e. BS Biology, MS Education):

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\* 10. List the area(s) in which you have an Oregon Teaching Certification:

[Add Question](#) [Add Page](#)

### 4. Participating in \_\_\_\_\_ [Edit Page](#) [Delete Page](#) [Copy/Move](#) [Add Logic](#)

The following three questions ask you to share your reasons for your initial participation in \_\_\_\_\_, your continuing participation, and provide space to include additional comments about your experiences.

[Add Question](#) [Add Page](#)

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\* 11. Briefly describe the reason(s) you initially decided to participate in The \_\_\_\_\_ Program. Put an asterisk (\*) beside the most important reason.



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\* 12. Briefly state the reason(s) why you have continued with The [REDACTED] Program. Place an asterisk (\*) next to the most important reason.

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13. Briefly share any other comments you would like to share about your experience with The [REDACTED] Program.

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#### 5. Digging a Little Deeper Edit Page Delete Page Copy/Move Add Logic

The following seven questions are aimed at probing a bit deeper into some of the specific aspects of participation in this program.

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\* 14. How are S [REDACTED]'s visions and values communicated?

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\* 15. How do [REDACTED] teachers talk about the vision and values?

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\* 16. Describe your interactions and/or conversations with [REDACTED] teachers at workshops and events.

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\* 17. Describe your role/responsibility as part of this program?

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\* 18. How has your participation in [REDACTED] changed over time?

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\* 19. How has your experience in [REDACTED] changed over time?

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\* 20. How has your relationship with others in the program changed over time (teachers, [REDACTED] staff)?

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6. My experience in this program... Edit Page Delete Page Copy/Move Add Logic

Check a response to each of the statements below.

Add Question Add Page

Edit Delete Copy/Move

\* 21. Chose the answer that is most representative of your response to the following statements from 1 strongly disagree to 5 strongly agree or 6 for no opinion.

	Strongly disagree 1	Disagree 2	Somewhat agree 3	Agree 4	Strongly agree 5	No opinion 6
[REDACTED] provides a structure that includes time and opportunity to have focused interaction with colleagues.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have a shared sense of purpose and responsibility for the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I have the opportunity to learn and reflect on my teaching practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I gain content knowledge through the professional development offered through [REDACTED].	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I learn teaching strategies and methods through the professional development.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am encouraged to provide feedback and/or input on all aspects of the program.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



My contributions are important to the functioning of the program.

☐ ☐ ☐ ☐ ☐ ☐

I experience the beliefs and values of the program through my interactions with [REDACTED] colleagues.

☐ ☐ ☐ ☐ ☐ ☐

[REDACTED] creates a sense of safety and support for me.

☐ ☐ ☐ ☐ ☐ ☐

I have opportunities to talk and share experiences with [REDACTED] colleagues.

☐ ☐ ☐ ☐ ☐ ☐

[REDACTED] provides a context and focus for me to collaborate and learn with others in [REDACTED].

☐ ☐ ☐ ☐ ☐ ☐

I am valued as a teacher and recognized for my contributions to teaching.

☐ ☐ ☐ ☐ ☐ ☐

[Add Question](#) [Add Page](#)

## 7. Thanks!

[Edit Page](#) [Delete Page](#) [Copy/Move](#) [Add Logic](#)

I appreciate your continued participation in The [REDACTED] Program and your willingness to participate in this research project. What you have to say matters to me and to the entire [REDACTED] program.

Thank-you,  
SueAnn

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**Appendix C: Phase II Online Questionnaire for Former Teachers**





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Preview

New Survey: [Redacted Title]

[Redacted]  
[Redacted]  
[Redacted]

## The [Redacted] Program: A School-University Partnership - Former [Redacted] Teachers

Edit Title

Edit Numbering

Add Logo

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1. Informed Consent [Edit Page](#) [Delete Page](#) [Copy/Move](#) [Add Logic](#)

Please read the Informed Consent document (attached in email message or mailed with letter explaining study) before proceeding with the survey. Thank-you.

[Add Question](#) [Add Page](#)[Edit](#) [Delete](#) [Copy/Move](#) [Add Logic](#)

1. I have read the Informed Consent document and agree to participate in this research study.

Yes No

[Add Question](#) [Add Page](#)2. Details [Edit Page](#) [Delete Page](#) [Copy/Move](#) [Add Logic](#)

Please fill out the information below and follow the instructions to complete this survey. If you have any questions, or concerns please contact SueAnn Bottoms at sueann.bottoms@smile.oregonstate.edu or (541) 737-4653. Thank-you for agreeing to participate in this research study. Your identity will remain anonymous and participation is voluntary.

[Add Question](#) [Add Page](#)[Edit](#) [Delete](#) [Copy/Move](#)

\* 2. Name:

[Add Question](#) [Add Page](#)[Edit](#) [Delete](#) [Copy/Move](#)

\* 3. School:

Current school?

Former SMILE school?

[Add Question](#) [Add Page](#)[Edit](#) [Delete](#) [Copy/Move](#) [Add Logic](#)

\* 4. I would be willing to participate in a one-on-one interview to further discuss my previous experiences in this professional network

Yes No

[Add Question](#) [Add Page](#)[Edit](#) [Delete](#) [Copy/Move](#)

\* 5. If yes, please provide the following summer contact information:

Street/P.O. Box



City/State	
Zip Code	
Phone Number	
Email address	

Add Question Add Page

### 3. Demographic Edit Page Delete Page Copy/Move Add Logic

Please provide me with some background information about your teaching experience.

Add Question Add Page

<p><span>Edit</span> <span>Delete</span> <span>Copy/Move</span></p> <p>* 6. I have taught _____ years at the end of the 2005-2006 school year.</p> <p>I taught _____ years.</p> <p>I have taught _____ years at the end of the 2005-2006 school year.</p> <p>I retired in _____ (Congratulations!)</p>
--

Add Question Add Page

<p><span>Edit</span> <span>Delete</span> <span>Copy/Move</span></p> <p>* 7. I had been a _____ advisor for _____ years at the end of the end of the year that I left SMILE.</p>
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<p><span>Edit</span> <span>Delete</span> <span>Copy/Move</span> <span>Add Logic</span></p> <p>* 8. Type of certification program:</p> <p>Alternative Traditional</p>
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<p><span>Edit</span> <span>Delete</span> <span>Copy/Move</span></p> <p>9. Degree (s) earned and fields (i.e. BS Biology, MS Education):</p>
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Add Question Add Page

<p><span>Edit</span> <span>Delete</span> <span>Copy/Move</span></p> <p>* 10. List the areas in which you have/had an Oregon Teaching Certification:</p>
---

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### 4. Participating in \_\_\_\_\_ Edit Page Delete Page Copy/Move Add Logic

The following three questions ask you to share your reasons for your initial participation in \_\_\_\_\_, your continuing participation, and provide space to include additional comments about your experiences.

Add Question Add Page



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\* 11. Briefly describe the reason(s) you initially decided to participate in The [REDACTED] Program. Put an asterisk (\*) beside the most important reason.

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\* 12. Briefly state the reason(s) why you left The [REDACTED] Program. Place an asterisk (\*) next to the most important reason.

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13. Briefly share any other comments you would like to share about your experiences with The [REDACTED] Program.

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#### 5. Digging a Little Deeper Edit Page Delete Page Copy/Move Add Logic

The following seven questions are aimed at probing a bit deeper into some of the specific aspects of participation in this program.

Add Question Add Page

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\* 14. How were [REDACTED]'s visions and values communicated?

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\* 15. How did [REDACTED] teachers talk about the vision and values?

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\* 16. Describe your interactions and/or conversations with [REDACTED] teachers at workshops and events.

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## 6. My experience in this program...

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Check a response to each of the statements below.

[Add Question](#) [Add Page](#)

[Edit](#) [Delete](#) [Copy/Move](#)  
 \* 21. Chose the answer that is most representative of your response to the following statements from 1 strongly disagree to 5 strongly agree and 6 for no opinion.

	Strongly disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly agree 5	No opinion 6
SMILE provided a structure that includes time and opportunity to have focused interaction with colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had a shared sense of purpose and responsibility for the program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had the opportunity to learn and reflect on my teaching practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I gained content knowledge through the professional development offered through SMILE.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I learned teaching strategies and methods through the professional development.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was encouraged to provide feedback and/or input on all aspects of the program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My contributions were important to the functioning of the program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I experienced the beliefs and values of the program through my interactions with SMILE colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SMILE creates a sense of safety and support for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had opportunities to talk and share experiences with SMILE colleagues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SMILE provided a context and focus for me to collaborate and learn with others in SMILE.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was valued as a teacher and recognized for my contributions to teaching.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

[Add Question](#) [Add Page](#)

## 7. Thanks!

[Edit Page](#) [Delete Page](#) [Copy/Move](#) [Add Logic](#)

I appreciate your past participation in The SMILE Program and your willingness to participate in this research project. Your contribution to SMILE was important to the program and what you have to say matters to me and to the entire SMILE program.

Thank-you,  
SueAnn

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