ABSTRACT

Title of dissertation:	UNDERSTANDING TEACHERS' EFFICACY
	BELIEFS: THE ROLE OF PROFESSIONAL
	COMMUNITY
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In this study, the relationship between teachers' perceptions of a departmental professional community and teachers' sense of efficacy was examined, along with the degree to which vicarious experience and verbal persuasion might mediate this relationship. The definition of professional community within this study was partially modeled after the work of Louis, Kruse, and Bryk (1995), reflecting teachers' perceptions of the presence of reflective dialogue, deprivatized practice, collaboration, and shared norms within their academic departments. It was expected that teachers who perceived opportunities to talk with one another about student learning (reflective dialogue), observe other teachers during their work in the classroom (deprivatized practice), and collaborate with other teachers would have a higher sense of efficacy than those teachers who did not perceive these features of a departmental professional community. Furthermore, teachers who believed they worked within a department in which colleagues shared norms and values regarding student learning were also

expected to experience higher levels of efficacy than those who did not. Finally, it was
expected that the relationship between teacher efficacy and professional community
would be mediated by vicarious experience and verbal persuasion, two of the four
principal sources of information discussed in Bandura's (1977) self-efficacy theory. A
total of 229 teachers from nine high schools in a middle-class school district
participated in the study. Results from hierarchical regression analyses indicate that:
perception of a departmental professional community was a significant and positive
predictor of teachers' overall efficacy and efficacy for classroom management,
instructional practices, and student engagement; of the four community features,
teachers' perception of shared norms and values within the department was the
strongest and most consistent predictor of efficacy; deprivatized practice was a
significant and positive predictor of teachers' efficacy for instructional practices; and
the mediation model was not significant. Furthermore, teachers' view of ability as
incremental or fixed was a consistent negative predictor of efficacy, while teachers'
years of experience was a significant positive predictor. Teachers' perceptions of
student performance emerged as the strongest predictor of teachers' efficacy beliefs.
Implications of findings and directions for future research are discussed.

UNDERSTANDING TEACHERS' EFFICACY BELIEFS:

THE ROLE OF PROFESSIONAL COMMUNITY

by

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Chapter 1

Introduction

Much research on teachers has been focused on teachers' instructional effectiveness (e.g., Bulgren, Deshler, Schumaker, & Lenz, 2000). Researchers have been concerned with how various teaching practices and teacher behavior can affect student performance (e.g., Brophy, & Good; 1986; Doyle, 1986; Gage & Needels, 1989; Rosenshine & Stevens, 1986; Shuell, 1996). Furthermore, teacher effectiveness and accountability have become a salient issue in government initiatives to increase academic achievement and test scores of American children (U.S. Department of Education, 2001). However, factors that might influence teaching practices and teacher behavior have received less attention in the literature. Gathering information on antecedent factors that improve teaching might provide useful information for increasing teaching effectiveness and student achievement.

One such factor that might have an impact on how teachers perform in the classroom is teacher efficacy. Defined as the extent to which a teacher believes he or she has the capacity to affect student performance, teacher efficacy has been related to individual differences in teachers' feedback toward and expectations for students (Gibson & Dembo, 1984) and to teachers' control orientations (Woolfolk & Hoy, 1990). Moreover, teacher efficacy has been positively associated with academic achievement in students (Anderson, Greene, & Loewen, 1988; Ashton & Webb, 1986). According to Bandura (1993), links between efficacy and achievement might be explained by the type of learning environments teachers create for their students. For instance, teacher efficacy could play a role in the goals teachers set for themselves and

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their students, how motivated teachers are to create a positive learning environment, how much effort they expend in teaching students, and how they react when faced with difficult situations. Each of these factors could lead to positive or negative instructional practices, which could then impact student achievement.

Given the potential importance of teachers' sense of efficacy for instructional effectiveness and student achievement, it is important that members of the educational community understand possible factors that might enhance or hinder these beliefs. Researchers studying teacher efficacy have examined the relations between teachers' sense of efficacy and student and classroom variables (e.g., Guskey, 1982, 1987; Raudenbush, Rowan, & Cheong, 1992; Smylie, 1988), and a smaller number of studies (e.g., Hoy & Woolfolk, 1993; Lee, Dedrick, & Smith, 1991; Warren & Payne, 1997) have looked at relationships between teacher efficacy and the organizational context of schools. These latter studies have focused on context variables such as organization of classes, principal behavior, opportunities for innovation, teacher collaboration, staff development, teacher influence, and faculty morale.

Whereas some of these investigations have identified consistent relationships between teachers' efficacy beliefs and certain antecedent factors, researchers have yet to understand fully the connection between school context and efficacy beliefs. For example, many of the studies examining this relationship have yielded inconsistent results (e.g., Hoy & Woolfolk, 1993; Newmann, Rutter, & Smith, 1989; Warren & Payne, 1997). Moreover, whereas researchers have investigated the relations of contextual factors to teacher efficacy beliefs, few (if any) have examined possible mechanisms that might mediate or explain these relationships. Thus, the present study

had two goals: (1) to examine the relation between teachers' sense of efficacy and teachers' perceptions of certain aspects of the school organization and (2) to document the mechanisms by which these perceptions of organizational factors might influence teachers' efficacy beliefs.

Teacher Efficacy

Bandura's (1977) theory of self-efficacy highlights four informative principal sources from which efficacy beliefs are constructed: enactive mastery experience with which individuals can gauge their capabilities; vicarious experiences that give individuals comparison information to use in judging their competencies; verbal persuasion that others might use to help convince an individual that he possesses the ability to perform a certain task; and physiological and affective states that serve as another indicator of capability. This work provides a basis for theoretical and empirical discussions of teachers' self-efficacy (e.g., Gibson & Dembo, 1984; Hoy & Woolfolk, 1993; Soodak & Podell, 1994) in that Bandura's four informative principal sources can be linked to the construction of teachers' efficacy beliefs.

How might each of these sources of efficacy information be tied to teachers' experiences at school? It is reasonable to assume that teachers gauge their successes and failures through enactive mastery experience within the classroom. These successes and failures would be cognitively processed and could then increase or decrease teachers' beliefs about their ability. These direct classroom experiences have the potential to produce various physiological and emotional states, and the information conveyed by these states could also further enhance or hinder teachers' efficacy beliefs. In addition, vicarious experiences and verbal persuasion could play a vital role in

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teachers' sense of efficacy. Through vicarious experiences teachers might observe and

make social comparisons to other teachers who model good or poor teaching practices

and who seem to have success (or not) with their students. In turn, these teachers could

use these comparisons to judge their own capabilities. Furthermore, dialogue with

others has the potential to persuade teachers that they do possess the capabilities needed

to enhance student learning, and by doing so, strengthen their efficacy beliefs.

Researchers examining teachers' efficacy beliefs have investigated the

relationship between teachers' performance accomplishments (i.e., mastery experiences

within the classroom) and their beliefs in their abilities (e.g., Ashton, Webb, & Doda,

1983; Raudenbush et al., 1992). Given the potential social nature of the school

environment, it is logical to assume that vicarious experience and verbal persuasion

might also play a vital role in informing the efficacy beliefs of teachers. Thus, the

present study expanded upon the current literature by examining the ways in which

vicarious experience and verbal persuasion mediated relations between teachers' sense

of efficacy and their perceptions of certain aspects of the school organization.

Vicarious Experience. For activities such as teaching, no absolute measure of

capability exists. However, one way teachers can assess their adequacy is to observe

and compare themselves to other teachers. Self-efficacy evaluations (i.e., evaluations of

one's ability to perform a given task), therefore, can be partly influenced by vicarious

experiences. Teachers can learn vicariously by observing models perform various

teaching tasks, and these observations can enable teachers to learn about the

possibilities of success or failure in the given task without actually engaging in the task

themselves. The degree to which this occurs is likely to depend on the similarity of the model teacher, her proficiency, and the observing teacher's level of uncertainty.

For instance, peer modeling can be especially influential on self-efficacy evaluations when there is a high degree of perceived similarity between the model and the observer. Specifically, the "most accurate self-evaluations derive from comparisons with those who are similar in the ability or characteristic being evaluated" (Schunk, 1987, p. 149). Thus, the greater the perceived similarity between the observer and the model (i.e., similarity in ability, gender, age), the more persuasive is the model's successes and failures within a given domain (Bandura, 1997). Therefore, teachers who observe others they believe to be similar to themselves perform their teaching roles successfully, are likely to have higher levels of self-efficacy. Similarly, according to Bandura (1997), teachers who observe others perceived to be similar to themselves fail at a task despite high effort, should be likely to experience a decrease in self-efficacy with respect to the same task.

Furthermore, a person's self-efficacy evaluations are highly sensitive to vicarious information when one is uncertain about one's own capabilities in a given domain (Bandura, 1997). So, for example, a first-year teacher, who has not had much prior teaching experience from which to judge her own capabilities, is more likely to seek out models and be influenced by modeling than a teacher who is more confident about her teaching abilities. Bandura (1997) points out, however, that prior experience does not nullify the potential influence of modeling.

Proficiency is another factor that influences the relationship between modeling and efficacy beliefs. When an individual is socially comparing himself to a model that

he sees as proficient, he is likely to put more weight behind that comparison (Bandura, 1997). Thus, efficacy beliefs are more likely to be influenced by a model when the observer sees the model as capable and knowledgeable (Bandura, 1997), such that an inexperienced teacher observing a proficient teaching model could learn more from that model which could then lead to enhanced efficacy beliefs of the observing teacher.

Verbal Persuasion. Individuals can also influence another's efficacy beliefs through verbal persuasion. For example, while facing various challenges, individuals might talk with models about strategies to overcome adversity, and models might put forth the idea that one can achieve despite difficulties faced (Bandura, 1997). Therefore, in a school environment, if teachers express faith in one another's capabilities in the classroom, higher levels of efficacy can be established. As with vicarious experience, an individual is more likely to be persuaded into feeling that he does possess good teaching capabilities if the persuader is someone the individual sees as proficient.

One focus of the present study was to examine sources of efficacy information (i.e., vicarious experience and verbal persuasion) as they relate to teachers' own sense of efficacy. In order for teachers to gather information through vicarious experience and verbal persuasion, interaction with other teachers and opportunities for feedback must exist. Furthermore, teachers must view their colleagues as proficient models. Certain features of the school organization can help to facilitate interaction and opportunity for feedback, thereby increasing the likelihood that teachers will look to their colleagues as models of teaching effectiveness. For instance, schools in which teachers can talk with one another about teaching, collaborate with one another, and

observe each other, offer the opportunities for interaction and feedback that teachers need to obtain information regarding their teaching capabilities. Furthermore, features of a school community can promote a common set of norms and values, and when teachers share similar norms and values regarding student learning, they might be more likely to view their colleagues as models of successful or unsuccessful teaching. In the following section, research pertaining to one specific model of school community will be discussed.

The School Organization—Concept of Professional Community

Various researchers have observed that within a school setting, teachers do not work in isolation (e.g., Bandura, 1997). Whereas teachers might work individually within separate classrooms, they also work within a larger social context that is reflected by the school organization. Therefore, concentrating on teachers as individual workers is not sufficient—a consideration of how teachers work in a collective fashion is also important for a broader understanding of the environment in which teachers work (Bandura, 1997; Louis, Kruse, & Bryk, 1995).

Researchers studying the organizational design of schools have concluded that it is important to create schools that serve as "professional communities" in which teachers become learners together with other teachers. A school-based professional community is one in which "interaction among teachers is frequent and teachers' actions are governed by shared norms focused on the practice and improvement of teaching and learning" (Bryk, Camburn, & Louis, 1999, p. 753). Such communities support development of intrinsic satisfaction within teachers and help moderate professional uncertainty and individual isolation (Louis et al., 1995).

Louis and her colleagues (1995) point out that a school-based professional community is made up of certain essential features: (1) a reflective dialogue among teachers in which they engage in regular discussions about teaching and learning, (2) a deprivatized practice in which teachers help and learn from one another through observation, team teaching, and/or peer coaching, (3) collaboration in which teachers work together on school-wide projects or school improvement efforts, and (4) shared norms and values between teachers that are focused on student learning. Researchers have documented that when these features exist in schools, teacher commitment and student engagement are higher (Bryk, Lee, & Holland, 1993; Lee, Bryk, & Smith, 1993).

Certain practices are especially likely to facilitate teacher interaction and subsequent community building (Bryk et al., 1999; Kruse, Louis, & Bryk, 1995). Specifically, administrators who create time for teachers to meet and talk, physical proximity between teachers, opportunities for interdependent teaching roles, communication structures, and higher levels of teacher empowerment and school autonomy provide a foundation upon which professional communities can be developed. Various social and human dimensions of schools—openness for improvement within the school, trust and respect from colleagues, trust and respect from relevant external members of the community (e.g., parents), teachers' access to expertise, and supportive leadership within the school—also aid in creating a sense of professional community.

The Present Study

In order for teachers' self-efficacy evaluations to be influenced by vicarious

experience and verbal persuasion, opportunities to observe and obtain feedback from other teachers must be made available. Teachers who work within a professional community might have more opportunities for reflection and collaboration with their colleagues, and these opportunities (or lack thereof) might relate to their sense of efficacy. As Bandura (1997) points out, vicarious experience and verbal persuasion are more likely to influence efficacy beliefs when an individual views a model as being similar to herself, proficient, and knowledgeable. Thus, in a professional community in which teachers share norms and values related to student learning, teachers are more likely to accept one another as models of quality teaching and might, therefore, be more willing to accept feedback from each other.

The present study builds upon the extant literature by examining teachers' perceptions of professional community and its features at the departmental level rather than the school level. Current professional community research has focused on school-wide communities, however, research has shown that teachers often feel more of a connection to their specific departments rather than the school as a whole (e.g., Lee, Bryk, & Smith, 1993; McLaughlin & Talbert, 2001; Rowan, Raudenbush, & Kang, 1991). Thus, it is logical to assume that smaller communities within academic departments might exist. Therefore, the relationship between teachers' perceptions of a departmental professional community and teachers' sense of efficacy were investigated, and the ways in which vicarious experience and verbal persuasion mediated this relationship were examined. In order for vicarious experiences and verbal persuasion to influence the degree to which teachers feel they are capable to teach, teachers must believe they have opportunities to observe others within their academic department,

socially compare themselves to these teaching models, talk with others about their

teaching abilities, and accept feedback given to them by their departmental colleagues.

Thus, it is suggested that when an academic department is organized as a professional

community, teachers are more likely to accept each other as proficient models, and

therefore, socially compare and be persuaded by those fellow teachers with whom they

trust, collaborate, and share similar thoughts and ideas about student learning.

Vicarious experiences and verbal persuasion should then be related to teachers' efficacy

beliefs.

The model guiding the current study is illustrated below.
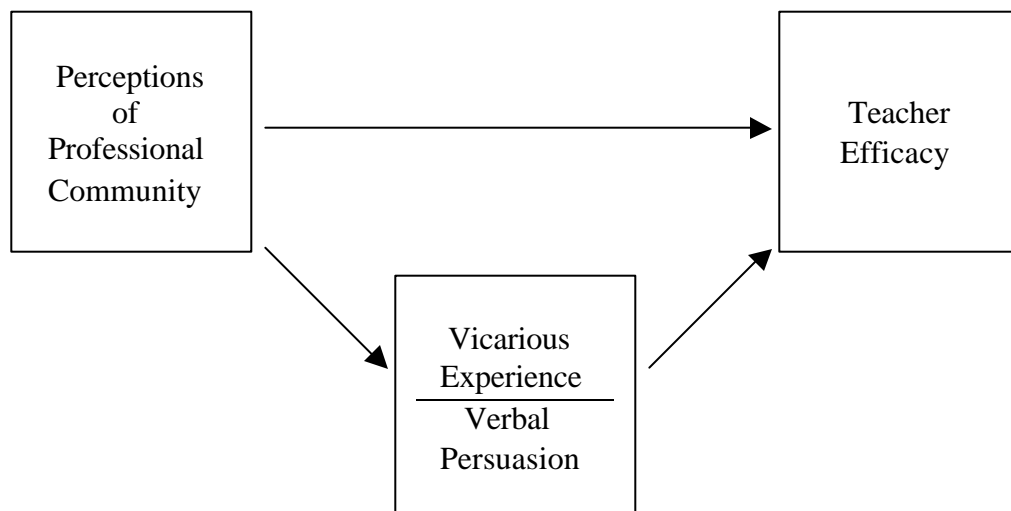
Figure 1: Mediation Model

Drawing from Bandura's theoretical framework (1977, 1986, 1997), teacher

efficacy for this study was defined as a teacher's belief in his or her personal ability to

execute the courses of action needed to positively affect student performance.

Furthermore, the conceptualization of professional community for this study was

partially modeled after the work of Louis, Kruse, and Bryk (1995). Therefore, professional community was defined with respect to teachers' perceptions of reflective dialogue, deprivatized practice, collaboration, and shared norms within their academic department.

Reflective Dialogue. Reflective dialogue refers to teachers' ability to reflect on their teaching practice with one another. This dialogue can consist of many topics surrounding teaching and learning (e.g., classroom management, curriculum, teaching goals). It was expected that, through reflective dialogue, teachers would be able to share teaching strategies and thoughts about teaching that would help to persuade other teachers to persist and put forth extra effort in order to overcome difficulties in their classrooms.

Deprivatized Practice. One way in which teachers can judge their capabilities is to observe the practices of other teachers. When a department promotes a deprivatized practice, teachers move from beyond the isolating walls of their own classrooms and visit the classrooms of other teachers. In addition, teachers will invite their colleagues in to observe and provide feedback on their own teaching. It was expected that this practice would allow teachers to observe each other's successes and failures, thereby receiving vicarious information that might influence their own sense of teaching efficacy. Furthermore, through providing one another with feedback on teaching, teachers might persuade one another that they have the capabilities needed to be a successful teacher.

Collaboration. By collaborating on instruction and working together on projects and departmental improvement efforts, teachers can become familiar with one another

on a personal and professional level. It was expected that when teachers collaborate

and come to know and trust one another, they are more likely to see each other as

competent models, and are therefore, more likely to socially compare themselves to and

be persuaded by one another.

Shared Norms & Values. When teachers in a department share the same values

regarding children, learning, and teaching, certain possible outcomes can occur. First,

teachers who share these common beliefs are more likely to collaborate with one

another, open their classrooms to one another, and be more willing to discuss teaching

and learning with one another (Louis, Marks, & Kruse, 1996). Second, teachers who

share the same educational values might also be likely to view their colleagues as

proficient models with whom they can compare themselves and from whom they can

receive persuasive feedback regarding teaching.

In the current study it was expected that teachers who reported opportunities to

talk with one another about student learning, observe others during their work in the

classroom, and collaborate with other teachers on departmental projects would have a

higher sense of efficacy than those teachers who did not believe the essential features of

a departmental professional community to exist. Furthermore, teachers who believed

they work within a department in which professionals share norms and values regarding

student learning would also experience higher levels of efficacy than those who did not,

since teachers who shared these norms and values might see each other as proficient

models and might talk with one another and collaborate more than teachers who did not

share the same belief systems. Moreover, it was expected that the relationship between

teacher efficacy and professional community would be mediated by vicarious

experience and verbal persuasion, two of the four principal sources of information discussed in Bandura's social-cognitive theory of self-efficacy.

Direction of Influence

Whereas social cognitive theory highlights the relationship between personal characteristics and the environment as bidirectional, the main goal of the current study was to consider the influence the school environment (i.e., professional community) might have on teachers' efficacy beliefs. One hypothesis of the current study was that when teachers experience more opportunities to talk with one another about teaching, collaborate with one another, and observe one another, they are provided with interaction and feedback needed to evaluate their teaching abilities. Although it was also likely that teachers' beliefs about efficacy might influence the types and quality of professional community that develops in their department, a purpose of the current study was to document the mechanisms by which teachers' efficacy beliefs were informed by others (i.e., vicarious experience and verbal persuasion). In other words, it was hypothesized that the various professional community features would provide the necessary vicarious and verbal feedback from which teachers could then evaluate their teaching capabilities. Therefore, the unidirectional link between professional community and teacher efficacy, as mediated by vicarious experience and verbal persuasion, was the focus.

Unit of Analysis

Some investigations of school contextual influences on teachers' efficacy beliefs have consisted of multiple levels of analyses (e.g., teachers within schools—Newmann, Rutter, & Smith, 1989; Raudenbush, Rowan, & Cheong, 1992). Whereas these studies

have examined community as a school attribute, the goal of the current study was not to determine objectively if professional communities exist as a departmental characteristic, but rather to reveal teachers' subjective experiences, or *perceptions*, of a community network within their department and to investigate the relationship between these perceptions and teachers' sense of efficacy. Teacher efficacy researchers who examine relationships between school organizational variables and efficacy (e.g., Woolfolk & Hoy) have set a precedent of using individual teachers' perceptions of their school organization as the unit of analysis. Therefore, this study followed the pattern established in the extant literature and examined both teachers' efficacy beliefs and teachers' perceptions of professional community at the individual level. Further discussion of this issue will take place in subsequent chapters.

Measurement Issues

One weakness of current literature on teacher efficacy is the lack of clarity and consistency in the conceptualization and measurement of the teacher efficacy construct. This issue is especially problematic in research examining the relationship between teacher efficacy and school contextual factors (e.g., Hoy & Woolfolk, 1993; Lee et al., 1991; Newmann et al., 1989), in part, because many of these studies lack a sound theoretical framework to guide conceptualization and measurement of teacher efficacy. Therefore, another purpose of the current study was to explore these measurement issues through an investigation of the relationship between teacher efficacy and perceptions of professional community using both previously used teacher efficacy measures (i.e., Gibson & Dembo, 1984; Lee et al., 1991; Newmann et al., 1989) and a recently designed teacher efficacy scale (Tschannen-Moran & Woolfolk Hoy, 2001).

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These issues will be discussed in greater detail in the forthcoming chapter.

In sum, the proposed study extends the current literature in the following ways. First, this study examined the relationship between teacher efficacy and teachers' perceptions of professional community features within their department. Second, this study sought to investigate the mediating (i.e., vicarious experience and verbal persuasion) mechanisms involved in the link between teacher efficacy and perceptions of professional community. To this end, the following research questions were explored:

<u>Research Questions</u>

1. How is teacher efficacy related to professional community, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

2. How does the relationship between teacher efficacy and professional community differ as a function of different measures designed to assess the teacher efficacy construct, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

3. To what extent does teacher efficacy relate to features of a professional community (i.e., reflective dialogue, deprivatized practice, collaboration, shared norms and values) by way of vicarious experience and verbal persuasion, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

<u>Definition of Terms</u>

1. Teacher Efficacy: A teacher's belief in his or her personal ability to execute the courses of action needed to positively affect student performance.

2. Professional Community: A community in which interaction among teachers is frequent and teachers' actions are governed by shared norms focused on the practice and improvement of teaching and learning.

3. Reflective Dialogue: Conversations among teachers that focus on issues of teaching and learning.

4. Deprivatized Practice: Teachers' observations of one another in the classroom, followed by feedback.

5. Collaboration: Teachers working together on projects outside of the classroom that are related to instruction and school improvement.

6. Shared Norms and Values: Teachers' shared beliefs regarding teaching and learning.

7. Vicarious Experience: Observations of models that will enable teachers to learn about the possibilities of success or failure in a given teaching task without actually engaging in the task themselves.

8. Verbal Persuasion: Dialogue between teachers in which they express faith in one another's teaching capabilities.

Chapter 2

Review of the Literature

According to social cognitive theory (Bandura, 1977, 1986) human thought and behavior cannot be fully understood unless it is examined within the social system in which it operates. This is true for teachers' beliefs and behavior as well. At the most rudimentary level, teachers are responsible for imparting knowledge to students who vary in learning styles, behavior, and levels of motivation. During the teaching process, teachers formulate beliefs about their capabilities to produce these desired student outcomes. Whereas these efficacy beliefs reflect individual experiences with students, these beliefs also develop as a function of feedback from the broader school social environment comprised of other teachers and administrators. Thus, for the purposes of the current study, teachers' feelings of efficacy cannot be completely understood unless they are examined beyond the classroom and within the larger social system of the school—the contexts within which teachers work on a daily basis.

Since the construct of teacher efficacy was introduced into the literature approximately 25 years ago, researchers have found certain school environment factors (e.g., principal leadership, interdisciplinary team organization, student characteristics) to be related to the efficacy beliefs of teachers (e.g., Ashton & Webb, 1986; Lee, Dedrick, & Smith, 1991; Raudenbush, Rowan, & Cheong, 1992). However, not all research conducted on the relationship between school environment and teachers' efficacy beliefs has produced conclusive results. Possible reasons for inconsistencies in the literature lie with the theoretical frameworks used to guide these studies, discrepancies in how teacher efficacy has been defined, and the measurement of the

teacher efficacy construct. The following review will highlight how the current study

will improve upon these inconsistencies and will discuss social cognitive theory as a

framework to guide the present research, the theoretical and conceptual development of

teachers' efficacy beliefs, the various measures that have been used to assess these

beliefs, and the organizational variables that have been found to correlate with this

construct.

<u>Theoretical Framework</u>

Social cognitive theory (Bandura, 1977) describes individuals as operating

within a series of social systems. According to Bandura (1977, 1986, 1989, 1997),

human agency must be explained within an interdependent causal structure in which

individuals' personal characteristics, behavior, and surrounding environments interact—

a model he terms "triadic reciprocal causation." In this view, people are seen as both

products and producers of their environments (Bandura, 1997), and individuals'

thoughts and feelings play a key role in how they view and act on the world. Humans

are capable of self-reflective thought, and through this self-reflection, they evaluate

their capabilities, surrounding environments, behavior, and future actions. Self-efficacy

is viewed as a crucial component of social cognitive theory and is defined as "beliefs in

one's capabilities to organize and execute the courses of action required to produce

given attainments" (Bandura, 1997, p. 3).

Self-efficacy is a multidimensional construct, varying in level, generality, and

strength (Bandura, 1997). Efficacy beliefs of individuals can be based upon tasks in a

particular domain that lie on a continuum from simple to moderately difficult to

extremely taxing. Furthermore, individuals might feel efficacious in a wide range of

activities or only in certain domains, and these efficacy beliefs might be weak, strong, or somewhere in between. Moreover, efficacy beliefs are not a fixed trait of an individual. On the contrary, these beliefs might fluctuate given an individual's evaluation of his performances and accomplishments in a given domain and at a given point in time. The relationship between people's past experiences, sense of efficacy, and future performances is guided by their interpretation of their performances rather than the actual performance itself. Thus, people's perceived self-efficacy is not an assessment of their skill set, but rather a belief about what they can or cannot accomplish under various circumstances, given the skills they do possess. Self-efficacy beliefs, therefore, act as a mediator between individuals' knowledge of their skills and their future actions. As a result, when compared to their non-efficacious counterparts, efficacious individuals are less likely to avoid challenging activities that might exceed their capabilities, are more likely to expend more effort and persist longer in the face of difficulty, and are less likely to dwell on personal shortcomings or see potential challenges as more difficult than they really are (Bandura, 1986).

Finally, personal efficacy judgments (an individual's belief about his or her ability to execute a particular behavior) are related to, but distinguished from, outcome expectations (an individual's belief about the outcomes of those behaviors). Thus, a teacher can believe that a given teaching technique can lead to changes in student performance (outcome expectation), but doubt in her ability to successfully execute the actions needed to carry out that technique (efficacy belief). However, whereas one can differentiate between efficacy beliefs and outcome expectations, the two are not always completely separable. In situations where outcomes are highly dependent on quality of

performance, anticipated outcomes are largely reliant on how well people believe they can accomplish a particular task. Yet, for activities such as teaching, where expected outcomes might vary due to factors other than quality of performance, efficacy beliefs account for only partial variation in outcome expectancies. For instance, whereas a teacher might contribute to increases in student achievement, this outcome might not be completely controlled by the quality of instruction. Other factors (e.g., student motivation, home environment, school obstacles) might also contribute to student progress. Thus, teachers' beliefs about the outcomes of high-quality teaching are *not* completely contingent upon their beliefs about their own ability to teach effectively.

Relating self-efficacy theory back to the overarching social cognitive theory, individuals' personal efficacy beliefs, surrounding environments, and behavior are interdependent. Thus, how individuals' interpret or self-reflect on their performance in a particular domain or on a specific task can be altered by their environment. Their beliefs about themselves will then affect their subsequent performances. One purpose of the current study was to examine teachers' efficacy beliefs within the context of their school environment. Specifically, the relationship between teachers' efficacy beliefs and perceptions of a sense of community within the school was investigated.

Sources of Efficacy Information

Individual's self-efficacy beliefs are not a static trait. Indeed, these beliefs might be influenced by various factors, and given the changing tasks and environments in people's lives, are constantly being reevaluated. In order to evaluate their self-efficacy, individuals cognitively process sources of information. People's efficacy beliefs are informed through their actual performance accomplishments, vicarious

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experiences through which they see or visualize similar individuals succeed or fail in a given task, verbal persuasion during which others attempt to move them towards a positive belief in their abilities, and physiological indicators (e.g., heart rate, trembling, sweating) from which they can judge their capability (Bandura, 1977, 1986, 1997).

Whereas performance accomplishments provide the most influential source of efficacy information (e.g., Bandura, 1986; Bandura, Adams, & Beyer, 1977), individuals do not rely solely upon direct experience to gather information about their capabilities. Instead, watching others model certain tasks or behaviors (vicarious experience) and listening to models provide persuasive information about one's abilities (verbal persuasion) can also be informative.

Vicarious Experience. Because efficacy beliefs are partly influenced by vicarious experiences (Bandura, 1997), modeling serves as an effective way of gauging one's capabilities in a particular domain, especially in domains which lack objective standards to measure accomplishments (e.g., teaching). For such domains, individuals compare themselves to models who they perceive as similar to themselves (Bandura, 1997; Schunk, 1987). Specifically, observing models that are believed to be similar in ability or competence level can serve as an important source of information for self-evaluations, especially when the observer lacks familiarity in the modeled task (Schunk, 1987). Watching similar models succeed at a task can increase an observer's self-efficacy and motivate them to attempt the task themselves; seeing a model similar to one's self fail at a particular task can decrease self-efficacy beliefs and motivate one to *avoid* the given task.

Verbal Persuasion. Persuasive information provided by others regarding one's

capabilities can also enhance or hinder self-efficacy beliefs (Bandura, 1997; Schunk, 1982). If individuals are feeling unsure about their capabilities in a given domain, hearing others praise their successes and provide strategies for overcoming challenges can instill the notion that one can achieve in a particular area. As with vicariously experiencing the successes and failures of competent models, verbal persuasion is more believable to individuals when the source is skilled in the activity being discussed.

Another focus of the current study was to examine vicarious experience and verbal persuasion as they relate to the efficacy beliefs of teachers. It was hypothesized that the relationship between teacher efficacy and professional community in academic departments was mediated by these sources of efficacy information. Specifically, if teachers believed they had the chance to observe one another in practice and talk with one another about teaching, these opportunities for interaction and feedback might provide teachers with the information needed to inform their self-efficacy beliefs.

<u>Teacher Efficacy</u>

How does social cognitive theory and, more specifically, self-efficacy theory (including vicarious experience and verbal persuasion) relate to teachers and their work environments? Within the walls of their classrooms, teachers work to influence positive student outcomes. Teachers evaluate their ability to carry out this task based on the skills they have and the circumstances with which they must work. Self-efficacy theory suggests that the efficacy beliefs that teachers formulate develop from the cognitive processing of their direct accomplishments within the classroom, incidents in which they vicariously experience other teachers' successes or failures, verbally persuasive encouragement and compliments from others about their teaching ability, and positive

or negative physiological states.

Social cognitive theory suggests that teachers' efficacy beliefs and behavior cannot be understood independently of the school environment in which they are embedded. Whereas a large portion of a teacher's work life is spent within the classroom, teachers also work within a social system made up of other teachers, students, and administrators. Therefore, the current study will focus on the possibility that teachers' subjective experiences within the school environment are related to their efficacy beliefs. The following sections will highlight existing research on teacher efficacy. Specifically, research examining sources of efficacy information and the relationship between teacher efficacy and the school environment will be reviewed, with a focus on inaccuracies in the conceptualization and measurement of the teacher efficacy construct.

Conceptualization and Measurement of Teacher Efficacy

Drawing from Bandura's social cognitive theory (1986) and self-efficacy theory (1977, 1997), the current study defined teacher efficacy as a teacher's belief in his or her personal ability to execute the courses of action needed to positively affect student performance. Therefore, the main interest of this study involved teachers' personal beliefs concerning their own teaching abilities—not their beliefs concerning whether teaching can alter student performance. Historically, the teacher efficacy construct did not evolve from Bandura's (1977) social cognitive framework. Teacher efficacy first entered the literature with studies conducted by the RAND Corporation, and early conceptualization was influenced by Rotter's (1966) social learning theory (Armor et al., 1976). Rotter's theory is centered on internal versus external control of

reinforcement, and those using this theoretical framework defined teacher efficacy as the extent to which teachers believe that influencing student outcomes is within their control (internal) or outside their control (external). Efficacious teachers, therefore, would believe that affecting student performance was internal to them and within their control. Conversely, inefficacious teachers would believe that the environment has more of an impact on student learning and that reinforcement of their teaching efforts is external to them and beyond their control.

Although the difference might be subtle, self-efficacy and locus of control are conceptually distinct. The concept of locus of control concerns an individual's belief about whether outcomes are internally or externally controlled. However, one can believe that a task outcome is determined more by their own actions than external forces, but still feel *unable* to execute the actions successfully, thereby exhibiting an internal locus of control but a low sense of efficacy. Applying this distinction to teachers, a teacher can believe that influencing student outcomes is within the realm of a teacher's control, but feel she personally does not have the skills to do so successfully. Thus, discussions in which teachers' sense of efficacy is seen as synonymous with teachers' locus of control (e.g., Guskey, 1981, 1982, 1988; Rose & Medway, 1981) are imprecise. Despite this conceptual distinction, Bandura's (1977) theory has been intertwined with Rotter's (1966) theory in the literature, creating confusion in subsequent conceptualization and measurement of the teacher efficacy construct. Researchers attempting to create adequate measures of this construct have inaccurately brought the two conceptual strands together when, in fact, they should be separate.

Empirical assessments of teacher efficacy began when RAND researchers

(Armor et al., 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977) developed a two-item scale based on a locus of control framework: (1) "When it comes right down to it, a teacher really can't do much—most of a student's motivation and performance depends on his or her home environment;" (2) "If I try really hard, I can get through to the most difficult or unmotivated students." Both items were designed to assess teachers' personal beliefs about their teaching ability and whether or not teachers can overcome external factors to increase student motivation and performance. Teacher efficacy was operationally defined by these two items through the early 1980s.

In an attempt to create a more reliable teacher efficacy measure, Gibson and Dembo (1984) created the 16-item Teacher Efficacy Scale (TES). Using Bandura's (1977) theory of self-efficacy to guide them, Gibson and Dembo argued that the two RAND items corresponded to Bandura's dimensions of outcome expectations and efficacy beliefs. Specifically, the first RAND item was thought to reflect an outcome expectancy, whereas the second item assessed self-efficacy. This interpretation led Gibson and Dembo (1984) to develop additional items similar to those used by the RAND researchers. Factor analytic procedures produced two distinct factors in the TES, allowing Gibson and Dembo to conclude that their interpretation was valid. They labeled the factors *teaching efficacy* (also called general teaching efficacy, or GTE) and *personal teaching efficacy* (PTE).

Gibson and Dembo (1984) maintained that if Bandura's theory is applied to the teacher efficacy construct, "outcome expectancies would essentially reflect the degree to which teachers believed the environment could be controlled, that is, the extent to which students can be taught given such factors as family background, IQ, and school

conditions" (pg. 570). However, Gibson & Dembo's conceptualization of GTE reflects a locus of control perspective, not an outcome expectation. An outcome expectancy, for example, would reflect whether a teacher believes that good teaching leads to enhanced student performance. Gibson and Dembo's interpretation, on the other hand, concerns teachers' beliefs about where control lies for student learning (i.e., internal or external). Researchers have challenged the TES factors (i.e., Guskey & Passaro, 1994) and, after close inspection and investigation, reported that the PTE and GTE factors correspond to internal and external control orientations, respectively, rather than to efficacy beliefs and outcome expectations. Specifically, Guskey and Passaro (1994) reworded the items from Gibson and Dembo's instrument to reflect four different orientations: personal-internal, personal-external, teaching-internal, and teaching-external. Factor analysis confirmed the existence of two factors, however their two factors did not relate to personal versus general teaching efficacy, but instead items that were negative and external in their orientation loaded on one factor, whereas positive and internal oriented items loaded on the second.

Others who have investigated the factor discrepancy have urged researchers to "remember that the TES was originally developed from the two RAND items which were based on *locus of control theory*. Gibson and Dembo (1984) later interpreted the items as reflecting *self-efficacy theory*. Accordingly, the TES appears to have both theoretical orientations captured in its items" (Henson, 2002, p. 139). Despite the confusion, the TES and Gibson and Dembo's two-tiered definition of the teacher efficacy construct have been the most prevalent in the extant literature. As a result, inconsistencies in findings are apparent as researchers obtain different outcomes for

personal and general teaching efficacy. Further contradictions in results are evident as some researchers combine the two components (personal and general) into their teacher efficacy conceptualizations. Consequently, discussions of teacher efficacy antecedents and consequences become unclear as one tries to determine which component (if any) is responsible for which result. Because of the current study's focus on efficacy beliefs and exclusion of outcome expectancies, when applicable, this review will concentrate on research relating to personal, not general, teacher efficacy.

A Current Model of Teacher Efficacy

In an attempt to shed some light on the meaning and measure of teacher efficacy, Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) developed a model that brings together the two competing conceptual strands from previous teacher efficacy research and provides a more comprehensive look at how self-efficacy beliefs relate to teachers. Building on Bandura's (1977) theory of self-efficacy, Tschannen-Moran and her colleagues argued that teacher efficacy is really a reflection of a teacher's analysis of the teaching task and assessment of his or her personal teaching competence. Consequently, they contend that cognitive processing of sources of efficacy information (i.e., performance accomplishments, vicarious experience, verbal persuasion, and physiological states) feed into teachers' assessment of these joint functions, which then determines their level of efficacy.

This notion of teacher efficacy builds from Bandura's (1986) contention that self-efficacy acts as a mediator between an individual's knowledge of their own skill set and this individual's future actions. This new model stipulates that when presented with a teaching task, teachers first give thought to what is involved in that task (i.e., duties,

obstacles) and how they feel they could perform within those circumstances, given the skills they know they possess. If a teacher believes she can affect student performance after having reflected on what the task entails, she would be considered efficacious. This view of teacher efficacy falls in line with Bandura's (1986) social cognitive theory, showing the interdependent nature of efficacy beliefs, environment, and behavior.

This added element (i.e., analysis of task and assessment of competence) to the teacher efficacy model also highlights the specificity of the teacher efficacy construct. In this view, teachers' self-evaluations are highly reliant upon the specific task at hand. Bandura (1997) and others (e.g., Pajares, 1996) have suggested that self-efficacy is not a global construct, but rather it varies across tasks, domains, and contexts. However, measures utilized throughout most of teacher efficacy's history (e.g., TES) have decontexualized these beliefs in their assessment. Efficacy beliefs have been shown to be more predictive of behavior when assessed according to specific tasks (Bandura, 1997; Pajares, 1996), and it has been suggested that global measures of efficacy might actually assess an entirely different construct, such as a personality trait (Henson, 2002).

Given the specific nature of efficacy beliefs, measures must be adapted to specific activity domains and represent varying levels of task demands within those domains (Bandura, 1997). As a result, the current study utilized the Teacher Self-Efficacy Scale (TSES—Tschannen-Moran & Woolfolk Hoy, 2001). This scale measured teachers' sense of efficacy in three separate teaching domains/tasks: instructional practices, student engagement, and classroom management. The relationship between perceptions of specific school factors and teachers' beliefs about their abilities in these three areas were investigated.

Research on Teacher Efficacy

Despite the conceptualization and measurement confusion in past research,

teacher efficacy has emerged as a powerful construct in the literature. Following

Bandura's (1986) model of triadic reciprocal determinism, research conducted on

teachers' sense of efficacy can be categorized according to certain bidirectional links

between efficacy, behavior, and environment. Research investigating the link between

teacher efficacy and behavior has been the most prevalent, followed by the examination

of the relationship between teacher efficacy and environment. This section will focus

on the findings of this research and how the current study builds upon the extant

literature.

Teacher Efficacy and Classroom Behavior

As self-efficacy theory suggests, efficacious individuals are more likely to

engage in challenging activities, strive to obtain higher goals, and persevere through

difficult situations (Bandura, 1977). Efficacious teachers, therefore, should exhibit

behaviors that show this generative ability. Theoretically, teachers' beliefs in their

ability could influence the risks they take in the classroom, the goals they set for

themselves and their students, the instructional practices they utilize, and how they

persist in the face of adversity. Research has supported the theory and shown higher

levels of teacher efficacy to be conducive to positive classroom behaviors.

Teachers with a higher sense of efficacy have been found to spend more time

preparing for class and spend more class time in whole-group rather than small-group

instruction (Gibson & Dembo, 1984). Efficacious teachers also set more ambitious end-

of-year goals for their students (Allinder, 1995), criticize students less for incorrect

responses (Ashton & Webb, 1986; Gibson & Dembo, 1984), and are more positive and

supportive in the classroom (Ashton & Webb, 1986). Moreover, these teachers receive

higher ratings for lesson presenting, classroom management, and questioning behaviors

(Saklofske, Michayluk, & Randhawa, 1988), implement more cooperative learning in

their classrooms (Shachar & Shmuelevitz, 1997), permit open communication with their

students, and are less likely to use seatwork and student-controlled activities (Ashton &

Webb, 1986). Less efficacious teachers, on the other hand, have been more likely to

lack persistence with students who provide incorrect responses (Gibson & Dembo,

1984) and are more likely to sort students by ability level and give preferential

treatment to students with high ability (Ashton, Webb, & Doda, 1983).

These findings illustrate the potentially powerful nature of teachers' efficacy

beliefs, yet whereas links between teachers' efficacy beliefs and their classroom

behaviors have been established in the literature, the current study focused on the

relationship between teacher efficacy and the school environment.

Teacher Efficacy and Environment

On a daily basis, teachers interact with their school environment, influencing

and being influenced by their work surroundings. In order to fully understand the

complexity of the school organization and how certain school variables might be related

to teachers' beliefs, this section will highlight studies designed to investigate the

relationship between teacher efficacy and the school environment and briefly discuss

research conducted on school structure, function, and effectiveness.

In their study examining the effects of school organization on teacher efficacy,

Lee, Dedrick, and Smith (1991) discussed factors influencing teachers' efficacy beliefs

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in terms of intrinsic and extrinsic sources of information. They reasoned that intrinsic sources come from information teachers receive from inside the classroom, whereas extrinsic sources come from the larger school context. Following this model, research investigating within-classroom (intrinsic) and school-level (extrinsic) influences on teachers' sense of efficacy will be reviewed.

Within-Classroom Influences

Because teachers spend the majority of their workday in the classroom, it is not surprising that variables within this smaller context contribute to their beliefs about their capabilities. Intrinsic factors that have been examined in the literature include student characteristics and teachers' control over the classroom environment.

Student Characteristics. Exchanges with students serve as the primary form of interaction for teachers within the school environment. Because of this, researchers have investigated how various student characteristics relate to the efficacy beliefs of teachers. One study in particular (Raudenbush, Rowan, & Cheong, 1992) examined the relationship between student factors (i.e., age, ability, engagement) and teacher efficacy in a sample of 315 high school teachers. Variables were measured at the class level, therefore teachers responded to questions regarding the track level of their students (e.g., vocational, general, college, honors, or mixed) in each class, what percentage of students they felt were actively engaged in each class, and their level of efficacy in each class.

Findings from this study showed substantial track effects on teachers' level of efficacy, indicating a strong positive relationship between students' ability level and teachers' self-efficacy. Specifically, teachers reported higher levels of efficacy in

honors classes than in vocational and general track classes. Moreover, the effect of track level on teacher efficacy varied significantly across academic disciplines, with the track effects more pronounced in math and science classes than in English and social studies classes. Teachers also reported lower levels of efficacy when teaching younger students than when teaching older students. However, both track and student age effects diminished significantly once student engagement was added to the model. Student engagement was also strongly related to teachers' self-efficacy, and the authors concluded that track and age effects on student efficacy were closely tied to track and age effects on student engagement. In other words, the possibility exists that teachers found low-track students and younger students to be difficult to engage, thereby feeling less able to carry out the tasks needed to affect performance for these students (Raudenbush et al., 1992).

Whereas Raudenbush and his colleagues found significant relationships between student characteristics and teachers' efficacy beliefs, it is important to note their conceptualization and measurement of the teacher efficacy construct. Similar to the present study, Raudenbush, Rowan, and Cheong worked from Bandura's theoretical base and used Bandura's definition of self-efficacy in their conceptualization. They also focused only on efficacy beliefs, excluding outcome expectations, and followed Bandura's lead in their discussion of teacher efficacy as a context specific construct. However, they measured teachers' self-efficacy with one item that appears to assess more of each teacher's feelings of success than their beliefs about their ability to carry out the tasks needed to affect student performance: "To what extent do you feel successful in providing the kind of education you would like to provide for the students

in this class?" This type of teacher efficacy assessment adds to the inconsistency in measurement of this construct and brings into question the reliability and validity of the results.

Teacher Control in the Classroom. When teachers exert a certain level of control over the classroom setting, they are able to change certain conditions of the learning environment. Control over teaching content, curriculum, and teaching techniques might help teachers to feel more effective in the classroom, whereas lack of control could lead to feelings of ineffectiveness. Researchers have studied whether or not level of control in the classroom relates to teachers' efficacy beliefs.

In their study of high school teachers, Raudenbush and colleagues (1992) examined teachers' control over school and classroom policy, students' behavioral codes, the school's curriculum, the selection of textbooks, teaching content and techniques, and the amount of homework assigned. Results revealed a significant positive relationship between level of teacher control and teachers' sense of efficacy. Similarly, Lee, Dedrick, and Smith (1991) analyzed 8,488 high school teachers' perceptions of control over selecting textbooks and other instructional materials, selecting content, selecting teaching techniques, disciplining students, and determining the amount of homework to be assigned. They also found that teachers' perceptions of how much control they had in the classroom were positively associated with their efficacy beliefs.

Similar to the Raudenbush et al. (1992) study, it is not clear whether Lee et al.'s findings reflect an accurate representation of teachers' efficacy beliefs. Because self-efficacy and satisfaction were highly correlated among teachers in their sample, Lee and

her colleagues chose to combine the constructs into a single factor. As a result, their teacher efficacy measure contains questions thought to assess each construct. The authors contend that two of the items in their four-item scale tap teachers' self-efficacy beliefs ("To what extent do you feel successful in providing the kind of education you would like to provide for most of your students?" and "I sometimes feel it is a waste of time to try and do my best as a teacher"), yet these items do not reflect the conceptualization of teacher efficacy found in many other teacher efficacy studies.

School-Level Influences

Although teachers spend a large amount of time with students inside their classrooms, additional factors contribute to the overall social system of the school environment. In their review of research on effective schools, Lee, Bryk, and Smith (1993) state that research investigating the structure of the school environment can be organized around three interdependent features: (1) The school's organization of authority, including the role and function of administration within the school, the goals that schools set for themselves and whether these goals are disseminated amongst faculty and staff, and the degree to which teachers are empowered to make school-based decisions; (2) The formal organization of the school work environment, including the division of labor among teachers and the function of academic departments; and (3) The school's social organization, where the focus becomes the interactions between teacher and student, student and student, and collegial relationships between teachers. Research investigating the relationship between factors of the school environment and teachers' beliefs in their abilities can also be reviewed within these broad organizational features.

School Organization of Authority. The hierarchical structure of school

organizations can influence the cohesion of the school environment. More specifically, the principal's role and function within the power structure of a school might have an impact on the school's internal setting (Lee et al., 1993). Furthermore, the fluidity with which information filters from administration to teachers can vary from school to school, with school size determining the efficiency of information flow (Fuller & Izu, 1986), and the administrations' ability to diffuse a school's hierarchical organization to allow teachers to aid in school-based decisions is also variable. A small number of studies have examined specific variables related to schools' organization of authority in relation to teachers' efficacy beliefs.

For instance, Newmann, Rutter, and Smith (1989) investigated links between features of school organizations and efficacy in 353 public high schools. Conducting their analysis at the school level rather than the individual level, researchers asked teachers to report on their perceptions of such variables as principal leadership (e.g., deals effectively with outside pressures, carries through with plans and priorities), administrators' responsiveness (e.g., support and concern) toward the staff, staff influence in school decisions, and the encouragement of innovation, as well as their individual perceptions of efficacy. Certain demographic variables such as school size, race, and location (urban or suburban) were also measured. Regression analyses revealed that schools in suburban locations with a lower percentage of white students showed higher levels of efficacy. However, when organizational features were added to the model, effects of race and location were reduced to nonsignificance, indicating that school organizational characteristics can mediate the effects of school demographic features on efficacy. Specifically, efficacy was associated with encouragement of

innovation and administrative responsiveness, whereas principal leadership and teachers' influence in school decisions were not related to efficacy. Furthermore, the addition of organizational features tripled the amount of variance in efficacy explained by the model.

The validity of these results could be questioned, however, because of the conceptualization and measurement of the teacher efficacy construct. Newmann and his colleagues (1989) defined teacher efficacy as "the teacher's perception that his or her teaching is worth the effort, that it leads to the success of students and is personally satisfying" (pg. 223), and they measured teacher efficacy with the same four-item scale discussed in Lee, Dedrick, and Smith's (1991) analysis. This definition and assessment reflects yet another unique conceptualization of teacher efficacy and does not correspond to other teacher efficacy scales.

Lee et al. (1991) also investigated the relationship between organizational features and teachers' self-efficacy in 354 Catholic and public schools (a subsample of the same national sample from which Newmann et al's subsample was obtained). Reporting their findings at the individual level, these researchers assessed the same organizational features as Newmann and colleagues (1989), as well as additional demographic variables such as school size and average socioeconomic status. Taking into consideration the imprecise measurement of teacher efficacy in their study (discussed in the previous section), and after the researchers combined additional correlated variables (e.g., principal leadership, administrative responsiveness, and encouragement of innovation) results indicated that teachers in Catholic schools were more efficacious than their counterparts in public schools. Both school size and average

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SES were positively related to teachers' self-efficacy. Furthermore, schools in which

teachers perceived the principal to be a strong leader showed significantly higher levels

of efficacy in their teachers, which contradicts findings from Newmann et al.'s (1989)

study. Results from the study conducted by Raudenbush and colleagues (1992) also

showed nonsignificance for the investigated relationship between principal leadership

and teacher efficacy.

In another study, Hoy and Woolfolk (1993) explored the relationship between

organizational characteristics and teacher efficacy. Specifically, they sampled 179

teachers from 37 elementary schools and assessed schools' ability to cope with outside

pressures, principals' ability to influence the actions of higher-level administrators,

principals' considerate behavior and genuine concern for teachers (similar to Newmann

et al.'s, 1989 assessment of administrative responsiveness), schools' supplies of

adequate resources, and the extent to which schools strive for academic excellence.

Teacher efficacy was assessed using an adapted version of Gibson and Dembo's (1984)

Teacher Efficacy Scale. Findings showed that principal influence and schools'

emphasis on academic excellence were both related to teachers' personal efficacy,

whereas principals' considerate behavior was not related to efficacy, contradicting

findings from Newmann et al.'s (1989) investigation.

In summary, the relationship between schools' organization of authority and

teachers' efficacy beliefs has yielded inconsistent results. Inconsistencies in the

literature can be characterized along two broad, previously noted dimensions. First,

researchers studying this construct differ in their theoretical frameworks, thereby

creating different meanings for the teacher efficacy construct. Second, contradictory

conceptualizations of teacher efficacy have led to imprecise, conflicting measures of this construct. Whereas lack of conceptual and operational clarity create problems for interpreting and understanding teacher efficacy research, further confusion comes into play when examining teacher efficacy studies conducted by school effectiveness researchers (e.g., Lee et al., 1991; Newmann et al., 1989; Raudenbush et al., 1992). The conceptualization and operationalization of the teacher efficacy construct within these studies differs from mainstream teacher efficacy research.

Organization of the School Work Environment. Much of the research conducted on school organization of work environments has focused on elementary schools, emphasizing classroom and instructional organization for different subject areas (e.g., Barr & Dreeben, 1983; Lee et al., 1993; Stodolsky, 1988). Less research has concentrated on the organization of teams and departments at the secondary school level. Middle school teams and high school departments are where much of the decision making regarding students, courses, and teaching takes place (Ashton et al., 1983; Rosenholtz, 1985), and existing research on high school organization suggests that departments play an important role in teachers' academic lives (Lee et al., 1993).

High school teachers often feel more of a social connection to their departments than to the school as a whole (Lee et al., 1993). Furthermore, teachers from different departments have also been shown to hold different views (i.e., positive or negative) about their school organization (Rowan et al., 1991), indicating that teachers' loyalties within departments—at least at the high school level—might be stronger than their ties to the overall school (Lee et al., 1993).

At the middle school level, teachers might be organized as teams, departments,

or both. Warren and Payne (1997) conducted a study with 12 middle schools, of which

4 had interdisciplinary teams with a scheduled common planning time, 4 had

interdisciplinary teams without allocated common planning time, and 4 had traditional

departmental organizations (e.g., grouped by subject area). They sought to explore the

impact of these organizational patterns on teachers' efficacy beliefs. Using Gibson and

Dembo's (1984) scale as a measure of teacher efficacy, Warren and Payne (1997) found

that teachers organized as teams with common planning time reported significantly

higher personal efficacy than teachers working in teams without common planning time

and teachers organized departmentally.

School Social Organization. Beyond the formal educational purposes they

serve, schools also function as social organizations composed of collegial relations

among teachers, peer relations among students, and connections between teachers and

students (Lee et al., 1993). Given the focus of the current study, research centered on

social relations between teachers will be discussed.

Both formal and informal functions of teachers' social relations have been

emphasized in the literature. Existing research suggests that formally, collegiality

among teachers can promote academic progress within a school by enhancing

communication among faculty regarding specific topics related to students, curriculum,

or other school-related problems (Lee et al., 1993). However, social networks within a

school organization also serve an important, informal purpose. Spending time with

colleagues promotes a friendly school atmosphere and can increase teachers' job

satisfaction (Lee et al., 1993). Furthermore, having a personal connection with

colleagues can help teachers feel less isolated and vulnerable, and can provide

encouragement to teachers (Rosenholtz, 1985, 1987).

Faculty collaboration, communication, morale, and sense of community are the only school social organizational variables to be studied in relation to teacher efficacy. As noted previously, teachers with common planning time reported higher levels of teacher efficacy than teachers with no common planning time (Warren & Payne, 1997). Furthermore, Newmann et al. (1989) found that schools in which teachers made a conscious effort to coordinate their content with other teachers and in which teachers were familiar with the content of courses taught by other teachers in their department, showed higher levels of teacher efficacy.

Another study conducted by Taylor and Tashakkori (1995) examined the extent to which school climate predicted teachers' sense of efficacy. Using a sample of 9,987 teachers from the National Educational Longitudinal Study (NELS), these researchers analyzed teachers' perceptions of how much teachers coordinated content with other teachers (faculty communication) and how much cooperative effort existed among staff members (faculty collegiality). Regression analyses showed that faculty communication was the strongest predictor of teachers' efficacy, followed by faculty collegiality.

However, other researchers have found the amount of time teachers spend with one another to discuss issues related to lesson planning, curriculum development, and evaluation of programs was not significantly related to teachers' level of efficacy (Lee et al., 1991; Newmann et al., 1989). Moreover, the extent to which teachers help each other solve instructional or classroom management problems was also unrelated to efficacy (Newmann et al., 1989).

Inconsistencies might, once again, be due to conceptualization and measurement issues. For example, whereas Taylor and Tashakkori (1995) defined efficacy as "the extent to which an individual feels capable of influencing outcomes in the desired direction" (p. 220), their measurement of the teacher efficacy construct did not reflect this definition. Specifically, their teacher efficacy scale consisted of such items as, "Different methods can affect student achievement," "I can get through to most difficult students," "I am responsible for keeping students from dropping," "I can change my approach if students are not doing well," "I can do little to insure high achievement," and "Teachers make a difference in students' lives." Some of these individual items reflect a more valid assessment of the teacher efficacy construct, however, as a scale, this assessment lacks face validity. Taylor and Tashakkori's (1995) imprecise operationalization, coupled with conceptualization and measurement issues in the Newmann et al. (1989) and Lee et al., (1991) studies, might be the primary reason behind inconsistent results reported in the literature.

Some of the most consistent findings when examining the relationship between school environment and teacher efficacy have come from those studies investigating sense of community within schools (e.g., Lee et al., 1991, "This school seems like a big family," "I feel accepted and respected as a colleague by most of my staff members," "You can count on most staff members to help out anytime, anywhere"), staff cooperation (e.g., Raudenbush et al., 1992, the extent to which teachers help each other with various tasks, share beliefs and values about the school's mission, and maintain high teaching standards), and morale (e.g., Hoy & Woolfolk, 1993, a collective sense of friendliness and openness among faculty members). Higher levels of faculty morale

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predicted higher levels of teacher efficacy, with faculty morale as the best predictor of teacher efficacy in some studies (e.g., Hoy & Woolfolk, 1993; Lee et al., 1991).

School-Based Professional Community. In examining teachers' collegial relations, Louis and her colleagues (1995) developed a framework for thinking about the social organization in which teachers work. Their concept of professional community is based on the assumption that teachers' social connections outside of the classroom can be critical in helping them to be more effective inside the classroom (Louis et al., 1995). School-based professional communities share four core characteristics. First, these schools share a core set of values and beliefs centered around quality teaching and learning for the school as a whole. Second, teachers within these schools have ample opportunity to engage in reflective dialogue concerning academic content, teaching strategies, student development and learning, and school conditions. Third, teachers within professional communities open their classrooms to other teachers for observation and to share the roles of mentor and advisor. Finally, collaboration is a central attribute within schools organized as professional communities. Teachers within these schools collaborate on a wide variety of projects.

Researchers contend that teachers enter the profession for the intrinsic satisfaction, yet find themselves confronting larger work-related issues such as scarce resources, isolation, time constraints, and a limited knowledge base. These difficulties can create uncertainty in teachers and undermine teachers' intrinsic interest in their profession (Grimmett & Crehan, 1992; Kruse, Louis, & Bryk, 1995; Louis et al., 1995). Louis and her colleagues (1995) argue that schools organized as professional communities will help minimize the effects of uncertainty, isolation, and lack of

interest, thereby improving the quality of the school organization and their effectiveness for teaching and learning. Empirical studies investigating school-based professional community have shown this to be true (e.g., Bryk, Camburn, & Louis, 1999; Louis & Marks, 1998; Louis, Marks, & Kruse, 1996).

One major purpose of the proposed study was to investigate the relationship between teacher efficacy and teachers' perceptions of the core features of a professional community (i.e., reflective dialogue, deprivatized practice, collaboration, shared norms and values). Current professional community research has focused on school-wide communities, however, given the importance of departments at the high school level, it is logical to assume that smaller professional communities might exist within schools, at the departmental level. With this in mind, the current study explored the link between teachers' self-efficacy and perceptions of these smaller, more proximal, communities within schools.

Sources of Self-Efficacy Information

When evaluating their ability to carry out a given task, individuals attend to various sources of information: performance accomplishments, vicarious experiences, verbal persuasion, and physiological states (Bandura 1977, 1997). Teachers, therefore, will look to these information sources to assess their ability to positively impact student performance. Research pertaining to the relationship between sources of information and self-efficacy beliefs of teachers and other individuals will be discussed in this section.

Performance Accomplishments. For activities such as teaching, no absolute measure of ability exists. One way teachers can obtain feedback on their skills is to

look to their specific performance accomplishments. Research findings illustrate that teaching accomplishments (as measured by student ability) are related to teachers' efficacy beliefs. For instance, teachers who have students with higher levels of ability report higher efficacy beliefs than teachers with lower ability students (e.g., Ashton et al., 1983; Raudenbush et al., 1992). This positive relationship between student ability and teacher efficacy is most prominent when assessing groups of students rather than individual students, with the performance of a group of students having more of an impact on teacher efficacy than an individual student's performance (Guskey, 1987).

Another way teachers might measure their teaching ability is through others' ratings of their teaching competence. For example, Landrum and Kauffman (1992) found that teachers perceived by their peers as more effective with behavioral and/or academic-problem students, reported higher levels of efficacy. Similarly, teacher efficacy and superintendents' ratings of teachers' competency have been positively related (Trentham, Silvern, & Brogdon, 1985).

Vicarious Experience & Verbal Persuasion. Only one study has explored the relationship between vicarious experience, verbal persuasion, and teachers' beliefs about their ability to affect student performance. Hagan, Gutkin, Wilson, and Oates (1998) designed an experiment to test whether teachers' efficacy beliefs could be influenced by these two sources of information. Their sample of preservice teachers were assigned to one of two groups: (a) the experimental group watched a video in which behavior management techniques were demonstrated successfully by regular education teachers (vicarious experience), regular education teachers spent time discussing their successes with behavior management techniques for difficult-to-teach

children (vicarious experience), and research findings on the usefulness of behavior

management techniques in regular education classrooms was presented (verbal

persuasion), and (b) the control group watched a video on the mistreatment and

stereotyping of children and adults with disabilities.

Findings from this study showed that preservice teachers in the experimental

group reported higher levels of efficacy following the experimental conditions than

preservice teachers in the control group (Hagan et al., 1998). Whereas this study

attempted to document causal links between vicarious experience, verbal persuasion,

and teacher efficacy, firm conclusions cannot be drawn. For example, researchers

failed to measure preservice teachers' level of efficacy prior to the experiment, thereby

lacking the information needed to assess change in teachers' beliefs about their abilities

following their exposure to the experimental or control conditions. In addition, Hagan

and colleagues made the assumption that these teachers learned vicariously and were

persuaded verbally by the elements in the experimental group video. They did not,

however, actually measure these information sources.

Additional Factors Contributing to Teachers' Self-Efficacy

Thus far this review has highlighted studies conducted on the relationships

between teachers' efficacy beliefs and teacher behavior, school organizational variables,

and sources of efficacy information. There are, however, additional factors that have

been shown to be related to teachers' beliefs in their abilities. In this section, research

examining the relationship between teacher efficacy and school level, level of

experience, beliefs about student ability, and gender will be discussed.

School Level

      Whereas the internal structural features of a school organization are valuable to the discussion of teacher efficacy, school level is also important. Elementary teachers have consistently reported higher levels of efficacy beliefs than their middle school and high school counterparts (e.g., Evans & Tribble, 1986; Midgley, Anderman, & Hicks, 1995; Midgley, Feldlaufer, & Eccles, 1988; Parkay, Greenwood, Olejnik, & Proller, 1988; Taylor, 1992). Preservice elementary teachers also show more positive beliefs in their teaching ability than preservice secondary teachers (Evans & Tribble, 1986).

      There are several possible reasons for these discrepancies. First, organizational differences in elementary and secondary schools might account for differences in efficacy beliefs. The amount of time teachers spend with groups of students is drastically different between school levels. When teachers spend entire days with the same students as they do at the elementary level, they might be more likely to chart student progress over time, acquire knowledge of their students needs, and increase the opportunity to evaluate performance accomplishment information that can influence their efficacy beliefs (Ross, 1998). This valuable time spent with the same students might help teachers to attribute student knowledge to their ability to teach.

      A second possible explanation is that elementary teachers might believe that student ability is more malleable at earlier levels, thereby giving teachers more confidence in their ability to affect student performance. As students enter higher grade levels, teachers might believe that student ability becomes less modifiable, which might then affect their beliefs about their ability to affect change in students' performance. Teachers at secondary levels might also recognize that students at higher grade levels

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are more independent and possibly less responsive to teacher influence (Taylor, 1992).

Other explanations for school level differences in teachers' efficacy include (a)

secondary teachers might be influenced by the cultural belief that adolescence is a

difficult stage of the lifespan (Midgley et al., 1988), and (b) school level efficacy

differences might be confounded by gender (Ross, 1998), since females generally have

higher levels of efficacy than males (e.g., Evans & Tribble, 1986), and there are a larger

proportion of female teachers at the elementary level than at the secondary level.

Finally, these differences could reflect variation in features of professional community.

For instance, Louis, Marks, and Kruse (1996) documented that elementary schools

showed a stronger sense of professional community than secondary schools, particularly

high schools. Given the potential discrepancy of efficacy beliefs at various school

levels, the current study focused exclusively on the efficacy beliefs and perceptions of

professional community of teachers at the high school level.

Teachers' Level of Experience

        Individuals' efficacy beliefs are constantly being reevaluated based on

assessments of current skill sets and information received from the environment.

Therefore, as skill sets change and information on performance is gathered, efficacy

beliefs are also likely to change. In the case of teachers, efficacy beliefs are likely to

vary as a function of experience level. For instance, it is reasonable to assume that

when teachers enter the profession, they do so with the belief that they have the

competence to succeed. As they move through the various stages of teaching (e.g.,

preservice teacher, student teacher, novice teacher, experienced teacher), these beliefs

are likely to be altered.

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Researchers have documented changes in the efficacy beliefs of teachers at various stages in their professional careers. Much work has shown that efficacy beliefs are highest in preservice teachers, and that these teachers' sense of efficacy drops, often drastically, during the first year of teaching (Brousseau, Book, & Byers, 1988; Soodak & Podell, 1997). For example, in their cross-sectional sample of elementary and secondary preservice and practicing teachers, Soodak and Podell (1997) found that elementary teachers' personal efficacy beliefs showed a considerable decline from preservice experiences to the first year of teaching. These researchers also found a consistent increase in elementary teachers' efficacy beliefs with experience, yet this increase never reached preservice levels. Moreover, Soodak and Podell (1997) found no evidence of a fluctuation of efficacy beliefs in secondary teachers. In fact, these researchers reported that their sample of secondary teachers was significantly more homogeneous in their efficacy beliefs than the sample of elementary teachers.

Chester and Beaudin (1996) investigated the relationship between changes in self-efficacy beliefs and school organizational factors for newly hired teachers in urban schools, finding that the typically reported decline in efficacy beliefs over the first year of teaching is not universal. Specifically, they found this relationship to be mediated by certain school-level organizational factors—opportunities for collaboration with other teachers and administrators, supervisor attention to classroom performance, and availability of instructional resources. Thus, beginning teachers who were assigned to schools in which they perceived high degrees of collaboration and who were observed more by supervisors reported more positive changes in efficacy beliefs than those who did not experience those specific school practices.

These findings have certain implications for the current study. First, beginning teachers might utilize aspects of a professional community much differently than experienced teachers. For example, teachers new to the profession might look to collaboration and dialogues with other teachers as a way to discuss and receive feedback about specific experiences in their own teaching, whereas more experienced teachers might take on more of a mentoring role in these situations. Second, beginning teachers are possibly more likely than experienced teachers to use collaborative situations, reflective dialogues with other teachers, and peer observations as a way to learn more about their own teaching. On the other hand, experienced teachers might no longer gain valuable information from other teachers that would have a significant impact on their practice. Third, self-efficacy theory highlights that individuals' self-efficacy evaluations are highly sensitive to vicarious and verbally persuasive information when one is uncertain about one's own capabilities in a given domain (Bandura, 1997). Thus, beginning teachers are more likely to seek out and learn from teaching models than more experienced teachers who might be more confident in their teaching abilities. Given these possibilities, teachers' level of experience was controlled for when examining the relationship between efficacy beliefs and professional community.

Teachers Beliefs about Students' Ability

Researchers have established that students' level of ability (e.g., track level) is positively correlated with teachers' efficacy beliefs (e.g., Raudenbush et al., 1992). Furthermore, as teachers perceive accomplishments in their performance, such as increases in student performance over time, they are likely to feel confident in their

ability to affect student learning (e.g., Bandura, 1997). Teachers' beliefs about whether or not good teaching can affect student performance (outcome expectancy), is also related to teachers' efficacy beliefs (Bandura, 1997). It is logical to assume, therefore, that teachers' beliefs about whether or not student ability is malleable might also influence teachers' efficacy beliefs.

Dweck and Leggett (1988) discuss a "theory of intelligence," in which individuals either focus on the development or the adequacy of their ability. For instance, some people have an incremental theory of intelligence and believe that ability is controllable and can be changed. In contrast, others view intelligence as a fixed, uncontrollable trait and, therefore, possess an entity theory of intelligence. Research has shown an incremental theory of intelligence to be more conducive to positive motivational patterns (Dweck & Leggett, 1988). Given this research, it is suggested that a teacher's theory of intelligence might influence his or her belief in the personal ability to influence student performance. For instance, if a teacher believes that her students' ability is fixed, she might question her ability to impact student achievement. Similarly, a belief in the malleability of student ability could lead to more confidence in one's capacity to have an effect on students' performance. Thus, teachers' in this study were asked about their beliefs regarding student ability as fixed or malleable, and these beliefs were controlled for in the data analysis.

Gender

In the extant literature, females tend to report higher levels of efficacy than males (e.g., Anderson, Greene, & Loewen, 1988; Raudenbush et al., 1992). This could be because a higher number of females teach at the elementary level and, as was

reported earlier, elementary school teachers are more efficacious than secondary school teachers (e.g., Evans & Tribble, 1986; Midgley et al., 1995; Parkay et al., 1988). Given these findings, gender was controlled for in the current study's data analysis.

<u>The Current Study</u>

The current study contributes to and builds upon the existing literature in a number of ways. First, this study was heavily grounded in social cognitive theory, thereby providing a solid framework for proper conceptualization and measurement of the teacher efficacy and community constructs examined. Second, whereas a fairly consistent link has been established between teachers' sense of efficacy and sense of community at the school level, the current study argued for the powerful effects of a *proximal community* on teachers' beliefs in their abilities. It was believed that if teachers were able to feel as though they were a part of a small community *within* their school (e.g., at the department level) they would feel efficacious toward teaching. Finally, this study sought to identify the mechanisms involved in the link between teacher efficacy and perceptions of departmental community. Specifically, vicarious experience and verbal persuasion were examined as sources of information used to inform the efficacy beliefs of teachers.

Chapter 3

Methodology

This study investigated the relationship between teachers' sense of efficacy and their sense of a professional community within their departments. The mediating role of vicarious experience and verbal persuasion was also examined. These relationships were investigated using a correlational design. Specifically, the following research questions were explored:

1. How is teacher efficacy related to professional community, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

2. How does the relationship between teacher efficacy and professional community differ as a function of different measures designed to assess the teacher efficacy construct, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

3. To what extent does teacher efficacy relate to features of a professional community (i.e., reflective dialogue, deprivatized practice, collaboration, shared norms and values) by way of vicarious experience and verbal persuasion, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

Participants

A total of 229 teachers from nine high schools participated in the study. The high schools were located within a large, suburban, mid-Atlantic school district. The size of participating schools ranged from 701 to 2109 students, with 6 of the 9 schools

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centered around the mean of 1291 students. The number of students per teacher ranged from 14.3 to 17.5 ($\underline{M}$ = 16.3). On average, 77.6% of the students were White, 16.3% were African-American, and 14.7% received free and reduced meals. These averages fall within the norm for the school district as a whole. The schools shared a similar departmental organization, each with core subject departments (i.e., English, Math, Science, Social Studies), along with other standard school departments (e.g., Foreign Language, Special Education, Music). Teacher participation within the nine schools ranged from 16 to 44 percent.

Given the purpose of the study, only the data received from teachers belonging to departments of five or more teachers were examined. This reduced the number of participants to 198; 126 females and 72 males. Of the 198 participating teachers, 93% were White, 5% were African-American, 1% were Asian, and 1% were Hispanic; a breakdown similar to that of the overall school district. Teachers belonged to one of the following departments: English (n = 47), Math (n = 25), Science (n = 27), Social Studies (n = 32), Special Education (n = 23), Foreign Language (n = 18), and Other (n = 26; e.g., Music, Business Education, Technology Education, Career Education). The majority of the teachers (n = 155) taught some combination of high school grades, while the remaining teachers taught only ninth (n = 18), tenth (n = 11), eleventh (n = 7) or twelfth (n = 7) grade. Teaching experience ranged from 1 to 45 years ($\underline{M}$ = 14.51). Study results are based on a smaller subset of the 198 teachers, as analyses were run on participants with complete data sets for the variables of interest.

Procedure

Following approval of the research at the district level, principals of schools

were contacted. These principals received an email and written proposal in which the general purpose of the study was explained. Once principals reviewed the proposal, they were contacted via phone to answer any questions they might have and, if they were interested, set up a time frame for data collection. Eight of the nine schools scheduled a two-day data collection time frame, during which the researcher brought refreshments, sat in the faculty lounge for the entire school day, and allowed teachers to come in on their breaks to fill out the questionnaire. Prior to data collection teachers were notified by the principal and the researcher about the study. Participation was voluntary, and only those teachers interested in being involved completed a questionnaire. The ninth school involved in the research requested that questionnaires be dropped off and distributed in teachers' mailboxes to be returned to a central location in the main office.   At the time of data collection, principals were asked to complete a demographic questionnaire pertaining to their school. Written informed consent was obtained for all participants (Appendix A).

Variables & Measures

This section describes each of the measures used in the current study. Scale reliabilities for each measure, as well as means and standard deviations for each variable are listed in Table 1.

Teacher Efficacy: Teachers' efficacy beliefs were measured using the 24-item Teacher Sense of Efficacy Scale (TSES—Tschannen-Moran & Woolfolk Hoy, 2001, see Appendix B). This measure was chosen for three key reasons. First, the measure's design follows the theoretical framework and conceptualizations of the teacher efficacy construct used in this study. Second, this measure assesses only teachers' efficacy

beliefs, as Bandura (1986) believed that an individual's outcome expectancy added little to the explanation of motivation and behavior. And finally, this measure addresses the multifaceted nature of the teacher efficacy construct by assessing teachers' efficacy beliefs in three areas: *efficacy for student engagement, efficacy for instructional strategies,* and *efficacy for classroom management* (Tschannen-Moran & Woolfolk Hoy, 2001).

The TSES uses a nine-point Likert-type scale with anchors at one (nothing), three (very little), five (some influence), seven (quite a bit), and nine (a great deal). Sample items include, "How much can you do to get through to the most difficult students?" and "How much can you do to adjust your lessons to the proper level for individual students?" Subscale scores for each area of efficacy are created by computing an unweighted average of the responses to each of the items associated with that subscale.

Teachers in the current sample also completed the personal efficacy items of Gibson and Dembo's (1984) Teacher Efficacy Scale (TES—see Appendix C) and the four teacher efficacy items (see Appendix D) used in studies conducted by Newmann, Rutter, and Smith (1989) and Lee, Dedrick, and Smith (1991). The nine-item personal efficacy subscale of the TES uses a six-point Likert-type scale ranging from one (strongly disagree) to six (strongly agree). Sample items include, "When a student does better than usual, many times it is because I exerted a little extra effort," and "When the grades of my students improve it is usually because I found more effective teaching approaches."

Two of the four items used in the Newmann et al. (1989) and Lee et al., (1991)

studies are measured on a six-point Likert-type scale ranging from one (strongly

disagree) to six (strongly agree). Of the remaining two items from this scale, one is

measured on a four-point Likert-type scale ranging from one (almost never) to four (all

of the time), and the other is also measured on a four-point Likert-type scale ranging

from one (not successful) to four (very successful). Many inconsistencies exist in

research findings related to teacher efficacy, and because these inconsistent results

might be due, in part, to the measurement of teacher efficacy, responses to items on

these previously used scales were analyzed in comparison to items on the TSES in order

to determine whether the relationship between teacher efficacy and professional

community differs as a function of the measurement scale used.

   Professional Community: Teachers were asked to respond to items on the

Professional Community Index (PCI—see Appendix E) to assess perceptions of a

professional community within their department. This index represents the sum of four

components that make up a professional community: reflective dialogue, deprivatized

practice, collaboration, and shared norms and values. Previous research has shown

these components to load on a single factor, suggesting that these components of

professional community measure a single organizational construct (Bryk, Camburn, &

Louis, 1999). While different versions of the professional community index have been

used in empirical research (e.g., Bryk et al., 1999; Louis & Marks, 1998; Louis, Marks,

& Kruse, 1996), no reliability and validity information has previously been reported.

   Reflective Dialogue: Eight items make up the reflective dialogue subscale.

Items ask teachers to report on the dialogue that takes place with their colleagues in an

attempt to assess how much conversation focuses on issues of instruction and student

learning. Sample items include, "How often since the beginning of the current school year did you meet with colleagues to discuss specific teaching behaviors," and "In a typical planning period when you meet with other teachers, about how much time is spent on diagnosing individual students?" A high score on this scale indicates that conversations are occurring among teachers that include meaningful topics such as student learning and instructional improvement.

Deprivatized Practice: This four-item subscale measures the frequency with which teachers observe each other's classrooms and provide meaningful feedback to one another. Sample items include, "Except for monitoring student teachers or substitute teachers, how often have you visited another teacher's classroom to observe and discuss their teaching since the beginning of the current school year," and "Since the beginning of the current school year, how often has another teacher come to your classroom to observe your teaching (excluding visits by student teachers or formal evaluations)?" A high score on this scale indicates that teachers are opening up their classrooms to one another in order to exchange meaningful feedback regarding instruction.

Collaboration: The eight items that make up the collaboration subscale measure how often teachers collaborate on such activities as curriculum development, lesson planning, and other collaborative activities. Sample items include, "I make a conscious effort to coordinate the content of my courses with other teachers," and "Since the beginning of the current school year, about how much time per month have you spent meeting with other teachers on lesson planning, curriculum development, guidance and counseling, evaluation of programs, or other collaborative work related to instruction?"

A high score on this scale indicates that teachers engage in collaborative work with one another.

Shared Norms & Values: This three-item scale characterizes the extent to which there is a consensus among teachers in a particular school regarding the school's central mission and student learning. Sample items include "Most of my colleagues share my beliefs and values about what the central mission of the school should be," and "In this school the teachers and administration are in close agreement on school discipline policy items." A high score on this scale indicates that teachers share norms and values about the school mission and student learning.

Sources of Efficacy Information: The Sources of Efficacy Information Scale (SEIS—see Appendix F) was created by the researcher to assess the degree to which teachers believe they can learn about teaching through observation and whether teachers feel more confident in their teaching abilities as a result of talking to colleagues about teaching (see following section describing instrument development). Teachers responded to items that correspond to one of three subscales: vicarious experience, verbal persuasion, and proficient model.

Vicarious Experience: The extent to which teachers learn about their teaching by observing other teachers was assessed using a nine-item scale (items 17-25). Each item is measured on a 6-point Likert-type scale ranging from "strongly disagree" to "strongly agree." Sample items include, "Watching colleagues from my department teach helps me (has helped me) to become a more capable teacher," and "I am able to evaluate my own teaching ability by observing other teachers from my department."

Verbal Persuasion: The variable of verbal persuasion was measured with ten

scale items designed to assess whether talking to colleagues about their teaching helps teachers to feel more confident about their abilities (items 26-35). Each item is measured on a 6-point Likert-type scale ranging from "strongly disagree" to "strongly agree." Sample items include, "Other teachers from my department tell me that I am a good teacher," and "When I am feeling down about my teaching, teachers from my department help me to feel better about my abilities."

Proficient Model: Bandura (1997) suggested that vicarious experience and verbal persuasion are more likely to inform an individual's efficacy beliefs when they see their model as similar to themselves, capable, and knowledgeable. Therefore, additional items were created to assess teachers' perceptions of their colleagues as proficient models. This was done for exploratory purposes, as this variable was not a part of the formal model. These 12 items (items 1-12) are also measured on a 6-point Likert-type scale from "strongly disagree" to "strongly agree." Sample items include, "I believe teachers in my department are knowledgeable about how to engage students," and "I believe teachers in my department and I are very similar in our ability to manage our classrooms."

Additional Variables: Information was gathered from teachers regarding their experience level, gender, beliefs about student ability, and perceptions of current student performance. Additional information was also collected from principals regarding school size, department size, average class size, percentage of faculty turnover, and the overall racial composition of the school.

Teachers' experience level and gender. A demographic questionnaire at the beginning of the survey (see Appendix G) asked teachers to report their gender and how

many years they had been teaching. Additional information regarding what grade level the teacher supervised, the name of the school he/she worked in, and the teacher's race was collected.

Beliefs about student ability and perceptions of student performance. Because students' ability level is one student characteristic that has been linked to teachers' efficacy beliefs, teachers were asked to fill out a questionnaire related to this topic (see Appendix H). The first series of questions (items 1-6) were designed to assess whether teachers possessed a fixed or incremental view of student ability (Dweck & Henderson, 1989). Sample items include, "Children have a certain amount of intelligence and you really can't do much to change it," and "If students are having trouble with the subject, they will probably continue to have trouble with it in the future." The final questions (items 1-5) asked teachers to rate the actual performance of their current students (e.g., following classroom rules, overall level of achievement).

Principals' questionnaire. Principals were asked to respond to demographic questions regarding the schools' size, average class size, the percentage of faculty turnover, the overall racial composition of the school, and the number of teachers in each department (see Appendix I).

Pilot Study

A pilot study was conducted to validate the professional community measure and to develop the scale to assess vicarious experience and verbal persuasion mechanisms with teachers. Three separate focus groups consisting of inservice elementary school (N=2), middle school (N=18), and high school (N=14) teachers were formed. The researcher met with these teachers during sessions in which they

completed the professional community and sources of efficacy information scales, explaining which items they felt were unclear and why. During two of the three focus group sessions, the researcher informed the teachers of the main focus of the study, and a lengthy discussion ensued regarding these teachers' thoughts on who they turned to for support, who they deem as their "community" within their school, and how they thought about their sense of efficacy—both in terms of their first year on the job and currently. Information from these sessions was used to validate the framework for the study and to modify any professional community or sources of efficacy items that might have been unclear. The questionnaire items shown in the appendices reflect the final format.

Table 1

Reliability Coefficients and Descriptive Statistics for Study Variables

Variables/Measures	Reliability (a)	M	SD	Possible Range	Actual Range
TSES	.93	7.02	.85	1 – 9	4.58 – 9
Efficacy for Classroom Management	.91	7.26	1.09	1 – 9	3.25 – 9
Efficacy for Instructional Practices	.87	7.64	.90	1 – 9	4.25 – 9
Efficacy for Student Engagement	.87	6.12	1.06	1 – 9	3.13 – 9
TES (Gibson & Dembo)	.83	4.61	.58	1 – 6	2.44 – 5.89
Efficacy (Newmann et al.)	.73	3.84	.81	1 – 6, 1 – 4	6 – 20
PCI	.89	3.71	.87		
Reflective Dialogue	.90	3.66	1.31	1 – 6	1 – 6
Shared Norms & Values	.76	4.44	1.08	1 – 6	1 – 6
Collaboration	.73	4.36	.98	1 – 6	1 – 6
Deprivatized Practice	.64	2.45	.97	1 – 6, 1 – 3	4 – 21
SEIS	--	--	--		
Vicarious Experience	.96	3.98	1.42	1 – 6	1 – 6
Verbal Persuasion	.91	4.24	.99	1 – 6	1 – 6
Proficient Model	.95	4.61	.95	1 – 6	1 – 6
Additional Variables/Measures					
Teachers' View of Ability	.83	3.29	.91	1 – 6	1.17 – 5.50
Perceptions of Student Performance	.94	2.62	.78	1 – 4	1 – 4

Chapter 4

Results

Based on a correlational design, this study examined the relationship between teachers' sense of efficacy and their perceptions of a professional community within their academic departments. Furthermore, the mediating role of vicarious experience and verbal persuasion upon this relationship was also assessed. This chapter will present the results of this investigation in three parts. First, results from factor analyses of scale items assessing teacher efficacy, sources of efficacy, and professional community will be presented. Next, descriptive statistics highlighting correlations and mean differences of key variables will be discussed. Finally, the results of hierarchical regression analyses used to answer the three research questions will be presented. The three questions explored in this study are as follows:

1. How is teacher efficacy related to professional community, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

2. How does the relationship between teacher efficacy and professional community differ as a function of different measures designed to assess the teacher efficacy construct, when controlling for gender, department size, school size, teachers' experience level, beliefs about ability, and students' performance?

3. To what extent does teacher efficacy relate to features of a professional community (i.e., reflective dialogue, deprivatized practice, collaboration, shared norms and values) by way of vicarious experience and verbal persuasion, when controlling for gender, department size, school size, teachers' experience level,

beliefs about ability, and students' performance?

<u>Factor Analyses of Scale Items</u>

Factor analysis was employed to assess items on the Teacher Sense of Efficacy

Scale (TSES), Sources of Efficacy Information Scale (SEIS), and Professional

Community Index (PCI). The TSES was designed to measure teachers' self-efficacy in

three areas: classroom management, instructional practices, and student engagement.

Similarly, the SEIS was developed to assess the extent to which teachers' experience

vicarious learning and verbal persuasion (Bandura, 1977), as well as their views of their

colleagues as proficient models of teaching. The PCI was created to measure various

features of a professional community: reflective dialogue, shared norms and values,

collaboration, and deprivatized practice. Principal components analysis was performed

on each scale to determine whether subscale items created were separate and distinct

factors. The entire data set of 229 teachers was used in the factor analyses.

<u>Teacher Sense of Efficacy Scale.</u> TSES items were assessed using a principal

components analysis with oblique rotation. Oblique rotation was chosen to allow the

teacher efficacy factors to be correlated. Because researchers using the TSES have

consistently found three distinct factors, a forced three-factor solution was chosen.

Table 2 presents the eigenvalues for each of the three factors, showing that they account

for 57.6% of the total variance. Factor loadings for these factors are shown in Table 3.

Items with factor loadings of .4 or greater were considered high, loadings between .3

and .4 were considered moderate, and loadings of .2 and below were considered weak

(Tabachnick & Fidell, 1996). Items on the TSES show high loadings on the three

factors in a pattern consistent with the three efficacy dimensions found in other studies

(Tschannen-Moran & Woolfolk Hoy, 2001). Specifically, classroom management items load high on factor 1, instructional practices items yield high loadings on factor 2, and factor 3 contains high loadings for student engagement items.

Based on these findings, scores for each dimension of efficacy (i.e., classroom management, instructional practices, and student engagement) were created by computing an average of the responses to each item corresponding to that factor. These scores were then used in subsequent data analyses.

Table 2

Principal Components Analysis of Teacher Efficacy Items: Eigenvalues

Component	Eigenvalue	Cumulative % of Variance
1	9.68	40.34
2	2.28	49.81
3	1.88	57.63

Table 3

Principal Components Analysis of Teacher Efficacy Items: Factor Loadings

	Component 1 Factor Loadings	Component 2 Factor Loadings	Component 3 Factor Loadings
Classroom Management			
Item 2	.730	.001	-.065
Item 3	.811	.017	-.094
Item 4	.763	-.062	.126
Item 6	.789	-.072	.138
Item 12	.681	.097	-.001
Item 13	.819	.121	-.020
Item 15	.683	.118	.083
Item 18	.520	.080	.300
Instructional Practices			
Item 14	.248	.476	.048
Item 16	.012	.575	.135
Item 19	-.132	.537	.354
Item 20	.038	.814	-.057
Item 21	.142	.807	-.164
Item 22	-.081	.822	-.005
Item 23	.050	.793	-.026
Item 24	-.021	.725	.093
Student Engagement			
Item 1	.366	-.098	.538
Item 5	.160	.132	.608
Item 7	.080	-.054	.770
Item 8	-.054	.049	.755
Item 9	-.113	-.011	.802
Item 10	.066	.049	.775
Item 11	.235	.083	.417
Item 17	.125	.233	.488

Sources of Efficacy Information Scale. Principal components analysis with

oblique rotation was employed on SEIS items. Oblique rotation was chosen to allow

the factors to be correlated. A forced three-factor solution was chosen, as this measure

was designed to assess three constructs associated with sources of efficacy information.

As is shown in Table 4, the eigenvalues for each of the three factors account for 66.6%

of the total variance. Table 5 presents factor loadings for each factor. Items with factor

loadings of .4 or greater were considered high, loadings between .3 and .4 were considered moderate, and loadings of .2 and below were considered weak (Tabachnick & Fidell, 1996). Items designed to assess each construct show high loadings on separate factors—proficient model items load on factor 1, vicarious experience items load on factor 2, and verbal persuasion items load on factor 3.

Based on the results from the factor analysis of SEIS items, scores for three subscales were created by computing an average of the responses to each item corresponding to that factor (i.e., vicarious experience, verbal persuasion, and proficient model). Scores on each subscale were then used in subsequent data analyses.

Table 4

Principal Components Analysis of Sources of Efficacy Information Items: Eigenvalues

Component	Eigenvalue	Cumulative % of Variance
1	11.77	37.97
2	4.57	52.72
3	4.30	66.57

Table 5

Principal Components Analysis of Sources of Efficacy Items: Factor Loadings

	Component 1 Factor Loadings	Component 2 Factor Loadings	Component 3 Factor Loadings
Proficient Model			
Item 1	.859	-.024	-.012
Item 2	.869	-.028	-.031
Item 3	.881	-.076	-.035
Item 4	.632	.189	.009
Item 5	.568	.262	.011
Item 6	.629	.144	.110
Item 7	.899	-.047	.011
Item 8	.884	-.041	.022
Item 9	.876	-.035	-.056
Item 10	.786	.034	.016
Item 11	.824	-.008	.054
Item 12	.822	.001	.007
Vicarious Experience			
Item 17	.062	.724	.120
Item 18	.073	.842	.065
Item 19	.043	.869	.053
Item 20	-.062	.863	.039
Item 21	-.098	.803	-.054
Item 22	-.017	.908	-.015
Item 23	.061	.901	-.035
Item 24	.096	.901	-.051
Item 25	.088	.884	-.016
Verbal Persuasion			
Item 26	.042	.019	.603
Item 27	.211	.078	.511
Item 28	.106	-.111	.786
Item 29	.013	-.136	.792
Item 30	.033	-.113	.789
Item 31	.021	-.096	.815
Item 32	-.084	.144	.764
Item 33	-.067	.093	.766
Item 34	-.107	.129	.767
Item 35	-.056	.119	.758

Professional Community Index. Prior to conducting a factor analysis of the PCI, a critical adjustment was made to the measure. As part of the PCI, participants were asked to respond to the following question (Item 20): "Do you meet regularly with other teachers in your department?" If teachers answered "yes," they completed the remaining five questions of the PCI. If they answered "no," they were instructed to skip the five remaining items. As a result, not all participants were required to answer the following five questions:

How long is a typical meeting? (Item 21)

How often do you meet? (Item 22)

In a typical meeting, how much time is spent on:

Coordinating content? (Item 23)

Diagnosing individual students? (Item 24)

Analyzing teaching? (Item 25)

Of the 229 participating teachers, 24% of the teachers (n = 55) reported that they did not meet regularly with other teachers; thus, questions 21-25 were not applicable. Because of the high percentage of teachers that were not required to answer items 21-25, and because items 20-22 are merely descriptive questions not to be included in the professional community subscales, a decision was made to drop items 20-25 from the PCI.

The 19 remaining items that make up the PCI were assessed using a principal components analysis with oblique rotation. Oblique rotation was chosen to allow the professional community factors to be correlated. The PCI is designed to measure four dimensions of professional community; therefore, a forced four-factor solution was

chosen. Eigenvalues and factor loadings are listed in Table 6 and Table 7, respectively. As is shown, the four factors accounted for 61.3% of the total variance, and most of the items from each subscale loaded on separate factors—reflective dialogue on factor 1, shared norms and values on factor 2, collaboration on factor 3, and deprivatized practice on factor 4. However, three collaboration items loaded with items from other subscales (Item 18 with reflective dialogue and Items 4 and 5 with shared norms/values). In addition, one deprivatized practice item (Item 10) loaded with the remaining collaboration items.

Despite this slight deviation in the factor structure, subscales were created based on previous professional community literature, which is consistent with the majority of the factor loadings. Items corresponding to each subscale are presented in Table 7. Scores for the four subscales were created by computing an average of the responses to each item corresponding to each professional community feature. Scores on each subscale were then used in subsequent data analyses.

Table 6

Principal Components Analysis of Professional Community Items: Eigenvalues

Component	Eigenvalue	Cumulative % of Variance
1	6.69	35.20
2	2.29	47.25
3	1.40	54.59
4	1.27	61.25

Table 7

Principal Components Analysis of Professional Community Items: Factor Loadings

	Component 1 Factor Loadings	Component 2 Factor Loadings	Component 3 Factor Loadings	Component 4 Factor Loadings
Shared Norms/Values				
Item 1	.083	.808	-.061	-.078
Item 2	.169	.810	.004	-.099
Item 3	-.076	.767	.041	-.108
Collaboration				
Item 4	-.066	.788	-.044	.146
Item 5	-.028	.528	.132	.252
Item 6	-.057	.022	.937	-.071
Item 7	.087	.012	.898	-.083
Item 18	.316	.130	.260	.204
Deprivatized Practice				
Item 8	.087	.082	-.035	.706
Item 9	-.121	-.012	.040	.845
Item 10	.101	-.038	.365	.277
Item 19	.149	-.057	-.071	.635
Reflective Dialogue				
Item 11	.436	.147	.181	.232
Item 12	.535	.102	.073	.141
Item 13	.570	-.057	.194	.107
Item 14	.877	.021	-.078	-.043
Item 15	.907	.001	-.019	-.030
Item 16	.906	.022	-.087	-.007
Item 17	.850	-.048	.097	-.039

Descriptive Statistics

Results from descriptive analyses are presented in this section. Specifically, correlations between variables will be discussed, followed by a presentation of mean differences on selected variables of interest. A listwise deletion procedure was used for all analyses to manage missing data. Of the 229 participating teachers' responses, there were 160 complete cases. However, in order to maximize power, analyses were conducted on cases with slightly different Ns.

Correlational analyses. Correlations were computed to examine the relationship between variables. Results of this analysis are presented in Table 8. As is shown, teacher efficacy was significantly and positively related to teachers' perceptions of a departmental professional community, as well as their perception of the four professional community features (reflective dialogue, shared norms and values, collaboration, and deprivatized practice) within their department. Teachers' self-efficacy was also significantly and positively correlated with verbal persuasion, teachers' view of colleagues as proficient teaching models, their perceptions of student performance, and their years of teaching experience. Teachers' view of student ability was significantly related to self-efficacy, such that high incremental beliefs were related positively to high self-efficacy.

When examining specific dimensions of teacher efficacy, analyses showed that teachers' efficacy beliefs for classroom management, instructional practices, and student engagement were significantly and positively correlated with professional community, professional community features, and teachers' perceptions of student performance. Moreover, these efficacy beliefs were significantly and negatively correlated with teachers' view of student ability. In addition, both efficacy for instructional practices and efficacy for student engagement were significantly and positively related to verbal persuasion and view of colleagues as proficient teaching models. Efficacy for classroom management and efficacy for instructional practices were significantly and positively related to years of teaching experience.

Teachers' who reported they perceived a professional community within their department, also reported that their colleagues were proficient teaching models, that

they had learned about teaching through observing their colleagues (vicarious experience), and that they felt more confident about teaching as a result of talking with their colleagues (verbal persuasion). This relationship was also true for teachers' perceptions of features of a professional community, as each of these features was also significantly and positively related to the two sources of efficacy information and views of colleagues as proficient models. In addition, teachers' perceptions of a professional community and its features were significantly and negatively related to the size of the academic department.

In sum, all correlation coefficients were in the expected direction. Furthermore, given the model being tested, variables that were expected to relate to each other showed significant correlations. Finally, teacher efficacy as measured by scales used in previous teacher efficacy studies (i.e., Gibson & Dembo, 1984; Lee et al., 1991; Newmann et al., 1989) was also included in this correlation analysis. These results will be discussed at length in another section of this chapter.

Table 8: Intercorrelations among Variables

	1	2	3	4	5	6
Self-Efficacy						
1. Teacher Efficacy	--					
2. Efficacy for Classroom Management	.86***	--				
3. Efficacy for Instructional Practices	.80***	.52***	--			
4. Efficacy for Student Engagement	.88***	.64***	.58***	--		
5. Personal Efficacy (Gibson & Dembo)	.56***	.41***	.62***	.45***	--	
6. Efficacy (Newmann et al.)	.37***	.32***	.34***	.36***	.34***	--
Perceptions of Departmental Organization						
7. Professional Community	.30***	.27***	.26***	.24***	.27***	.19**
8. Reflective Dialogue	.19**	.17*	.15*	.16*	.17*	.04
9. Shared Norms & Values	.35***	.29***	.39***	.26***	.37***	.43***
10. Collaboration	.20**	.22**	.15*	.18**	.20**	.18**
11. Deprivatized Practice	.23**	.20**	.20**	.21**	.15*	.12
Sources of Efficacy Information						
12. Vicarious Experience	.11	.06	.13	.11	.13	.18**
13. Verbal Persuasion	.22**	.12	.22**	.24***	.19**	.22**
14. Proficient Model	.18*	.11	.22**	.16*	.17*	.32***
Additional Variables						
15. Teachers' View of Ability	-.24***	-.17*	-.18**	-.25***	-.21**	-.33***
16. Student Performance	.41***	.41***	.38***	.30***	.31***	.43***
17. Years of Teaching Experience	.15*	.14*	.22**	.07	.29***	.29***
18. School Size	-.06	-.05	-.09	-.05	-.08	.05
19. Department Size	-.06	.05	-.14	-.09	-.14*	-.07

Table 8 (continued)

	7	8	9	10	11	12
Perceptions of Departmental Organization						
7. Professional Community	--					
8. Reflective Dialogue	.91***	--				
9. Shared Norms & Values	.54***	.29***	--			
10. Collaboration	.82***	.61***	.49***	--		
11. Deprivatized Practice	.68***	.54***	.14	.44***	--	
Sources of Efficacy Information						
12. Vicarious Experience	.42***	.34***	.22**	.33***	.48***	--
13. Verbal Persuasion	.48***	.38***	.29***	.44***	.23**	.29***
14. Proficient Model	.42***	.22**	.51***	.46***	.20**	.40***
Additional Variables						
15. Teachers' View of Ability	-.13	-.06	-.12	.03	-.18*	-.11
16. Student Performance	.09	-.01	.25***	.13	.02	.01
17. Years of Teaching Experience	.11	.08	.26***	.06	-.05	.04
18. School Size	-.12	-.09	-.06	-.08	-.13	-.02
19. Department Size	-.27***	-.22**	-.19**	-.18**	-.25***	-.19**

Table 8 (continued)

	13	14	15	16	17	18
Sources of Efficacy						
12. Vicarious Experience						
13. Verbal Persuasion	--					
14. Proficient Model	.34***	--				
Additional Key Variables						
15. Teachers' View of Ability	-.11	-.02	--			
16. Student Performance	.21**	.05	-.08	--		
17. Years of Teaching Experience	-.02	.12	.01	.21**	--	
18. School Size	-.03	.05	.25***	.05	.08	--
19. Department Size	-.07	-.03	.28***	.03	.05	.55***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

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Mean differences in teachers' efficacy and perceptions of professional community by gender, department, and school. Mean differences on teacher efficacy and professional community variables were assessed as a function of gender, department, and school. Results of these analyses are presented in this section.

Table 9 presents teachers' efficacy beliefs and perceptions of professional community by gender and department. As the table shows, teachers' efficacy beliefs did not significantly vary by gender or by department. Furthermore, teachers' perceptions of a professional community within their department also did not significantly vary by gender. Teachers' perceptions of professional community did, however, significantly vary by department. A post-hoc Scheffe test revealed that teachers belonging to Foreign Language departments reported perceiving more of a professional community than did teachers in English (p = .05), Math (p < .05), and Social Studies departments (p < .01).

Teachers' efficacy beliefs and perceptions of professional community by school are shown in Table 10. Efficacy beliefs significantly varied by school, however a post-hoc Scheffe test did not reveal which schools differed on this variable. Teachers' perceptions of professional community did not vary significantly by school.

Analysis of variance was also conducted on the specific dimensions of teacher efficacy. As is shown in Table 11, teachers' efficacy beliefs for classroom management, instructional practices, and student engagement did not vary by gender or by department.

Table 12 presents data on mean differences for the three efficacy dimensions by school. Teachers' efficacy for classroom management did not significantly vary by

school, whereas significant differences were found for efficacy for instructional practices and efficacy for student engagement. However a post-hoc Scheffe test did not reveal which schools differed on this variable.

In addition, analyses were performed on teachers' perceptions of the four professional community features. Perceptions of departmental reflective dialogue, shared norms and values, collaboration, and deprivatized practice by gender and by department are shown in Tables 13 and 14. As is shown in Table 13, teachers' perceptions of reflective dialogue did not significantly vary by gender. Perceptions of reflective dialogue did vary significantly by department. Teachers' perceptions of shared norms and values within their department significantly varied by gender, with female teachers reporting more shared norms and values within their department than male teachers. Perceptions of shared norms and values also varied significantly by department. Post-hoc Scheffe tests showed that teachers from Foreign Language departments reported higher amounts of departmental reflective dialogue than did teachers in English ($p < .05$), Math ($p < .01$), and Social Studies departments ($p < .01$). Furthermore, teachers in Foreign Language departments reported significantly more shared norms and values than teachers in Special Education departments ($p = .01$).

Table 14 presents the results of analysis of variance for teachers' perceptions of collaboration and deprivatized practice by gender and department. Perceptions of departmental collaboration did not vary significantly by gender, but did significantly vary by department. Once again, a post-hoc Scheffe test revealed that teachers from Foreign Language departments reported more departmental collaboration than Social Studies ($p < .05$) and Special Education teachers ($p < .05$). Teachers' perceptions of

deprivatized practice within their department did not vary significantly by gender or by department.

Teachers' perceptions of professional community features by school are shown in Tables 15 and 16. There was no significant variance by school for teachers' perceptions of departmental reflective dialogue, collaboration, or deprivatized practice. Perceptions of departmental shared norms and values did vary significantly by school. However a post-hoc Scheffe test did not reveal which schools differed on this variable.

A gender by department analysis of variance was conducted on teachers' perceptions of overall professional community, reflective dialogue, shared norms and values, and collaboration. However, results revealed no interaction between gender and department on these variables.

Table 9

Teachers' Efficacy Beliefs and Perceptions of Professional Community by Gender and Department: Results of Analysis of Variance

| | Teachers' Efficacy Beliefs | | | | Teachers' Perceptions of Professional Community | | | |
| | N = 184 | | | | N = 186 | | | |
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
Gender			.197 (1, 182)	.001			2.27 (1, 184)	.013
Male	6.98	.89			3.56	.81		
Female	7.03	.83			3.79	.90		
Department			.671 (6, 177)	.023			2.17* (6, 179)	.070
English	7.00	.83			3.64	.72		
Math	6.89	.83			3.52	.90		
Science	6.98	.77			3.73	.92		
Social Studies	7.18	.96			3.43	.83		
Special Education	7.15	.95			3.55	.96		
Foreign Language	6.96	.52			4.48	.55		
Other	6.93	1.01			3.94	.94		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 10

Teachers' Efficacy Beliefs and Perceptions of Professional Community by School: Results of Analysis of Variance

| | Teachers' Efficacy Beliefs | | | | Teachers' Perceptions of Professional Community | | | |
| | N = 184 | | | | N = 186 | | | |
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
School			2.46** (8, 175)	.101			1.40 (8, 177)	.060
School #1	7.05	.70			4.18	1.03		
School #2	7.27	.80			3.75	.88		
School #3	7.06	.83			3.79	.74		
School #4	6.62	.99			3.37	.62		
School #5	6.63	.74			3.61	.72		
School #6	6.49	.50			3.95	.94		
School #7	7.17	.99			3.55	1.15		
School #8	7.34	.65			3.66	.87		
School #9	7.14	.94			3.64	.78		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 11

Dimensions of Teachers' Efficacy Beliefs by Gender and Department: Results of Analysis of Variance

	Efficacy for Classroom Management N = 193				Efficacy for Instructional Practices N = 191				Efficacy for Student Engagement N = 195			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta	M	SD	F(df)	Eta
Gender			.955 (1,191)	.005			1.28 (1,189)	.007			.159 (1,193)	.001
Male	7.18	1.13			7.51	.96			6.13	1.13		
Female	7.30	1.06			7.72	.85			6.11	1.02		
Department			.578 (6,186)	.019			.924 (6,184)	.030			1.27 (6,188)	.040
English	7.33	1.08			7.61	.90			6.04	.94		
Math	7.24	1.10			7.40	1.04			5.84	.95		
Science	7.29	.91			7.57	.85			6.07	1.08		
Social Studies	7.38	1.20			7.90	.90			6.29	1.11		
Special Education	7.23	1.23			7.60	.89			6.50	1.22		
Foreign Language	7.27	.79			7.76	.55			5.97	.72		
Other	7.00	1.24			7.68	1.00			6.16	1.30		

Table 12

Dimensions of Teachers' Efficacy Beliefs by School: Results of Analysis of Variance

	Efficacy for Classroom Management N = 193				Efficacy for Instructional Practices N = 191				Efficacy for Student Engagement N = 195			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta	M	SD	F(df)	Eta
School			1.58 (8,182)	.064			1.56 (8,182)	.064			2.94** (8,186)	.112
School #1	7.31	1.09			7.67	1.10			6.04	.75		
School #2	7.62	.94			7.95	.90			6.37	.95		
School #3	7.31	1.00			7.75	.87			6.16	.93		
School #4	6.96	1.31			7.15	1.00			5.64	1.15		
School #5	6.88	1.05			7.43	.89			5.58	.74		
School #6	6.59	.80			7.34	.59			5.55	.63		
School #7	7.44	1.32			7.68	.65			6.39	1.30		
School #8	7.44	.73			7.70	.84			6.66	.94		
School #9	7.34	1.15			7.80	.87			6.26	1.27		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 13

Perceptions of Professional Community Features by Gender and Department: Results of Analysis of Variance

	Reflective Dialogue				Shared Norms & Values			
	N = 194				N = 196			
	<u>M</u>	<u>SD</u>	<u>F(df)</u>	Eta	<u>M</u>	<u>SD</u>	<u>F(df)</u>	Eta
Gender			1.41 (1,192)	.008			5.97* (1,194)	.032
Male	3.51	1.32			4.14	1.11		
Female	3.75	1.30			4.61	1.03		
Department			2.18* (6,177)	.068			2.90** (6,189)	.087
English	3.51	1.26			4.43	.99		
Math	3.20	1.32			4.60	1.00		
Science	3.82	1.33			4.21	1.17		
Social Studies	3.27	1.24			4.27	1.05		
Special Education	3.79	1.22			3.81	1.20		
Foreign Language	4.85	1.03			5.13	.84		
Other	3.76	1.28			4.80	.95		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 14

Perceptions of Professional Community Features by Gender and Department: Results of Analysis of Variance

	Collaboration				Deprivatized Practice			
	N = 193				N = 193			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
Gender			.461 (1,191)	.003			.045 (1,191)	.000
Male	4.29	.91			2.42	.90		
Female	4.41	1.02			2.47	1.01		
Department			2.73** (6,186)	.084			1.33 (6,186)	.043
English	4.51	.69			2.21	.76		
Math	4.21	1.12			2.23	.94		
Science	4.27	.99			2.53	.99		
Social Studies	4.03	.98			2.34	.85		
Special Education	3.94	1.22			2.68	1.20		
Foreign Language	5.06	.61			2.61	.80		
Other	4.62	.96			2.86	1.24		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 15

Perceptions of Professional Community Features by School: Results of Analysis of Variance

	Reflective Dialogue				Shared Norms & Values			
	N = 194				N = 196			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
School			1.13 (8,185)	.047			3.25** (8,187)	.122
School #1	4.17	1.50			4.54	1.26		
School #2	3.55	1.33			4.99	.76		
School #3	3.57	1.21			4.96	.62		
School #4	3.29	1.10			4.02	1.22		
School #5	3.59	1.14			4.23	1.00		
School #6	4.34	1.20			3.91	1.04		
School #7	3.71	1.58			3.88	1.24		
School #8	3.58	1.24			4.39	1.06		
School #9	3.53	1.31			4.51	1.01		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 16

Perceptions of Professional Community Features by School: Results of Analysis of Variance

	Collaboration				Deprivatized Practice			
	N = 193				N = 193			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
School			1.63 (8,184)	.066			1.91 (8,184)	.076
School #1	4.85	.96			3.05	1.03		
School #2	4.46	1.08			2.29	.87		
School #3	4.45	.79			2.38	.93		
School #4	4.16	.77			2.01	.85		
School #5	4.27	.91			2.25	.88		
School #6	4.42	.91			2.64	1.02		
School #7	3.91	1.21			2.53	1.07		
School #8	4.15	1.00			2.61	.94		
School #9	4.48	.94			2.44	1.00		

Mean differences in teachers' perceptions of sources of efficacy information by gender, department, and school. Analyses of variance were performed on teachers' perceptions of sources of efficacy information to determine if mean differences in vicarious experience, verbal persuasion, and teachers' beliefs about their colleagues as proficient teaching models varied by gender, department, or school.

Table 17 presents teachers' perceptions of vicarious experience, verbal persuasion, and colleagues as proficient models by gender and department. Perceptions of vicarious experience did not significantly vary by gender or by department. Likewise, there were no significant mean differences in teachers' perceptions of verbal persuasion by gender or by department. Teachers' perceptions of colleagues as proficient models were also insignificant by gender and by department.

Teachers' perceptions of vicarious experience, verbal persuasion, and colleagues as proficient models by school are shown in Table 18. Vicarious experience significantly varied by school. However a post-hoc Scheffe test did not reveal which schools differed on this variable. No significant mean differences were found between schools in perceptions of verbal persuasion or perceptions of colleagues as proficient teaching models.

Table 17

Teachers' Perceptions of Sources of Efficacy Information by Gender and Department: Results of Analysis of Variance

	Vicarious Experience N = 191				Verbal Persuasion N = 186				Proficient Model N = 194			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta	M	SD	F(df)	Eta
Gender			2.21 (1,189)	.012			.252 (1,184)	.001			.040 (1,192)	.000
Male	4.16	1.37			4.25	.91			4.60	.89		
Female	3.88	1.45			4.24	1.04			4.61	.98		
Department			1.80 (6,184)	.058			.422 (6,179)	.014			1.48 (6,187)	.047
English	3.41	1.52			4.27	.93			4.72	.90		
Math	3.95	1.51			4.21	.97			4.40	1.01		
Science	3.83	1.27			4.07	.96			4.38	.76		
Social Studies	4.28	1.38			4.38	1.03			4.81	.74		
Special Education	4.25	1.15			3.97	1.07			4.26	1.29		
Foreign Language	4.12	1.53			4.64	.89			4.88	1.05		
Other	4.41	1.32			4.21	1.07			4.74	.87		

Table 18

Teachers' Perceptions of Sources of Efficacy Information by School: Results of Analysis of Variance

	Vicarious Experience N = 191				Verbal Persuasion N = 186				Proficient Model N = 194			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta	M	SD	F(df)	Eta
School			2.51** (8,182)	.099			.885 (8,177)	.038			1.37 (8,185)	.056
School #1	4.10	1.66			4.54	.84			4.61	1.19		
School #2	4.56	.97			4.28	1.06			4.90	1.00		
School #3	4.40	1.07			4.47	.84			4.79	.70		
School #4	3.39	1.63			4.16	1.10			4.51	.80		
School #5	3.24	1.48			4.12	.76			4.24	.76		
School #6	4.73	1.16			4.50	.75			4.61	1.22		
School #7	3.67	1.36			3.98	1.16			4.58	.75		
School #8	4.04	1.52			4.34	.85			4.27	1.11		
School #9	3.94	1.35			4.03	1.18			4.82	.89		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Mean differences in teachers' perceptions of the nature of student ability and student performance by gender, department, and school. Teachers' perceptions of the nature of student ability and of student performance are presented in Table 19. Teachers' view of student ability as either incremental or fixed significantly varied by gender, with male teachers possessing a more fixed view of student ability than female teachers. Teachers' view of ability did not vary significantly by department. Teachers' perceptions of student performance did not vary significantly by gender or by department.

Table 20 shows teachers' perceptions of the nature of student ability and of student performance by school. Results show significant mean differences by school for teachers' view of ability. A post-hoc Scheffe test revealed that teachers in School #4 reported a significantly more fixed view of ability than did teachers in School #2 ($p < .05$) and School #8 ($p < .01$). Teachers' perceptions of student performance did not significantly vary by school.

Summary. Analysis of variance results indicate that both teachers' perceptions of shared norms and values and view of ability significantly varied by gender; perceptions of overall professional community, shared norms and values, reflective dialogue, and collaboration each varied significantly by department; and teachers' overall efficacy, efficacy for classroom management, perceptions of shared norms and values, and reports of vicarious experience significantly varied by school. However, in all cases the effect sizes were minimal, with only 1% of the variance explained. Teachers' view of the nature of ability also varied significantly by school; however, school effects accounted for only 2% of the total variance.

Table 19

Teachers' Perceptions of the Nature of Ability and Student Performance by Gender and Department: Results of Analysis of Variance

	Teachers' Perceptions of the Nature of Student Ability N = 195				Teachers' Perceptions of Students' Performance N = 195			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
Gender			5.31* (1,193)	.028			.106 (1,193)	.001
Male	3.54	.91			2.67	.67		
Female	3.15	.88			2.60	.84		
Department			1.67 (6,188)	.053			.591 (6,188)	.019
English	3.45	.84			2.67	.82		
Math	3.43	.87			2.63	.65		
Science	3.43	1.07			2.46	.73		
Social Studies	3.20	.74			2.75	.80		
Special Education	3.12	.99			2.45	.75		
Foreign Language	3.29	.92			2.59	1.05		
Other	2.99	.96			2.72	.67		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 20

Teachers' Perceptions of the Nature of Ability and Student Performance by School: Results of Analysis of Variance

	Teachers' Perceptions of the Nature of Student Ability N = 195				Teachers' Perceptions of Students' Performance N = 195			
	M	SD	F(df)	Eta	M	SD	F(df)	Eta
School			3.94*** (8,186)	.145			1.83 (8,186)	.073
School #1	3.25	.85			2.45	.72		
School #2	2.96	.92			2.83	.90		
School #3	3.55	.82			2.80	.89		
School #4	4.00	.72			2.54	.73		
School #5	3.38	.71			2.49	.69		
School #6	3.47	.88			2.09	.54		
School #7	3.08	.94			2.87	.74		
School #8	2.72	.81			2.44	.64		
School #9	3.36	.96			2.77	.82		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

<u>Testing the Mediation Model: Answers to Research Questions</u>

A series of regression analyses were performed to assess each of the pathways in the mediation model described in Chapter 1 (also see Figure 2 below). In order to test for mediation, the following steps (as outlined by Baron and Kenny, 1986) were followed. First, to establish that there was an effect that might be mediated, the relationship between teachers' efficacy beliefs and their perceptions of professional community within their department was tested. Second, the relationship between teachers' perceptions of a professional community and teachers' sources of efficacy information was investigated to determine whether perceptions of professional community was related to the mediating variables (i.e., vicarious experience and verbal persuasion). Next, the relationship between sources of efficacy information and teachers' efficacy beliefs was tested. Finally, to examine mediation, the relationship between teachers' efficacy beliefs and perceptions of professional community was examined when sources of efficacy information were entered into the model.

Perceptions of Professional Community   ⟶   Teachers' Efficacy Beliefs

Sources of Efficacy Information
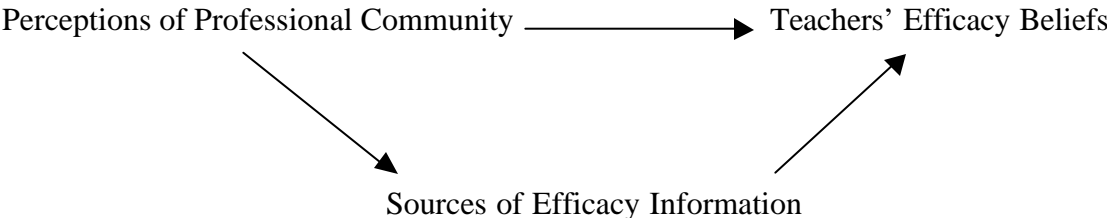
<u>Figure 2:</u> Mediation Model

Each of the model's pathways were examined using hierarchical regression analyses. For each analysis, demographic variables (gender, school size, and department size) were entered on Step 1. Teacher variables (experience level, view of

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ability, and perceptions of student performance) were entered on Step 2, and the outcome variables (sources of efficacy information or teachers' efficacy beliefs) were entered on Step 3.

As was mentioned in Chapter 1, some investigations of the relationship between school variables and teachers' efficacy beliefs have incorporated multiple levels of analyses into regression models (e.g., teachers within schools). However, because the goal of this study was to examine the relationship between teachers' subjective experiences, or *perceptions*, of a community network within departments and these teachers' individual beliefs about their own efficacy, a multiple level analysis was not chosen. However, in order to remain sensitive to possible group effects, a fixed effects approach to clustering was employed (Cohen, Cohen, West, & Aiken, 2003). This approach takes into account possible group effects within a regression analysis.

To begin, intraclass correlations (ICC) were calculated for those dependent variables that differed significantly by school (i.e., teacher efficacy, efficacy for student engagement, and vicarious experience). The ICC indicates the importance of group membership (i.e., school) in determining an individual teacher value on these variables. The ICC ranges from 0 for complete independence of group membership to 1 for complete dependence (Cohen et al., 2003). The ICCs for the variables tested are listed in Table 21.

Table 21

Intraclass Correlation Coefficients

Variable	Intraclass Correlation
Overall Efficacy	.06
Efficacy for Student Engagement	.08
Vicarious Experience	.06

Because group membership could have a significant effect on results, despite the small ICCs, a decision was made to continue with the fixed effects approach to clustering. To do this, hierarchical regression analyses were still conducted at the individual level, however, for the three dependent variables that showed significant mean differences for school, a set of dummy codes for the 9 schools were included as predictors in the analyses. The school used as the comparison in the dummy-coding was characteristic of the schools in the sample. Including these dummy codes allowed for an examination of possible mean differences across schools. When needed, dummy-coded school variables were entered on Step 1, along with gender and department size.

How is teacher efficacy related to professional community?

To answer this question, teachers' perceptions of professional community and its features within their academic departments were examined as predictors of teachers' overall efficacy and teachers' efficacy for classroom management, instructional practices, and student engagement.

Perceptions of overall professional community as a predictor of teachers' overall efficacy. Table 22 presents results of a hierarchical regression analysis in which teachers' perceptions of a professional community in their academic department was

examined as a predictor of their overall efficacy. Demographic variables accounted for a significant amount of variance in teachers' overall efficacy beliefs in Step 1 (11%), and teacher variables accounted for 18% of the variance in overall efficacy on Step 2. At the third step, teachers' perceptions of a departmental professional community accounted for an additional significant amount of variance in teachers' overall efficacy.

Perceptions of overall professional community as a predictor of teachers' efficacy for classroom management, instructional practices, and student engagement. To examine teachers' perceptions of professional community as a predictor of efficacy dimensions, three separate hierarchical regression analyses were performed, using each efficacy dimension (classroom management, instructional practices, student engagement) as a dependent variable. As shown in Tables 23 and 24, demographic variables on Step 1 did not account for a significant amount of variance in teachers' efficacy for classroom management or instructional practices, but did account for 10% of the variance in teachers' efficacy for student engagement. Furthermore, teacher variables on Step 2 accounted for a significant amount of variance in all three dimensions of efficacy. Finally, teachers' perceptions of a departmental professional community when entered on Step 3, explained an additional, significant amount of variance in efficacy for classroom management (7%), efficacy for instructional practices (4%), and efficacy for student engagement (5%).

Perceptions of specific professional community features as predictors of teachers' overall efficacy. Table 25 presents results from a hierarchical regression analysis examining teachers' perceptions of departmental reflective dialogue, shared norms and values, collaboration, and deprivatized practice as predictors of teachers'

overall efficacy beliefs. Demographic variables on Step 1 accounted for a significant amount of variance in teachers' efficacy beliefs (11%), as did teacher variables on Step 2 (18%). At Step 3 professional community features accounted for an additional, significant amount of variance in teachers' overall efficacy (11%). Specifically, teachers' perception of shared norms and values was a significant and positive predictor of teachers' efficacy beliefs.

Perceptions of professional community features as predictors of teachers' efficacy for classroom management, instructional practices, and student engagement. To examine teachers' perceptions of departmental reflective dialogue, shared norms and values, collaboration, and deprivatized practice as predictors of each of the efficacy dimensions, three separate hierarchical regression analyses were performed, using each efficacy dimension (classroom management, instructional practices, student engagement) as a dependent variable. As shown in Tables 26 and 27 demographic variables on Step 1 did not account for a significant amount of variance in teachers' efficacy for classroom management or instructional practices, but did account for a significant amount of variance (10%) in teachers' efficacy student engagement. Teacher variables on Step 2 accounted for a significant amount of variance in each of the three efficacy dimensions. Finally, the professional community features entered on Step 3 also accounted for an additional, significant amount of variance in teachers' efficacy for classroom management, instructional practices, and student engagement.

A closer look at the individual predictors revealed that perception of shared norms and values was a significant and positive predictor of each of the three efficacy

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dimensions. In addition, teachers' perception of deprivatized practice was a significant and positive predictor of their efficacy for instructional practices.

Summary. Results from the hierarchical regression analyses provide empirical support for a relationship between teachers' perceptions of a professional community within their academic department and their efficacy beliefs. Specifically, perception of departmental professional community was a significant and positive predictor of teachers' overall efficacy, efficacy for classroom management, efficacy for instructional practices, and efficacy for student engagement. When the specific features of a professional community were examined as predictors, teachers' perception of shared norms and values within the department was the strongest and most consistent predictor of efficacy. Deprivatized practice was a significant and positive predictor for teachers' efficacy for instructional practices. Neither reflective dialogue nor collaboration were significant independent predictors in any of the analyses.

These relationships were found after taking into account several demographic and other teacher variables. Of interest is that teachers' perception of student performance was the strongest, most consistent predictor of teachers' efficacy beliefs (overall and in the three dimensions), above and beyond that of professional community, shared norms and values, and deprivatized practice in most cases. Teachers' view of student ability as incremental or fixed was a consistent significant predictor of teacher' overall efficacy, efficacy for classroom management, and efficacy for student engagement. Teachers' years of experience also proved to be a significant and positive predictor of teachers' efficacy for instructional practices. In addition,

department size was a significant and positive predictor of teachers' efficacy for classroom management.

Table 22

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Self-Efficacy

Variables N=169	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.11*		.18***		.08***	.36***
Step 1: Demographics							
Gender	-.06		-.05		-.08		
Department Size	-.01		-.00		.09		
School Dummy Code 1	.01		.10		.06		
School Dummy Code 2	.03		.05		.05		
School Dummy Code 3	-.07		-.02		-.06		
School Dummy Code 4	-.16		-.06		-.08		
School Dummy Code 5	-.20*		-.11		-.10		
School Dummy Code 6	-.20*		-.08		-.11		
School Dummy Code 7	.08		.12		.12		
School Dummy Code 8	-.03		.01		.02		
Step 2: Teacher Variables							
Teaching Experience			.07		.04		
Teachers' View of Ability			-.17*		-.16*		
Student Performance			.38***		.35***		
Step 3: Professional Community					.30***		

Note: * p < .05; ** p < .01; *** p < .001

Table 23

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Self-Efficacy for Classroom Management and Instructional Practices

Variables	Efficacy for Classroom Management N = 177			Efficacy for Instructional Practices N = 174		
Steps	1	2	3	1	2	3
Step 1: Demographics						
Gender	-.03	-.02	-.06	.07	.10	.07
Department Size	.11	.12	.21**	-.10	-.09	-.03
School Size	-.12	-.11	-.13	-.03	-.04	-.05
Step 2: Teacher Variables						
Teaching Experience		.05	.02		.18**	.16*
Teachers' View of Ability		-.15*	-.14*		-.13	-.12
Student Performance		.41***	.38***		.34***	.33***
Step 3: Professional Community			.29***			.21**
R^2 Change	.01	.21***	.07***	.02	.20***	.04**
Total R^2			.30***			.26***

Note: $*p < .05$; $** p < .01$; $*** p < .001$

Table 24

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Self-Efficacy for Student Engagement

Variables N=179	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.10*		.10***		.05***	.26***
Step 1: Demographics							
Gender	-.05		-.07		-.10		
Department Size	-.06		-.04		.04		
School Dummy Code 1	-.09		-.02		-.05		
School Dummy Code 2	-.02		-.01		-.01		
School Dummy Code 3	-.08		-.04		-.07		
School Dummy Code 4	-.15		-.07		-.08		
School Dummy Code 5	-.22*		-.15		-.14		
School Dummy Code 6	-.19*		-.11		-.14		
School Dummy Code 7	.09		.12		.13		
School Dummy Code 8	-.05		-.01		-.00		
Step 2: Teacher Variables							
Teaching Experience			.01		-.02		
Teachers' View of Ability			-.18*		-.17*		
Student Performance			.26***		.23**		
Step 3: Professional Community					.25***		

Note: *p < .05; ** p < .01; *** p < .001

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Table 25

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Self-Efficacy

Variables N=169	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.11*		.18***		.11***	.39***
Step 1: Demographics							
Gender	-.06		-.05		-.11		
Department Size	-.01		-.00		.11		
School Dummy Code 1	.01		.10		.06		
School Dummy Code 2	.03		.05		.03		
School Dummy Code 3	-.07		-.02		-.10		
School Dummy Code 4	-.16		-.06		-.07		
School Dummy Code 5	-.20*		-.11		-.09		
School Dummy Code 6	-.20*		-.08		-.10		
School Dummy Code 7	.08		.12		.11		
School Dummy Code 8	-.03		.01		.00		
Step 2: Teacher Variables							
Teaching Experience			.07		.00		
Teachers' View of Ability			-.17*		-.13		
Student Performance			.38***		.33***		
Step 3: Community Variables							
Reflective Dialogue					.13		
Shared Norms & Values					.27***		
Collaboration					-.06		
Deprivatized Practice					.15		

Note: * p < .05; ** p < .01; *** p < .001

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Table 26

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Self-Efficacy for Classroom Management and Instructional Practices

Variables	Efficacy for Classroom Management N = 177			Efficacy for Instructional Practices N = 174		
Steps	1	2	3	1	2	3
Step 1: Demographics						
Gender	-.03	-.02	-.08	.07	.10	.03
Department Size	.11	.12	.23**	-.10	-.09	.01
School Size	-.12	-.11	-.13	-.03	-.04	-.07
Step 2: Teacher Variables						
Teaching Experience		.05	-.00		.18**	.11
Teachers' View of Ability		-.15*	-.13		-.13	-.08
Student Performance		.41***	.36***		.34***	.30***
Step 3: Community Variables						
Reflective Dialogue			.06			.03
Shared Norms & Values			.21**			.31***
Collaboration			.05			-.11
Deprivatized Practice			.15			.19*
R^2 Change	.01	.21***	.10***	.02	.20***	.10***
Total R^2			.32***			.32***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

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Table 27

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Self-Efficacy for Student Engagement

Variables N=179	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.10*		.10***		.07**	.27***
Step 1: Demographics							
Gender	-.05		-.07		-.12		
Department Size	-.06		-.04		.05		
School Dummy Code 1	-.09		-.02		-.05		
School Dummy Code 2	-.02		-.01		-.02		
School Dummy Code 3	-.08		-.04		-.09		
School Dummy Code 4	-.15		-.07		-.08		
School Dummy Code 5	-.22*		-.15		-.13		
School Dummy Code 6	-.19*		-.11		-.12		
School Dummy Code 7	.09		.12		.12		
School Dummy Code 8	-.05		-.01		-.01		
Step 2: Teacher Variables							
Teaching Experience			.01		-.04		
Teachers' View of Ability			-.18*		-.15*		
Student Performance			.26***		.22**		
Step 3: Community Variables							
Reflective Dialogue					.10		
Shared Norms & Values					.19*		
Collaboration					-.02		
Deprivatized Practice					.14		

Note: * p < .05; ** p < .01; *** p < .001

To what extent does teacher efficacy relate to professional community by way of vicarious experience and verbal persuasion?

To answer this question, three separate series of hierarchical regression analyses were performed. The first series of regressions examined the pathway between teachers' perceptions of professional community and the sources of efficacy information (vicarious experience, verbal persuasion). The second series examined the relationship between sources of efficacy information and teachers' efficacy beliefs. Finally, the third series of analyses reexamined the pathway between teacher efficacy and perceptions of professional community, adding vicarious experience and verbal persuasion to the model. It was expected that if the mediation model was to be confirmed, the relationship between teachers' efficacy beliefs and perceptions of departmental professional community would either diminish or disappear once vicarious experience and verbal persuasion were introduced.

Series 1: Professional Community → Sources of Efficacy Information

Perceptions of a professional community as a predictor of teachers' sources of efficacy information. Tables 28 and 29 present results from hierarchical regression analyses examining teachers' perception of a departmental professional community as a predictor of teachers' sources of efficacy information (i.e., vicarious experience and verbal persuasion). Two separate hierarchical regression analyses were performed, using each source of efficacy information as a dependent variable. Demographic variables entered on Step 1 accounted for a significant amount of variance in teachers' vicarious experience (14%) but not for teachers' reports of verbal persuasion. Conversely, teacher variables did not account for a significant amount of variance in

vicarious experience, but accounted for a significant amount of variance (5%) in verbal persuasion reports. Finally, teachers' perception of a professional community within their department accounted for an additional, significant amount of variance in both their reports of vicarious experience (13%) and verbal persuasion (22%).

Perceptions of professional community features as predictors of teachers' sources of efficacy information. To examine teachers' perceptions of departmental reflective dialogue, shared norms and values, collaboration, and deprivatized practice as predictors of vicarious experience and verbal persuasion, two separate hierarchical regressions were conducted, using each source of efficacy information as a dependent variable. As Tables 30 and 31 show, demographic variables on Step 1 accounted for a significant amount of variance in teachers' vicarious experience (14%) but not in teachers' reports of verbal persuasion. Teacher variables on Step 2 did not account for a significant amount of variance in reports of vicarious experience, whereas these variables accounted for a significant amount of variance in reports of verbal persuasion (5%). Moreover, an additional, significant amount of variance in teachers' vicarious experience and verbal persuasion was accounted for by perceptions of departmental professional community features (19% and 23%, respectively). Specifically, deprivatized practice was a significant and positive predictor of teachers' vicarious experience, whereas reflective dialogue and collaboration were significant and positive predictors of verbal persuasion reports.

Summary. Results from the hierarchical regression analyses performed show empirical support for teachers' perceptions of a departmental professional community as a predictor of sources of efficacy information. Specifically, perception of

professional community was a significant and positive predictor of both vicarious experience and verbal persuasion. When the specific features of a professional community were examined as predictors, deprivatized practice was a significant and positive predictor of vicarious experience, whereas reflective dialogue and collaboration were significant and positive predictors of verbal persuasion. Shared norms and values did not significantly predict either of the sources of efficacy information.

The size of the academic department was a significant and positive predictor of teachers' reports of verbal persuasion, indicating that the larger the department, the more teachers felt that they received positive feedback about their teaching from their departmental colleagues. Furthermore, gender was revealed as a significant and negative predictor of teachers' vicarious experience, indicating that male teachers reported more opportunities for observational learning than female teachers.

Table 28

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Vicarious Experience

Variables N=177	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.14**		.00		.13***	.27***
Step 1: Demographics							
Gender	-.08		-.09		-.14*		
Department Size	-.21*		-.20*		-.08		
School Dummy Code 1	.03		.04		-.04		
School Dummy Code 2	.15		.15		.13		
School Dummy Code 3	.21*		.21*		.15		
School Dummy Code 4	.00		.01		-.02		
School Dummy Code 5	-.13		-.12		-.12		
School Dummy Code 6	.15		.15		.10		
School Dummy Code 7	.05		.04		.03		
School Dummy Code 8	.00		.01		.00		
Step 2: Teacher Variables							
Teaching Experience			.01		-.03		
Teachers' View of Ability			-.07		-.05		
Student Performance			-.02		-.06		
Step 3: Professional Community					.40***		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 29

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Reports of Verbal Persuasion

Variables N=174	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.00		.05*		.22***	.27***
Step 1: Demographics							
Gender	.05		.04		-.04		
Department Size	.00		.03		.17*		
School Size	-.03		-.02		-.04		
Step 2: Teacher Variables							
Teaching Experience			-.07		-.12		
Teachers' View of Ability			-.13		-.12		
Student Performance			.18*		.14*		
Step 3: Professional Community					.50***		

Note: * $\underline{p}$ < .05; ** $\underline{p}$ < .01; *** $\underline{p}$ < .001

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Table 30

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Vicarious Experience

Variables N=177	Step 1 ß	R² Change	Step 2 ß	R² Change	Step 3 ß	R² Change	Total R²
		.14**		.00		.19***	.34***
Step 1: Demographics							
Gender	-.08		-.09		-.12		
Department Size	-.21*		-.20*		-.07		
School Dummy Code 1	.03		.04		-.06		
School Dummy Code 2	.15		.15		.16		
School Dummy Code 3	.21*		.21*		.15		
School Dummy Code 4	.00		.01		-.00		
School Dummy Code 5	-.13		-.12		-.09		
School Dummy Code 6	.15		.15		.12		
School Dummy Code 7	.05		.04		.03		
School Dummy Code 8	.00		.01		.01		
Step 2: Teacher Variables							
Teaching Experience			.01		-.01		
Teachers' View of Ability			-.07		-.00		
Student Performance			-.02		-.05		
Step 3: Community Variables							
Reflective Dialogue					.05		
Shared Norms & Values					.10		
Collaboration					.04		
Deprivatized Practice					.41***		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 31

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Reports of Verbal Persuasion

Variables N=174	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.00		.05*		.23***	.28***
Step 1: Demographics							
Gender	.05		.04		-.05		
Department Size	.00		.03		.17*		
School Size	-.03		-.02		-.04		
Step 2: Teacher Variables							
Teaching Experience			-.07		-.13		
Teachers' View of Ability			-.13		-.15*		
Student Performance			.18*		.12		
Step 3: Community Variables							
Reflective Dialogue					.30***		
Shared Norms & Values					.09		
Collaboration					.22*		
Deprivatized Practice					-.01		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Series 2: Sources of Efficacy Information → Teachers' Efficacy Beliefs

   Sources of efficacy information as predictors of teachers' overall efficacy

beliefs. Table 32 presents results of a hierarchical regression examining vicarious

experience and verbal persuasion as predictors of teachers' self-efficacy beliefs.

Demographic variables on Step 1 did not account for a significant amount of variance in

teachers' overall efficacy, whereas teacher variables entered on Step 2 did account for a

significant amount of variance (23%). Teachers' sources of efficacy information

accounted for an additional, significant amount of variance in self-efficacy on Step 3,

with verbal persuasion as a significant and positive predictor.

   Sources of efficacy information as predictors of teachers' efficacy for classroom

management, instructional practices, and student engagement. To examine vicarious

experience and verbal persuasion as predictors of the three efficacy dimensions, three

separate hierarchical regression analyses were performed, using each efficacy

dimension (classroom management, instructional practices, student engagement) as a

dependent variable. As Table 33 shows, demographic variables on Step 1 did not

account for a significant amount of variance in teachers' efficacy for classroom

management, instructional practices, or student engagement. In contrast, teacher

variables on Step 2 accounted for a significant amount of variance in each of the three

efficacy dimensions. Sources of efficacy information accounted for an additional,

significant amount of variance in teachers' efficacy for instructional practices and

efficacy for student engagement, but not for classroom management efficacy.

Specifically, teachers' reports of verbal persuasion were a significant and positive

predictor of efficacy for instructional practices and student engagement.

Summary. Results indicate that verbal persuasion is a significant, positive predictor of teachers' overall efficacy beliefs, efficacy for instructional practices, and efficacy for student engagement, but not for classroom management efficacy. In contrast, vicarious experience was not a significant independent predictor of efficacy in any of the analyses. In addition, teachers' perception of student performance was a stronger predictor of teachers' overall efficacy and efficacy in the three dimensions than was verbal persuasion.

Table 32

Summary of Hierarchical Regression Analysis for Teachers' Sources of Efficacy Information as Predictors of Teachers' Self-Efficacy

Variables N=169	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.01		.23***		.03*	.27***
Step 1: Demographics							
Gender	-.01		-.01		-.01		
Department Size	-.08		-.04		-.03		
School Size	-.01		-.03		-.03		
Step 2: Teacher Variables							
Teaching Experience			.11		.13		
Teachers' View of Ability			-.21**		-.19**		
Student Performance			.39***		.36***		
Step 3: Sources of Efficacy							
Vicarious Experience					.05		
Verbal Persuasion					.17*		

Note: * p < .05; ** p < .01; *** p < .001

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Table 33

Summary of Hierarchical Regression Analyses for Teachers' Sources of Efficacy Information as Predictors of Teachers' Self-Efficacy for Classroom Management, Instructional Practices, and Student Engagement

Variables	Efficacy for Classroom Management N=177			Efficacy for Instructional Practices N=173			Efficacy for Student Engagement N=179		
Steps	1	2	3	1	2	3	1	2	3
Step 1: Demographics									
Gender	.02	.01	.02	.06	.07	.07	-.04	-.06	-.07
Department Size	.07	.11	.12	-.12	-.09	-.08	-.15	-.10	-.09
School Size	-.07	-.09	-.09	-.05	-.08	-.08	.05	.06	.06
Step 2: Teacher Variables									
Teaching Experience		.08	.08		.20**	.22**		.03	.05
Teachers' View of Ability		-.16*	-.15*		-.11	-.09		-.24**	-.23**
Student Performance		.41***	.40***		.35***	.32***		.27***	.23**
Step 3: Sources of Efficacy									
Vicarious Experience			.06			.04			.02
Verbal Persuasion			.06			.17*			.19**
R^2 Change	.01	.22***	.01	.03	.21***	.03*	.02	.14***	.04*
Total R^2			.23***			.26***			.19***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

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Efficacy Beliefs

Sources of efficacy as a mediator of the link between professional community
perceptions and teachers' overall efficacy. Table 34 presents results from a hierarchical
regression analysis examining vicarious experience and verbal persuasion as a mediator
of the relationship between teachers' perceptions of departmental professional
community and teachers' overall efficacy beliefs. Demographic variables entered on
Step 1 did not account for a significant amount of variance in teachers' efficacy beliefs,
whereas teacher variables on Step 2 accounted for 18% of the overall variance in
teachers' efficacy beliefs and perceptions of professional community entered on Step 3
accounted for an additional, significant amount of variance (8%). However, when
entered on Step 4, sources of efficacy variables did not account for a significant amount
of variance in teachers' overall efficacy beliefs.

In order for vicarious experience and verbal persuasion to mediate the
relationship between teachers' perceptions of professional community and their overall
efficacy, the significance level of professional community as an individual predictor
must either disappear or diminish in Step 4 (when vicarious experience and verbal
persuasion are added to the model). Results of this regression analysis reveal that
mediation effects were not present.

Sources of efficacy as a mediator of the link between professional community
perceptions and teachers' efficacy for classroom management, instructional practices,
and student engagement. Three separate hierarchical regression analyses were
performed to examine vicarious experience and verbal persuasion as a mediator of the

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relationship between teachers' perceptions of departmental professional community and their efficacy for classroom management, instructional practices, and student engagement. As Tables 35 and 36 show, results from this analysis revealed that demographic variables entered on Step 1 did not account for a significant amount of variance in teachers' efficacy for classroom management, instructional practices, or student engagement. However, teacher variables on Step 2 did account for a significant amount of variance in each of the three efficacy dimensions, as did teachers' perceptions of professional community on Step 3. When vicarious experience and verbal persuasion were entered on Step 4, they did not account for a significant amount of variance in teachers' efficacy for classroom management, instructional practices, or student engagement. Furthermore, perception of professional community as a significant, independent predictor does not disappear from Step 3 to Step 4, therefore providing no empirical support for vicarious experience and verbal persuasion as a mediator in the relationship between teachers' perception of professional community and teachers' efficacy for classroom management, instructional practices, or student engagement.

Sources of efficacy as a mediator of the link between perceptions of professional community features and teachers' overall efficacy. Table 37 presents results from a hierarchical regression analysis examining the mediating effects of vicarious experience and verbal persuasion on the relationship between teachers' perceptions of departmental reflective dialogue, shared norms and values, collaboration, and deprivatized practice and teachers' overall efficacy beliefs. Findings indicated that demographic variables on Step 1 did not account for a significant amount of variance in teachers' self-efficacy,

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whereas teacher variables on Step 2 and perceptions of professional community features on Step 3 did account for a significant amount of variance. However, the sources of efficacy information variables entered on Step 4 did not account for a significant amount of variance in teachers' efficacy beliefs. An examination of individual predictors on Step 3 and 4 revealed that shared norms and values and deprivatized practice were both significant and positive predictors, and their significance level did not diminish between steps, indicating no empirical support for vicarious experience and verbal persuasion as a mediator.

     <u>Sources of efficacy as a mediator of the link between perceptions of professional community features and teachers' efficacy for classroom management, instructional practices, and student engagement.</u> Tables 38 and 39 present results from three separate hierarchical regression analyses examining vicarious experience and verbal persuasion as mediators of the relationship between teachers' perceptions of departmental reflective dialogue, shared norms and values, collaboration, and deprivatized practice and teachers' efficacy for classroom management, instructional practices, and student engagement. Demographic variables on Step 1 did not account for a significant amount of variance in teachers' efficacy in any of the three dimensions. In contrast, teacher variables entered on Step 2 and perceptions of professional community features entered on Step 3 accounted for significant amounts of variance in teachers' efficacy for classroom management, instructional practices, and student engagement. However, sources of efficacy variables entered on Step 4 did not account for a significant amount of variance in teachers' efficacy in the three dimensions.

To check for mediation effects, the significance levels of the professional community variables were examined on Steps 3 and 4. Perception of shared norms and values was a significant predictor in both steps as was deprivatized practice (for classroom management and instructional practices), however the significance level did not diminish or disappear from Step 3 to Step 4 (when vicarious experience and verbal persuasion were entered in the model). Therefore, there is no empirical support for vicarious experience and verbal persuasion as mediators of the relationship between teachers' perceptions of professional community features and their efficacy for classroom management, instructional practices, and student engagement.

Summary. Results from these analyses do not provide empirical support for the mediation model proposed in this study. Specifically, teachers' sources of efficacy information (i.e., vicarious experience and verbal persuasion) do not mediate the relationship between teachers' perceptions of professional community and its features within their department and teachers' overall efficacy, efficacy for classroom management, efficacy for instructional practices, and efficacy for student engagement.

Table 34

Summary of Hierarchical Regression Analysis to Examine Sources of Efficacy as a Mediator of the Link Between Teachers' Perceptions of Professional Community and Teachers' Self-Efficacy

Variables N = 163	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Step 4 ß	R^2 Change	Total R^2
		.10		.18***		.08***		.01	.38***
Step 1: Demographics									
Gender	-.06		-.05		-.09		-.09		
Department Size	-.01		.00		.09		.07		
School Dummy Code 1	.02		.11		.05		.04		
School Dummy Code 2	.03		.04		.03		.02		
School Dummy Code 3	-.05		-.01		-.06		-.06		
School Dummy Code 4	-.15		-.06		-.09		-.10		
School Dummy Code 5	-.19		-.11		-.11		-.12		
School Dummy Code 6	-.19*		-.08		-.12		-.13		
School Dummy Code 7	.09		.12		.11		.10		
School Dummy Code 8	-.01		.03		.02		.02		
Step 2: Teacher Variables									
Teaching Experience			.07		.04		.06		
Teachers' View of Ability			-.17*		-.15*		-.14		
Student Performance			.38***		.35***		.33***		
Step 3: Professional Community					.31***		.27***		
Step 4: Sources of Efficacy									
Vicarious Experience							-.03		
Verbal Persuasion							.11		

Note: * p < .05; ** p < .01; *** p < .001

Table 35

Summary of Hierarchical Regression Analysis to Examine Sources of Efficacy as a Mediator of the Link Between Teachers' Perceptions of Professional Community and Teachers' Efficacy for Classroom Management & Instructional Practices

Variables	Efficacy for Classroom Management N = 170				Efficacy for Instructional Practices N = 165			
Steps	1	2	3	4	1	2	3	4
Step 1: Demographics								
Gender	-.03	-.02	-.07	-.07	.05	.07	.03	.03
Department Size	.10	.13	.22**	.22**	-.09	-.08	-.01	-.02
School Size	-.11	-.11	-.12	-.12	-.06	-.07	-.08	-.08
Step 2: Teacher Variables								
Teaching Experience		.06	.03	.03		.20**	.17**	.19**
View of Ability		-.16*	-.15*	-.15*		-.13	-.12	-.11
Student Performance		.41***	.39***	.38***		.34***	.32***	.31***
Step 3: Professional Community			.30***	.30***			.23**	.19*
Step 4: Sources of Efficacy								
Vicarious Experience				-.02				-.01
Verbal Persuasion				.02				.09
R^2 Change	.01	.22***	.08***	.00	.02	.20***	.05**	.01
Total R^2				.31***				.27***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

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Table 36

Summary of Hierarchical Regression Analysis to Examine Sources of Efficacy as a Mediator of the Link Between Teachers' Perceptions of Professional Community and Teachers' Efficacy for Student Engagement

Variables N = 172	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Step 4 ß	R^2 Change	Total R^2
		.10		.10***		.06***		.01	.27***
Step 1: Demographics									
Gender	-.06		-.08		-.12		-.12		
Department Size	-.08		-.05		.03		.00		
School Dummy Code 1	-.08		-.01		-.06		-.07		
School Dummy Code 2	-.02		-.02		-.03		-.04		
School Dummy Code 3	-.06		-.03		-.07		-.07		
School Dummy Code 4	-.14		-.06		-.08		-.09		
School Dummy Code 5	-.20*		-.14		-.14		-.15		
School Dummy Code 6	-.17		-.09		-.12		-.13		
School Dummy Code 7	.10		.13		.13		.11		
School Dummy Code 8	-.03		.01		.01		.00		
Step 2: Teacher Variables									
Teaching Experience			.01		-.02		.00		
Teachers' View of Ability			-.18*		-.17*		-.16*		
Student Performance			.26***		.23**		.20**		
Step 3: Professional Community					.27***		.22*		
Step 4: Sources of Efficacy									
Vicarious Experience							-.03		
Verbal Persuasion							.14		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 37

Summary of Hierarchical Regression Analysis to Examine Sources of Efficacy as a Mediator of the Link Between Teachers' Perceptions of Professional Community Features and Teachers' Overall Self-Efficacy

Variables N = 163	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Step 4 ß	R^2 Change	Total R^2
		.10		.18***		.12***		.01	.41***
Step 1: Demographics									
Gender	-.06		-.05		-.12		-.11		
Department Size	-.01		.00		.11		.09		
School Dummy Code 1	.02		.11		.06		.04		
School Dummy Code 2	.03		.04		.01		.01		
School Dummy Code 3	-.05		-.01		-.08		-.08		
School Dummy Code 4	-.15		-.06		-.08		-.08		
School Dummy Code 5	-.19		-.11		-.09		-.10		
School Dummy Code 6	-.19*		-.08		-.10		-.10		
School Dummy Code 7	.09		.12		.11		.10		
School Dummy Code 8	-.01		.03		.02				
Step 2: Teacher Variables									
Teaching Experience			.07		.01		.02		
Teachers' View of Ability			-.17*		-.12		-.10		
Student Performance			.38***		.33***		.31***		
Step 3: Community Variables									
Reflective Dialogue					.15		.12		
Shared Norms & Values					.28***		.27***		
Collaboration					-.08		-.10		
Deprivatized Practice					.17*		.20*		

Table 37 (continued)

Variables	Step 1 ß	R² Change	Step 2 ß	R² Change	Step 3 ß	R² Change	Step 4 ß	R² Change
Step 4: Sources of Efficacy								
Vicarious Experience							-.06	
Verbal Persuasion							.12	

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 38

Summary of Hierarchical Regression Analysis to Examine Sources of Efficacy as a Mediator of the Link Between Teachers' Perceptions of Professional Community Features and Teachers' Efficacy for Classroom Management & Instructional Practices

Variables	Efficacy for Classroom Management N = 170					Efficacy for Instructional Practices N = 165			
Steps	1	2	3	4		1	2	3	4
Step 1: Demographics									
Gender	-.03	-.02	-.08	-.09		.05	.07	-.01	-.01
Department Size	.10	.13	.24**	.22**		-.09	-.08	.02	-.01
School Size	-.11	-.11	-.13	-.12		-.06	-.07	-.09	-.08
Step 2: Teacher Variables									
Teaching Experience		.06	.01	.01			.20**	.12	.13
View of Ability		-.16*	-.12	-.12			-.13	-.08	-.07
Student Performance		.41***	.37***	.36***			.34***	.29***	.27***
Step 3: Professional Community									
Reflective Dialogue			.07	.06				.07	.04
Shared Norms & Values			.20**	.21**				.31***	.31***
Collaboration			.03	.02				-.10	-.12
Deprivatized Practice			.18*	.20*				.17*	.19*
Step 4: Sources of Efficacy									
Vicarious Experience				-.06					-.06
Verbal Persuasion				.04					.11
R^2 Change	.01	.22***	.10***	.00		.02	.20***	.10***	.01
Total R^2				.34***					.33***

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 39

Summary of Hierarchical Regression Analysis to Examine Sources of Efficacy as a Mediator of the Link Between Teachers' Perceptions of Professional Community Features and Teachers' Efficacy for Student Engagement

Variables N = 172	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Step 4 ß	R^2 Change	Total R^2
		.10		.10***		.08**		.02	.30***
Step 1: Demographics									
Gender	-.06		-.08		-.13		-.13		
Department Size	-.08		-.06		.04		-.01		
School Dummy Code 1	-.08		-.01		-.05		-.07		
School Dummy Code 2	-.02		-.02		-.04		-.04		
School Dummy Code 3	-.06		-.03		-.09		-.09		
School Dummy Code 4	-.14		-.06		-.07		-.08		
School Dummy Code 5	-.20*		-.14		-.12		-.13		
School Dummy Code 6	-.17		-.09		-.10		-.11		
School Dummy Code 7	.10		.13		.12		.10		
School Dummy Code 8	-.03		.01		.01		.01		
Step 2: Teacher Variables									
Teaching Experience			.01		-.04		-.02		
Teachers' View of Ability			-.18*		-.15		-.13		
Student Performance			.26***		.22**		.19**		
Step 3: Community Variables									
Reflective Dialogue					.12		.08		
Shared Norms & Values					.21*		.19*		
Collaboration					-.04		-.07		
Deprivatized Practice					.15		.17		

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Table 39 (continued)

Variables	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Step 4 ß	R^2 Change
Step 4: Sources of Efficacy								
Vicarious Experience							-.06	
Verbal Persuasion							.16	

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

How does the relationship between teacher efficacy and professional community differ as a function of different measures designed to assess the teacher efficacy construct?

To answer this question, all analyses conducted with the Teacher Sense of Efficacy Scale (TSES) were also run with Gibson and Dembo's (1984) Teacher Efficacy Scale and the teacher efficacy assessment used in studies conducted by school effectiveness researchers (e.g., Lee et al., 1991; Newmann et al, 1989). Specifically, correlations, analyses of variance, and hierarchical regression analyses were performed to examine the relationship between teachers' efficacy beliefs (as measured by each scale) and teachers' perceptions of a departmental professional community. A comparison of the analyses with each teacher efficacy scale is discussed in this section.

Correlational analyses. Correlation coefficients of relations between teacher efficacy (as measured by the TSES, Gibson and Dembo, and school effectiveness researchers) and the study variables are shown in Table 40. Teachers' efficacy beliefs as measured with the TSES were significantly and positively related to professional community, the four professional community features, verbal persuasion, teachers' view of colleagues as proficient teaching models, teachers' perceptions of student performance, and teachers' years of experience. Conversely, teacher efficacy measured by the TSES was significantly and negatively related to teachers' view of student ability as incremental or fixed.

To examine whether correlation coefficients reflecting relationships between teacher efficacy (TSES) and the study variables were statistically different from those generated from the other efficacy measures, a test of differences between dependent correlation coefficients was performed (Glass & Hopkins, 1984). Specifically,

differences for correlation coefficients were tested between the TSES and the Gibson &

Dembo (1984) scale and between the TSES and the scale used by Newmann et al.

(1989) and Lee et al. (1991). Results from this test are presented in Table 41.

When compared to the other measures of the efficacy construct, the TSES data

is nearly identical to the data generated using the Gibson and Dembo measure.

Specifically, teachers' efficacy beliefs as measured with Gibson and Dembo's scale

were significantly and positively related to each of the same variables as the TSES and

were also significantly and negatively related to teachers' view of ability. Statistically,

the only correlation that is different between the two measures is that between teachers'

efficacy beliefs and teachers' perceptions of student performance.

Correlations with teachers' efficacy beliefs as measured by school effectiveness

researchers were slightly different. Using this scale, teachers' efficacy beliefs were

correlated significantly and positively with the same variables as the TSES, excluding

reflective dialogue and deprivatized practice. Furthermore, unlike teacher efficacy

measured by the other two scales, teacher efficacy as measured by this scale is

significantly and positively related to vicarious experience. The correlations showing

statistically significant differences between the TSES and the school effectiveness

measure are those between teacher efficacy and professional community and reflective

dialogue.

Mean differences in efficacy by gender, department, and school. Unlike the

TSES measurement of teacher efficacy, teachers' efficacy beliefs as measured by

Gibson and Dembo's scale significantly vary by gender, $\underline{F}$ (1, 193) = 8.85, $\underline{p}$ < .01, with

female teachers reporting higher levels of efficacy than males. Scores based on Gibson

and Dembo's measure of teacher efficacy did not vary significantly by department, F (6, 188) = .803, $p > .05$, or by school, F (8, 186) = 1.30, $p > .05$.

Teacher efficacy as operationalized by school effectiveness researchers matched that of efficacy measured by the TSES in that it did not vary significantly by gender, F (1, 195) = .005, $p > .05$, or by department, F (6, 190) = 1.27, $p > .05$. However, it did vary significantly by school, F (8, 188) = 4.98, $p < .001$. A post-hoc Scheffe test revealed that teachers in School #2 reported higher levels of efficacy than teachers in School #6. While overall efficacy, efficacy for instructional practices, and efficacy for student engagement (measured by the TSES) also varied by school, post-hoc tests in those analyses revealed no significant differences.

Testing the Mediation Model. Hierarchical regression analyses were performed to examine the various links in the model with each efficacy scale (see Appendix J for tables). These analyses confirmed teachers' perceptions of departmental professional community as predictors of teachers' efficacy beliefs as measured by the TSES. Specifically, shared norms and values and deprivatized practice were significant and positive predictors of these beliefs. Furthermore, the perception of professional community was a significant and positive predictor of both vicarious experience and verbal persuasion (a result that remained the same despite the teacher efficacy measure used). Finally, verbal persuasion was a significant and positive predictor of teacher efficacy.

In comparison, using Gibson and Dembo's teacher efficacy scale, teachers' perceptions of professional community was also a significant and positive predictor of efficacy ($p < .01$), as was shared norms and values ($p < .05$). However, neither

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vicarious experience nor verbal persuasion accounted for a significant amount of variance in efficacy beliefs. Teachers' years of experience and perceptions of student performance were consistently significant and positive predictors of teachers' efficacy.

When utilizing the teacher efficacy scale from the school effectiveness research, results showed that professional community predicted teachers' efficacy beliefs ($p <$ .05). Furthermore, perception of shared norms and values was a significant and positive predictor ($p < .001$). However, vicarious experience and verbal persuasion did not account for a significant amount of variance in teachers' efficacy. Once again, teachers' experience and perception of student performance were consistently significant and positive predictors of efficacy, whereas teachers' view of ability was a consistent, significant and negative predictor.

Table 40

Intercorrelations of Key Variables: Comparison of Teacher Efficacy Scales

	Teacher Sense of Efficacy Scale	Gibson & Dembo	School Effectiveness Researchers
Community Variables			
Professional Community	.30***	.27***	.19**
Reflective Dialogue	.19**	.17*	.04
Shared Norms & Values	.35***	.37***	.43***
Collaboration	.20**	.20**	.18**
Deprivatized Practice	.23**	.15*	.12
Sources of Efficacy			
Vicarious Experience	.11	.13	.18**
Verbal Persuasion	.22**	.19**	.22**
Proficient Model	.18*	.17*	.32***
Additional Variables			
Teachers' View of Ability	-.24***	-.21**	-.33***
Student Performance	.41***	.31***	.43***
Teaching Experience	.15*	.29***	.29***
School Size	-.06	-.08	.05
Department Size	-.05	-.14*	-.07

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 41

Test of Differences Between Dependent Correlation Coefficients

	Difference Between Teacher Sense of Efficacy Scale— Gibson & Dembo	Difference Between Teacher Sense of Efficacy Scale— School Effectiveness Researchers
	t	t
Community Variables		
Professional Community	.580	2.311*
Reflective Dialogue	.280	2.723**
Shared Norms & Values	.450	-.131
Collaboration	.419	1.532
Deprivatized Practice	.984	1.664
Sources of Efficacy		
Vicarious Experience	-.411	-.349
Verbal Persuasion	1.553	1.437
Proficient Model	.965	-1.204
Additional Variables		
Teachers' View of Ability	-.704	1.116
Student Performance	2.247*	.265
Teaching Experience	-1.835	-1.680
School Size	.272	-1.868
Department Size	.408	-.804

Note: * $p < .05$; ** $p < .01$

Chapter 5

Discussion

The potentially powerful nature of teachers' efficacy beliefs has not gone

unnoticed in the extant literature. Many researchers have documented positive

behaviors of teachers who believe they have the ability to perform the actions necessary

to positively influence student behavior (e.g., Ashton & Webb, 1986; Gibson & Dembo,

1984; Shachar & Shmuelevitz, 1997). However, fewer studies have gained a solid

understanding of antecedent factors to teachers' sense of efficacy, particularly when it

comes to those associated with the school environment in which teachers work. One

goal of this study was to examine the relationship between teachers' sense of efficacy

and aspects of the school context. Specifically, the nature of the relationship between

teachers' sense of efficacy and teachers' perceptions of a professional community

within their academic department was investigated. Whereas previous studies have

examined community variables at the school level in relation to efficacy (e.g., Bryk et

al., 1999; Louis et al., 1996), the current study expanded on existing literature to

investigate teachers' perceptions of community at a more proximal level (i.e., within

academic departments).

Another goal of this research was to gain empirical support for vicarious

experience and verbal persuasion as sources of teachers' efficacy information.

Bandura's (1977, 1986, 1997) theoretical discussions highlight vicarious experience and

verbal persuasion as two of the four important ways individuals can gather information

about their capabilities, yet very few studies have investigated these sources

empirically. Therefore, this study sought to examine vicarious experience and verbal

persuasion as mediators of the relationship between teachers' efficacy beliefs and perceptions of professional community.

Finally, the proliferation of research studies investigating teacher efficacy have produced numerous variations on the conceptualization and measurement of this construct (see Chapter 2 for a complete discussion). The final goal of this study was to examine if and how the relationship between teachers' efficacy and perceptions of professional community differed as a function of different measures designed to assess teacher efficacy. Specifically, current findings based on the Teacher Sense of Efficacy Scale (TSES) were compared with findings from Gibson and Dembo's (1984) Teacher Efficacy Scale (TES) as well as a four-item scale from by Newmann et al. (1989) and Lee et al. (1991).

This chapter will highlight the findings and implications of the current study. The discussion will consist of five main parts, (1) results pertaining to the mediation model tested in this study, (2) a discussion of the professional community construct, (3) additional factors relating to teachers' efficacy beliefs, (4) the comparison of findings for each teacher efficacy measure, and (5) strengths and limitations of the current study, as well as suggestions for the direction of future research.

Testing the Mediation Model

Analyses conducted in this study were designed to assess each of the major pathways in the proposed mediation model. In this section, findings and implications pertaining to each of the pathways will be discussed.

Do teachers' perceptions of a professional community predict their efficacy beliefs?

As expected, correlational analyses showed teacher efficacy to be positively

correlated with perceptions of professional community and its features. Specifically, high school teachers who reported that they perceived opportunities to discuss teaching with their departmental colleagues, observe their colleagues in the classroom, and collaborate with their colleagues on departmental activities also reported higher beliefs in their overall teaching capabilities, their abilities to manage a classroom, provide a variety of instructional practices, and engage students. Moreover, high school teachers who perceived that they shared norms and values related to teaching and learning with their departmental colleagues also reported higher beliefs in their overall abilities and abilities in each of the three efficacy dimensions.

Results of the hierarchical regression analyses revealed similar results. When examined as a whole, perceptions of a departmental professional community predicted high school teachers' overall efficacy, efficacy for classroom management, efficacy for instructional practices, and efficacy for student engagement. These findings have important implications for both theory and practice. For instance, the tenets of social cognitive theory state that individuals operate within social systems in which their personal characteristics, behavior, and surrounding environments interact (Bandura, 1986). Thus, teachers' self-efficacy, behavior, and school environment should be interdependent. Moreover, as suggested by Bandura's idea of triadic reciprocal determinism, how individuals interpret their capabilities in a given domain should be related to their perceived environment—a notion supported by current findings. For teachers in this sample, feelings of being efficacious in certain teaching tasks were related to their perceptions of their departmental environment. However, it is important to keep in mind that Bandura's theory suggests a reciprocal relationship between

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personal characteristics, behavior, and environment. Therefore, it is possible that efficacious teachers are more likely to seek out colleagues with whom they can share a professional community.

Social cognitive theory also suggests that how individuals feel about their abilities can affect their subsequent performances. Teachers felt better about their abilities in a wide range of teaching tasks when they felt as though they had others in their department with whom they could share norms, talk, observe, and learn about teaching. Because previous research has shown more positive teaching behaviors and student outcomes for efficacious teachers (e.g., Ashton & Webb, 1986; Anderson et al., 1988), it is possible that teachers and students would benefit from belonging to schools in which strong departmental professional communities exist.

Finally, these results illustrate the importance of high school teachers' feelings of community within their academic departments. Thus far, research on professional community has concentrated almost exclusively on school levels of influence. However, the current findings show that teachers in high schools do, in fact, perceive communities within smaller collegial networks within their school, that is, within their subject departments. It was within these departments that teachers perceived similarities with each other regarding teaching and learning and where they believed they had opportunities for discussion, reflection, and observation with colleagues. McLaughlin and Talbert (2001) came to similar conclusions in their analysis of professional communities within high school academic departments, stating that "subject departments are the hands-on professional 'home' for teachers, and departments can differ significantly both in collegiality and in beliefs about students,

subject matter, and 'good' practices" (pg. 46).

When professional community features were parceled out in the regression analyses, teachers' perceptions of shared norms and values within their department predicted teachers' overall efficacy and efficacy in each of the three dimensions, making it the strongest and most consistent professional community feature to predict efficacy. Additionally, perception of deprivatized practice was a significant predictor of teachers' efficacy for instructional practices. As these results reveal, teachers who work within departments where shared goals and priorities are clear, where teachers are in close agreement on departmental issues, and where teachers open up their classrooms to one another for the purposes of observation, clearly feel better about their abilities to carry out a variety of teaching tasks. Creating a departmental environment where such uniformity and collegiality exists could be advantageous for teachers and ultimately beneficial for students.

Contrary to expectation, neither reflective dialogue nor collaboration were significant independent predictors of teachers' self-efficacy. There are at least two possible reasons for this finding. First, correlation analyses showed teachers' perceptions of reflective dialogue to be highly and significantly correlated with teachers' perceptions of collaboration. Therefore, it is possible that these two variables shared enough variance as to limit their unique predictive power. This was not the case for perceptions of shared norms and values and deprivatized practice. Second, the non-significant findings for reflective dialogue and collaboration perceptions might also be found in the factor analysis results and scale creation. Despite the fact that three collaboration items loaded on other factors, subscales for professional community items

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were created based on subscales used in previous literature. Collaboration items loaded with items from each of the other three subscales, possibly diminishing its unique variance in the analyses.

The findings regarding collaboration and reflective dialogue differ from previous research examining schools' social organization in relation to teachers' efficacy beliefs. Previous results have revealed that schools in which teachers coordinated content with one another, were familiar with the content of courses taught by their school colleagues, and discussed content with one another had teachers who reported higher levels of self-efficacy than teachers who were not part of schools who engaged in cooperative and communicative activities (e.g., Newmann et al., 1989; Taylor & Tashakkori, 1995). A possible explanation could be found in methodological procedures. Different findings could be the result of different scales used to measure collaboration and reflective dialogue. Furthermore, the measure of teacher efficacy used in these studies also differed from the one used in the current study (see Chapter 2 for complete discussion). Finally, comparing across studies becomes difficult, as some studies standardize their variables (e.g., Louis, et al., 1996; Louis & Marks, 1998), whereas others do not (e.g., Bryk et al., 1999; Taylor & Tashakkori, 1995).

Previous studies have also found higher levels of faculty morale and sense of community within schools to be positively related to teachers' efficacy beliefs (e.g., Hoy & Woolfolk, 1993; Lee et al., 1991)—a finding corroborated in the current study. Whereas past studies examined morale and community at the school level, the powerful nature of community networks remains clear. Whether at the school level or at a more proximal level within departments, teachers clearly seem to benefit from having

colleagues with whom they can talk to, observe, trust, and feel a sense of connection.

Do teachers' perceptions of a professional community predict sources of efficacy?

Correlational analyses showed teachers' perceptions of a departmental professional community to be significantly and positively related to each of the sources of efficacy information (i.e., vicarious experience and verbal persuasion). Specifically, teachers' who reported that they perceived each of the professional community features within their department also reported that they learned about their own teaching capabilities through observation of and verbal encouragement from their departmental colleagues—a finding that was expected.

Similarly, regression analyses examining teachers' perception of an overall departmental professional community as a predictor of sources of efficacy information revealed significant results. Specifically, teachers' perceptions of professional community significantly predicted both vicarious experience and verbal persuasion. A closer examination of individual professional community features showed that perceptions of deprivatized practice predicted vicarious experience, whereas perceptions of reflective dialogue and collaboration predicted verbal persuasion.

Given the theoretical meaning of vicarious experience and verbal persuasion, these results seem appropriate. Vicarious experience involves observations of models that will enable teachers to learn about the possibilities of success or failure in a given teaching task without actually engaging in the task themselves. Deprivatized practice is a professional community feature that allows teachers to observe one another in the classroom, therefore making it feasible for teachers to learn vicariously from teaching models. Verbal persuasion occurs when teachers exchange dialogue in which they

express faith in one another's teaching capabilities. Reflective dialogue (conversations among teachers that focus on issues of teaching and learning) allows for the possibility that teachers will discuss and comment on each other's teaching abilities. Collaboration as a predictor of verbal persuasion is a slightly less intuitive finding, however, given the high correlation between reflective dialogue and collaboration, this result is not surprising. It could be that engaging in collaborative activities with others from their department gives teachers ample opportunity to engage in reflective dialogue, therefore creating an environment in which verbal persuasion can take place.

Teachers' perception of shared norms and values with departmental colleagues did not significantly predict either of the sources of efficacy information. Initially this finding seems surprising, however it is possible that shared norms and values make deprivatized practice, reflective dialogue, and collaboration more likely. Perhaps departments in which teachers work toward shared goals and priorities and share beliefs regarding the central mission of the department allow for a more collegial atmosphere where teachers can open up their classroom to departmental colleagues, have meaningful reflective conversations regarding teaching and learning, and collaborate together on departmental projects. These activities then account for a significant amount of variance in teachers' vicarious experiences and reports of verbal persuasion.

Finally, it is important to keep in mind the correlational nature of this study. Given that causal inferences cannot be made from these results, the possibility of vicarious experience and verbal persuasion influencing perceptions of professional community should be considered. It is possible that teachers who believe they learn from observational opportunities or from persuasive conversations from their

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colleagues, perceive or make opportunities for professional community features within their academic departments. In other words, teachers who believe they benefit from watching their colleagues teach or through in-depth discussions regarding teaching and learning might then create an environment within their department for observation and discussion to take place.

Do sources of teachers' efficacy information predict their sense of efficacy?

From the standpoint of social cognitive theory and, more specifically, self-efficacy theory, teachers' efficacy beliefs are informed through several efficacy sources: enactive mastery experiences, vicarious experience, verbal persuasion, and physiological states (Bandura, 1977). Correlational analyses showed verbal persuasion to be significantly and positively related to teachers' overall efficacy, efficacy for instructional practices, and efficacy for student engagement—a finding that is expected given Bandura's theoretical framework. Vicarious experience, however, was not significantly related to any of the efficacy variables. Regression analyses produced identical results, with verbal persuasion as a significant (yet moderate) predictor of teachers' overall efficacy, efficacy for instructional practices, and efficacy for student engagement and vicarious experience as a non-significant predictor of efficacy.

Several discussion points develop from these findings. First, it is important to note that while verbal persuasion predicted teachers' efficacy beliefs, teachers' perception of student performance was a stronger significant predictor of teachers' overall efficacy and efficacy in the three dimensions than was verbal persuasion. This also can be explained theoretically, as Bandura (1977) contends that the most powerful source from which efficacy beliefs are constructed is that of enactive mastery

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experiences. It can be argued that teachers' perceptions of how their students are performing on various tasks (i.e., following rules, paying attention, showing effort, showing interest, and maintaining an appropriate level of achievement) are direct experiences from which teachers can gauge their capabilities for classroom management, instructional practices, and student engagement. Therefore, the direct feedback that teachers receive from their every day interactions with students (in the form of various behavioral indices) becomes a strong predictor of teachers' efficacy and perhaps diminishes the effects of verbal persuasion and vicarious experience.

Secondly, the level of teaching experience of the teachers in the current sample could be a factor in the moderate significance of verbal persuasion and the non-significance of vicarious experience. Bandura (1997) contends that individuals are highly sensitive to vicarious information and verbal persuasion when they are uncertain about their own capabilities in a given domain. Therefore, teachers with less experience would be less likely to have prior teaching experiences from which to judge their capabilities and might be more likely to seek out models and be influenced by observation and verbal feedback than more experienced teachers. The teachers in this sample averaged 14.5 years of teaching experience, increasing the possibility that these teachers might observe and receive feedback from their colleagues but that this feedback no longer informs their sense of efficacy. Furthermore, teachers with more experience (as those are in this sample) might engage in various aspects of a professional community, but might do so in more of a mentor role.

<u>Do sources of teachers' efficacy information mediate the relationship between</u>

<u>perceptions of professional community and teachers' self-efficacy?</u>

Results of regression analyses revealed that vicarious experience and verbal persuasion do not mediate the relationship between teachers' perceptions of a departmental professional community and their sense of efficacy. Despite significant pathways within the model (e.g., professional community as a predictor of efficacy, professional community as a predictor of verbal persuasion, and verbal persuasion as a predictor of efficacy), the overall mediation model was not significant. Once again, perhaps this finding is due to the average level of teaching experience for this sample. It could be that these experienced teachers have reached a plateau in terms of their beliefs in their capabilities and no longer use observations, encouragement, or feedback from colleagues as a basis for their efficacy. Perhaps professional community mediates the relationship between teachers' sources of efficacy information (i.e., vicarious experience and verbal persuasion) and teachers' efficacy beliefs, such that teachers who feel they would benefit from observations and discussions centered around teaching seek out or create collegial community networks in order to obtain that information, which then informs their sense of efficacy. It is also important to note that one should be cautious regarding conclusions concerning mediation in a correlational study. In order to directly test mediation, longitudinal work with temporal sequencing would be needed.

Finally, there could be other variables outside the model that might account for variance in teachers' sense of efficacy. For instance, variables such as students actual performance (e.g., grades) and other teacher belief systems (e.g., valuing of the teaching

profession) might also be related to teachers' beliefs about their ability to manage their classrooms, engage their students, and integrate a variety of teaching strategies. Perhaps these variables, or others not measured in this study, would also predict teachers' efficacy beliefs and add to the variance accounted for by the current model.

<u>The Source of Professional Community</u>

Researchers have previously argued that certain organizational structures (e.g., school policies, physical proximity between teachers, communication structures) within a school contribute to the formation of school-wide professional communities (Bryk et al., 1999; Kruse et al., 1995). The question then becomes whether or not these same organizational structures facilitate professional communities in more proximal locations such as academic departments. Given that the current findings show no differences between schools on overall professional community or the four professional community features, one could conclude that school-level organizational structures are not responsible for helping teachers to create these small community networks within their departments. What then is the underlying phenomenon that contributes to teachers' perceptions that a professional community exists?

One answer might be that certain organizational structures exist at the departmental level to help facilitate shared norms and values, reflective dialogue, collaboration, and deprivatized practice. In other words, perhaps teachers create professional communities at the departmental level regardless of school-wide organizational structures. Whereas this is a possibility, the data for this study were analyzed across schools rather than within schools, so that conclusion cannot be firmly drawn. Another view might be that the source of professional community is subject-

specific. For instance, Foreign Language teachers (across schools) in this sample reported higher amounts of overall professional community, reflective dialogue, shared norms and values, and collaboration than teachers from other departments. Because these teachers work in the same subject area, but in different schools, it is possible that there is something unique to teaching foreign language that leads these teachers to create more opportunities for these community features than teachers in other subject areas. For instance, perhaps teaching foreign language is similar to teaching young children, in that the subject matter assumes no prior knowledge. These teachers are, therefore, starting from the beginning and building these students' skills in a subject in which these students have had no previous experience and perhaps this leads to more discussion, collaboration, and shared norms regarding student learning in these subject areas than in others.

If the source of community does, in fact, lie with certain norms associated with specific subject areas rather than within organizational structures at the school or departmental level, implementing policies and practices for the creation of departmental communities becomes difficult. When looking to facilitate communities, the issue becomes how these opportunities for observation, collaboration, and discussion develop. It could be that the department or school implements certain structures to create these opportunities or that certain subject areas are more of the source, but perhaps professional communities are more naturally occurring. In other words, perhaps professional communities are more of an informal network between teachers rather than more formal structures put in place to facilitate discussion, collaboration, and observation among teachers. If this is the case, devising ways to provide

opportunities for teachers to meet informally might be beneficial.

It is also important to speculate on the relationship between departmental and school-wide professional communities. For instance, how might one influence the other? It is possible that if departments within a school create professional community structures, the school as a whole might also show higher levels of these community structures than schools in which departments do not show this cohesiveness. On the other hand, professional community features within academic departments could also create an environment in which teachers find their support from departmental colleagues and therefore never branch out to create networks with other teachers from their school. In this case, schools would become a collection of fairly independent communities rather than a large, cohesive unit. The professional community literature would benefit from studies examining sources of professional community, the development of communities at the department and school level, and how departmental and school-wide communities are related to one another.

<div align="center">Comparison of Teacher Efficacy Measures</div>

Another goal of this study was to examine the relationship between teachers' efficacy beliefs and perceptions of professional community as a function of different measures designed to assess the teacher efficacy construct. Previous research examining teachers' self-efficacy has produced numerous conceptualizations of the construct and, as a result, measurement of teacher efficacy has been inconsistent and imprecise (see Chapter 2 for a complete discussion). This lack of measurement consistency is one possible cause for contradictory results found in much of the literature examining school context variables in relation to teachers' sense of efficacy.

Correlational analyses revealed almost identical findings for each of the three efficacy scales. However, slightly different results among the three scales were seen with each of the regression analyses. Most notably, neither vicarious experience nor verbal persuasion accounted for a significant amount of variance in teachers' efficacy beliefs when measured by Gibson and Dembo's scale or the Newmann et al. scale.

The similarity of results between the TSES and Gibson and Dembo's scale is not surprising. The teachers in this sample responded to the items pertaining to Gibson and Dembo's personal teaching efficacy subscale, and it was these items that Gibson and Dembo believed corresponded to Bandura's definition of self-efficacy. The TSES was created based on the same portion of Bandura's theory. Perhaps inconsistent results are obtained from the Gibson and Dembo scale when researchers include the outcome expectancy portion in their efficacy evaluations. The problem then becomes further exacerbated by Gibson and Dembo labeling those questions they believe measure outcome expectancy as *teaching efficacy* (also known as general teaching efficacy). This labeling creates confusion in the literature as researchers measure outcome expectancies, yet call them teaching efficacy. Further misuse of the scale occurrs when researchers combine the two subscales.

The results from the Newmann et al. and Lee et al. scale also differed slightly from the TSES. However, it is important to note that while the results from these scales are more similar than they are different, this measure was built from a different conceptualization of teacher efficacy and contains questions that lack face validity (e.g., "I usually look forward to each working day at this school," and "How much time do you feel satisfied with your job in this school?"). When building this scale, Lee and her

colleagues (1991) combined questions dealing with satisfaction and efficacy. Perhaps teachers in this sample who were satisfied with their job were also efficacious, therefore creating similar results for this scale and the TSES.

Despite the similarity of findings among the three scales, researchers should be cautious about using these scales interchangeably, as each one conceptualizes teacher efficacy differently. Both the TSES and Gibson and Dembo's personal efficacy items most accurately reflect the teacher efficacy construct as outlined in Bandura's self-efficacy theory. However, the TSES measures teachers' sense of efficacy in three dimensions, thereby highlighting the specificity of this construct. Therefore, researchers who want follow Bandura's theoretical framework should use either the TSES or the personal efficacy items of Gibson and Dembo's scale.

Additional Factors Relating to Teacher Efficacy

Whereas professional community predicted teachers' efficacy, other variables did account for a significant amount of variance in teachers' beliefs. For instance, teachers' view of ability was a consistent negative predictor of teachers' overall efficacy and efficacy for classroom management and student engagement, while teachers' years of experience was a significant positive predictor of teachers' efficacy for instructional practices. Furthermore, teachers' perceptions of student performance emerged as the strongest predictor of teachers' efficacy beliefs.

The finding linking teachers' view of ability to self-efficacy is especially noteworthy, as few studies (if any) have tested this link empirically. Given the definition of teacher efficacy as a teacher's belief in his or her ability to positively affect student performance, the fact that view of ability and self-efficacy are negatively related

comes as no surprise. In their discussion of "theories of intelligence," Dweck and Leggett (1988) point out that some people believe that intelligence is a fixed, uncontrollable trait, whereas others believe that intelligence is controllable and can be changed. As results of the current study show, the more teachers believe that children's intelligence is fixed, the lower their self-efficacy. Conversely, more efficacious teachers believe that their student's ability is malleable. It is evident that teachers who believe in the fluidity of intelligence feel more confident about their ability to contribute to changes in their students' performance. On the other hand, teachers who believe that their students' ability cannot be altered, logically lack a belief in their ability to help their students perform better.

Strengths, Limitations, and Directions for Future Research

This research contributes to the literature in several important ways. First, this study is well-grounded in a theoretical framework (e.g., social cognitive and self-efficacy theory). Many studies in the extant teacher efficacy literature—particularly studies investigating school context in relation to teachers' self-efficacy—lack the guidance of theory, thereby resulting in much variability in the conceptualization and measurement of the teacher efficacy construct. In contrast, in the current study teacher efficacy was defined and measured in a manner consistent with theoretical guidelines. Another strength of this study is the empirical assessment and inclusion of vicarious experience and verbal persuasion as predictors of self-efficacy. Previous teacher efficacy research has failed to consider these sources of efficacy information. Finally, this study branched out from existing professional community research to empirically investigate *proximal* professional communities rather than school-wide communities.

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Few researchers have discussed the existence of smaller communities within schools (e.g., McLaughlin & Talbert, 2001), therefore an empirical investigation of these departmental community networks was warranted.

This study investigated the relationship between teachers' self-efficacy and perceptions of professional community using a correlational design. Given the correlational nature of the study, the possibility of a bidirectional relationship between these variables exists, ruling out discussion of any causal inferences. As was noted earlier, it is possible that teachers who are more efficacious about their abilities to manage a classroom, utilize a variety of instructional practices, and engage students would be more likely to seek out departmental colleagues for the purposes of discussion, observation, and collaboration than would their non-efficacious counterparts. An experimental investigation of the directionality of this relationship would provide more definitive answers and could possibly inform policy in more specific ways.

On a similar note, this study examined both teacher efficacy and perceptions of professional community on an individual level. Whereas the goal of this study was to examine teachers' individual awareness of community networks within their department rather than investigate whether a professional community existed as a departmental attribute, proponents of multi-level analyses would argue for the importance of treating professional community as a group construct. It would be useful for future research to examine these research questions with multiple levels and compare results.

This study found evidence for teachers' perceptions of a departmental professional community to account for a significant amount of variance in their efficacy

beliefs. However, the mediation model was not significant. A follow-up study might examine if a mediational model would be confirmed at other levels of schooling, such as elementary or middle school. Studies over the last 70 years have pinpointed differences in organization and function within elementary and secondary schools (e.g., Herriott & Firestone, 1984; Parsons, 1959; Waller, 1932; Wilson, Herriott, & Firestone, 1991, cited in Louis et al., 1996). For example, elementary schools consist of classrooms in which one teacher is responsible for imparting information on a variety of subjects to the same group of students. In contrast, secondary schools' organization involves teachers as subject-specialists with multiple classes of different students. In addition to differences in organization, some have argued that elementary schools serve a socialization function, whereas a primary purpose of secondary schools is that of guiding individuals toward their future educational and occupational social status (Louis et al., 1996; Parsons, 1959). Finally, some researchers have argued that elementary and secondary schools might also differ in their development of professional communities (Louis et al., 1996). For example, Louis and her colleagues (1996) believe that at the elementary level, the absence of subject matter specializations might increase the amount of cohesion, shared tasks, and experiences among teachers (Louis et al., 1996).

If these characterizations are accurate, it is reasonable to speculate that elementary school teachers are connected through a common task of linking students' progress from one grade to the next. Preparing students for higher grades would require teachers to know what occurs in higher-level classrooms and require teachers to talk to each other about strategies to ensure a smooth grade transition. In contrast, because teachers at the secondary level are more compartmentalized, for instance are segmented

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departmentally or by teams, some would argue that this might reduce the level of dialogue, collaboration, and deprivatized practice among the secondary school population (Louis et al., 1996), however the results of this study show differently.

Although several studies have examined features of professional communities within schools, only one has investigated possible school level differences, finding that teachers in elementary schools have a stronger sense of school-wide professional community than teachers in secondary schools (Louis et al., 1996). Studies examining teachers' efficacy beliefs at the elementary and secondary (e.g., middle school and junior high) level have also found efficacy beliefs to be lower in secondary school teachers (e.g., Midgley, Anderman, & Hicks, 1995; Midgley, Feldlaufer, & Eccles, 1988). Therefore, future research should examine and compare the degree to which features of a professional community exist in elementary and secondary schools (both school-wide and more proximal communities) and then further investigate the relationship between the existence of a professional community and teachers' efficacy beliefs.

The literature would also benefit from research examining the role of teaching experience in this model. Given the possibility that teachers might utilize professional communities differently, depending upon their level of experience, investigating a possible moderating role of experience level would be beneficial. On average, teachers in this study had many years of experience in the classroom. Perhaps a study examining the perceptions of professional community and sense of efficacy of beginning teachers would help to highlight the role of vicarious experience and verbal persuasion in this relationship.

Teachers in this sample also had relatively high efficacy beliefs. The average level of teachers' overall efficacy was 7.02, with a range of 4.58 to 9 (on a scale of 1 to 9), which indicates that this sample of teachers felt they could exert "some influence" to "quite a bit" of influence on student performance in different areas. It could be that the procedure for this study elicited somewhat of a skewed sample. Because data collection took place in teachers' lounges, it is possible that teachers who came in to fill out surveys were teachers who spent time in the lounge with colleagues during breaks and lunch hours. This time could then be used for reflective dialogue and collaboration. Teachers who spent their breaks and lunches without other colleagues could have been inadvertently excluded because of the location of data collection. Furthermore, it is also possible that teachers who were more efficacious were more likely to complete the survey, due to their high belief in their teaching abilities. Perhaps teachers with lower levels of efficacy chose not to share their thoughts, because of their low beliefs in their ability to carry out a variety of teaching tasks.

Furthermore, researchers need to conduct additional empirical investigations of vicarious experience and verbal persuasion. This study is the first known research to measure empirically the degree to which teachers' learn about their capabilities through the observation or the verbal persuasion of others. The sources of efficacy information outlined in Bandura's theory are integral to teacher efficacy discussions, and researchers have commonly examined teachers' direct performance accomplishments in relation to efficacy beliefs. While performance accomplishments are the most direct source of efficacy information (Bandura, 1986), the field would benefit from more information on how the other sources play a role in teachers' beliefs in their capabilities. Moreover,

researchers should further investigate teachers' views of their colleagues as proficient

teaching models and how these views possibly moderate the relationship between

vicarious experience, verbal persuasion and teachers' self-efficacy. Bandura (1997) and

others (e.g., Schunk, 1987) have stressed that the degree to which vicarious experience

and verbal persuasion can inform an individual's efficacy beliefs is likely to depend on

whether or not the individual believes that the model is knowledgeable, proficient, and

similar to himself.

Whereas a full examination of this variable was beyond the scope of this study,

preliminary investigations did reveal that teachers' ratings of their colleagues as

proficient models were significantly and positively correlated with the key variables of

interest in this study (e.g., efficacy variables, community variables, sources of efficacy

variables). In addition, teachers' views of their departmental colleagues as proficient

models was a significant and positive predictor of teachers' overall efficacy and

efficacy for instructional practices, but did not moderate the relationship between

teachers' sources of efficacy information and their self-efficacy beliefs. Furthermore,

teachers' perceptions of a professional community, as well as perceptions of shared

norms and values, collaboration, and deprivatized practice within their department

accounted for a significant amount of variance in teachers' feelings about their

colleagues as proficient teaching models. These results warrant further in-depth

investigation.

Finally, additional variable such as student outcomes also need to be

incorporated into models of professional community and teacher efficacy. This study

provided evidence for a relationship between teachers' perceptions of departmental

professional community and teachers' efficacy. However, investigations of whether or not having teachers work within professional communities is advantageous for students are also needed. Research has shown positive efficacy beliefs to be conducive to positive teaching behaviors and positive student outcomes, however, no research has completely explored the processes by which participation in a departmental professional community might enhance student performance.

Conclusions

The results of this study provide evidence of a relationship between teachers' perceptions of a professional community within their academic department, teachers' overall efficacy, efficacy for classroom management, efficacy for instructional practices, and efficacy for student engagement. When professional community features were examined separately, teachers' perceptions of shared norms and values also predicted all dimensions of efficacy, and perceptions of deprivatized practice within the department predicted teachers' efficacy for instructional practices. Furthermore, perceptions of a departmental professional community predicted the degree to which teachers learn through observation of and persuasive comments from their colleagues, with perceptions of deprivatized practice predicting teachers' vicarious experiences and reflective dialogue and collaboration predicting teachers' reports of verbal persuasion. Finally, the amount of verbal persuasion teachers' felt they received from their departmental colleagues predicted teachers' overall self-efficacy.

This study contributes to the field's overall understanding of factors that enhance teachers' sense of efficacy. In a time when much focus is put on teacher effectiveness and accountability within schools, this research can shed light on ways to

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improve teachers' beliefs in their own capabilities. It is important that the educational

community begin to discover factors that might improve teachers' self-efficacy, as these

beliefs have been shown to influence teaching practices and teacher behavior. To this

same end, research should continue to examine school contextual influences on teacher

efficacy, in order to move toward a solid understanding of how schools can improve

teachers' beliefs about themselves, for the ultimate benefit of the students they serve.

Appendix A

Teacher Informed Consent Letter

The purpose of this research is to investigate aspects of the school environment and
their relation to teachers' beliefs in their abilities.

As a participant in this study, I understand that I will be asked to fill out a questionnaire,
which should take approximately 15-20 minutes to complete. The questions will ask
me about my teaching, my professional relationship with other teachers in my school,
and my beliefs about student learning.

All information collected in this study is confidential, and my identity will never be
revealed to my school principal, my colleagues, or in the reporting of any results. There
are no foreseeable risks to the individuals who participate in this study; therefore, there
are no costs to me in any way. This project has been reviewed according to The
University of Maryland procedures governing participation in research.

I understand that participation in this study is entirely voluntary. I understand that I am
free to ask questions or withdraw from participation at any time without penalty.

By signing below, I state that I am over 18 years of age and wish to participate in the
above named research project being conducted by Lisa Looney at the Graduate School,
University of Maryland, College Park, Department of Human Development.

NAME OF PARTICIPANT   _____

SIGNATURE OF PARTICIPANT   _____

DATE   _____

Lisa Looney, Graduate Student
Dr. Kathryn Wentzel, Faculty Advisor
Department of Human Development
3304 Benjamin Building
University of Maryland
College Park, MD 20742
(301) 405-2827

Principal Informed Consent Letter

The purpose of this research is to investigate aspects of the school environment and their relation to teachers' beliefs in their abilities.

As a participant in this study, I understand that I will be asked to fill out a questionnaire, which should take approximately 5 minutes to complete. The questions will ask me to provide demographic / background information regarding my school. I understand that the information I provide will be kept confidential and will be seen only by the researcher.

All information collected in this study is confidential, and my identity will never be revealed to my colleagues, teachers, or in the reporting of any results. There are no foreseeable risks to the individuals who participate in this study; therefore, there are no costs to me in any way. This project has been reviewed according to The University of Maryland procedures governing participation in research.

I understand that participation in this study is entirely voluntary. I understand that I am free to ask questions or withdraw from participation at any time without penalty.

By signing below, I state that I am over 18 years of age and wish to participate in the above named research project being conducted by Lisa Looney at the Graduate School, University of Maryland, College Park, Department of Human Development.

NAME OF PARTICIPANT   _____

SIGNATURE OF PARTICIPANT   _____

DATE   _____

Lisa Looney, Graduate Student
Dr. Kathryn Wentzel, Faculty Advisor
Department of Human Development
3304 Benjamin Building
University of Maryland
College Park, MD 20742
(301) 405-2827

Appendix B

Teacher Sense of Efficacy Scale

Please indicate your opinion about each of the statements below in reference to your current teaching situation.

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal
1. How much can you do to get through to the most difficult students?	1	2	3	4	5	6	7	8	9
2. To what extent can you make your expectations clear about student behavior?	1	2	3	4	5	6	7	8	9
3. How well can you establish routines and keep activities running smoothly?	1	2	3	4	5	6	7	8	9
4. How much can you get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
5. How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
6. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
7. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
8. How much can you do to foster student creativity?	1	2	3	4	5	6	7	8	9
9. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
10. How much can you do to get students to believe they can do well on school work?	1	2	3	4	5	6	7	8	9
11. How much can you do to help your students think critically?	1	2	3	4	5	6	7	8	9
12. How well can you respond to defiant students?	1	2	3	4	5	6	7	8	9

	Nothing		Very Little		Some Influence		Quite a Bit		A Great Deal

13. How well can you establish a classroom management system with each group of students?

    1 2 3 4 5 6 7 8 9

14. How much can you gauge comprehension of what you have taught?

    1 2 3 4 5 6 7 8 9

15. How well can you keep a few problem students from ruining an entire lesson?

    1 2 3 4 5 6 7 8 9

16. How well can you provide appropriate challenges for very capable students?

    1 2 3 4 5 6 7 8 9

17. How much can you do to improve the understanding of a student who is failing?

    1 2 3 4 5 6 7 8 9

18. How much can you do to calm a student who is disruptive or noisy?

    1 2 3 4 5 6 7 8 9

19. How much can you do to adjust your lessons to the proper level for individual students?

    1 2 3 4 5 6 7 8 9

20. To what extent can you craft good questions for your students?

    1 2 3 4 5 6 7 8 9

21. How well can you respond to difficult questions from your students?

    1 2 3 4 5 6 7 8 9

22. To what extent can you use a variety of assessment strategies?

    1 2 3 4 5 6 7 8 9

23. To what extent can you provide an alternative explanation or example when students are confused?

    1 2 3 4 5 6 7 8 9

24. How well can you implement alternative strategies in your classroom?

    1 2 3 4 5 6 7 8 9

Appendix C

Teacher Efficacy Scale (Personal Efficacy Items)

Gibson & Dembo (1984)

Please indicate your opinion about each of the statements below in reference to your current teaching situation.

	Strongly Disagree	Moderately Disagree	Disagree slightly more than Agree	Agree slightly more than Disagree	Moderately Agree	Strongly Agree
1. When a student does better than usual, many times it is because I exerted a little extra effort.	1	2	3	4	5	6
2. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	1	2	3	4	5	6
3. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.	1	2	3	4	5	6
4. When I really try, I can get through to the most difficult students.	1	2	3	4	5	6
5. When the grades of my students improve, it is usually because I found more effective teaching approaches.	1	2	3	4	5	6
6. If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.	1	2	3	4	5	6
7. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	1	2	3	4	5	6
8. If a student in my class becomes disruptive or noisy, I feel assured that I know some techniques to redirect him quickly.	1	2	3	4	5	6
9. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	1	2	3	4	5	6

Appendix D

School Effectiveness Teacher Efficacy Items

Newmann et al. (1989) and Lee et al. (1991)

Please indicate your opinion about each of the statements below in reference to your current teaching situation.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1. I usually look forward to each working day at this school.	1	2	3	4	5	6
2. I sometimes feel it is a waste of time to try to do my best as a teacher.	1	2	3	4	5	6

	Almost Never			All of the Time
3. How much of the time do you feel satisfied with your job in this school?	1	2	3	4

	Not Successful			Very Successful
4. To what extent do you feel successful in providing the kind of education you would like to provide for most of your students?	1	2	3	4

Appendix E

Professional Community Index

In this set of questions and statements, think about the teachers within your DEPARTMENT.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1. Most of the teachers in my department share my beliefs about what the central mission of the school should be.	1	2	3	4	5	6
2. Goals and priorities for our department are clear.	1	2	3	4	5	6
3. In my department, the teachers and the administration are in close agreement on school discipline policy items.	1	2	3	4	5	6
4. There is a great deal of cooperative effort among members of my department.	1	2	3	4	5	6
5. I make a conscious effort to coordinate the content of my courses with other teachers in my department.	1	2	3	4	5	6

	Never	Once	Twice	3-4 Times	5-9 Times	10 or More Times
6. How often since the beginning of the current school year did you receive useful suggestions for curriculum materials from teachers in your department?	1	2	3	4	5	6
7. How often since the beginning of the current school year did you receive useful suggestions for teaching techniques or student activities from teachers in your department?	1	2	3	4	5	6
8. Except for monitoring student teachers or substitute teachers, how often have you visited another teacher's classroom within your department to observe and discuss their teaching since the beginning of the current school year?	1	2	3	4	5	6

	Never	Once	Twice	3-4 Times	5-9 Times	10 or More Times
9. Since the beginning of the current school year, how often has another teacher from your department come to your classroom to observe your teaching (exclude visits by student teachers or those required for formal evaluations)?	1	2	3	4	5	6
10. How often since the beginning of the current school year did you receive meaningful feedback (formally or informally) on your performance from supervisors or teachers within your department?	1	2	3	4	5	6
11. How often since the beginning of the current school year did you meet with teachers from your department to discuss specific teaching behaviors?	1	2	3	4	5	6

How often since the beginning of the current school year have you had conversations with teachers from your department about:	Never	Once	Twice	3-4 Times	5-9 Times	10 or More Times
12. The goals of the department?	1	2	3	4	5	6
13. Development of new curriculum?	1	2	3	4	5	6
14. Managing classroom behavior?	1	2	3	4	5	6
15. What helps students learn best?	1	2	3	4	5	6
16. Student engagement and motivation?	1	2	3	4	5	6
17. Instructional practices?	1	2	3	4	5	6

	Less than 15 Minutes	15-29 Minutes	30-59 Minutes	1 Hour or More but Less Than 5	5 Hours or More but Less Than 10	10 Hours or More

18. Since the beginning of the current school year, about how much time per month have you spent meeting with other teachers in your department on lesson planning, curriculum development, guidance and counseling, evaluation of programs, or other collaborative work related to instruction?

    1   2   3   4   5   6

	Never	Once or Twice a Year	3 or More Times a Year

19. How often do two or more other teachers from your department regularly observe your students' academic performance or review their grades or test scores?

    1   2   3

	Yes	No

20. Do you meet regularly with other teachers in your department?

    1   2

If you answered YES to the previous question, please answer questions 21-25.

If you answered NO to the previous question, please move on to the next section.

21. How long is a typical meeting? _____ Minutes

	Less Than Once/Week	Once/Week	Twice/Week	3-4 Times/Week	5 or More Times/Week
22. How often do you meet?	1	2	3	4	5

In a typical meeting with other teachers in your department, about how much time is spent on:	None	Less Than Half	More Than Half
23. Coordinating content (teachers decide common themes, suggest related materials and activities to guide instruction)?	1	2	3
24. Diagnosing individual students (teachers discuss problems of specific students and arrange appropriate help)?	1	2	3
25. Analyzing teaching (teachers discuss specific teaching practices and behaviors of teachers)?	1	2	3

Appendix F

Sources of Efficacy Information Scale

***When responding to the following statements, think about teachers within your
DEPARTMENT.***

		Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1.	I believe teachers in my department are knowledgeable about how to engage students.	1	2	3	4	5	6
2.	I believe teachers in my department are knowledgeable about classroom management.	1	2	3	4	5	6
3.	I believe teachers in my department are knowledgeable about instructional practices / techniques.	1	2	3	4	5	6
4.	I believe I can learn (have learned) a lot from teachers in my department about better ways to engage my students.	1	2	3	4	5	6
5.	I believe I can learn (have learned) a lot from teachers in my department about better ways to manage my classroom.	1	2	3	4	5	6
6.	I believe I can learn (have learned) a lot from teachers in my department about better ways to incorporate various instructional practices / techniques into my classroom.	1	2	3	4	5	6
7.	I believe teachers in my department are very capable of engaging their students.	1	2	3	4	5	6
8.	I believe teachers in my department are very capable of managing their classrooms.	1	2	3	4	5	6
9.	I believe teachers in my department are very capable of incorporating a variety of instructional practices / techniques in their classrooms.	1	2	3	4	5	6
10.	I believe teachers in my department and I are very similar in our ability to engage students in the classroom.	1	2	3	4	5	6

		Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
11.	I believe teachers in my department and I are very similar in our ability to manage our classrooms.	1	2	3	4	5	6
12.	I believe teachers in my department and I are very similar in our ability to incorporate a variety of instructional practices / techniques in our classrooms.	1	2	3	4	5	6
13.	I feel I have the ability to engage students in the classroom.*	1	2	3	4	5	6
14.	I feel I have the ability to manage my classroom.*	1	2	3	4	5	6
15.	I feel I have the ability to incorporate a variety of instructional practices / techniques in my classroom.*	1	2	3	4	5	6
16.	I feel that I am a capable teacher.*	1	2	3	4	5	6
17.	I learn (have learned) better instructional practices / techniques by observing teachers from my department in the classroom.	1	2	3	4	5	6
18.	I learn (have learned) better classroom management techniques by observing teachers from my department in the classroom.	1	2	3	4	5	6
19.	I learn (have learned) better ways to engage my students by observing teachers from my department in the classroom.	1	2	3	4	5	6
20.	I am able to evaluate my own teaching ability by observing other teachers from my department.	1	2	3	4	5	6
21.	When I see colleagues from my department teach, I reflect on my own teaching abilities.	1	2	3	4	5	6
22.	Watching colleagues from my department teach helps me (has helped me) to become a more capable teacher.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
23. By observing other teachers from my department manage their classroom, I learn (have learned) better classroom management techniques.	1	2	3	4	5	6
24. By observing other teachers from my department engage their students, I learn (have learned) better techniques for engaging my students.	1	2	3	4	5	6
25. By observing other teachers from my department use a variety of instructional practices, I learn (have learned) better instructional techniques to use in my classroom.	1	2	3	4	5	6
26. Other teachers from my department tell me that I am a good teacher.	1	2	3	4	5	6
27. When I am feeling down about my teaching, teachers from my department help me to feel better about my abilities.	1	2	3	4	5	6
28. Teachers from my department compliment me on my teaching abilities.	1	2	3	4	5	6
29. Teachers from my department tell me that I have good classroom management skills.	1	2	3	4	5	6
30. Teachers from my department tell me that I am good at engaging my students.	1	2	3	4	5	6
31. Teachers from my department tell me that I use effective instructional techniques.	1	2	3	4	5	6
32. I feel I have the ability to engage students in the classroom, because teachers from my department tell me that I do.	1	2	3	4	5	6
33. I feel I have the ability to manage my classroom, because teachers from my department tell me that I do.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
34. I feel I have the ability to incorporate a variety of instructional practices / techniques in my classroom, because teachers from my department tell me that I do.	1	2	3	4	5	6
35. I feel that I am a capable teacher, because teachers from my department tell me that I am.	1	2	3	4	5	6

* Items 13-16 were removed from the analysis, as factor analysis showed them to load on multiple factors

Appendix G

Teacher Demographic Questionnaire

Tell Us About Yourself

Sex	_____ Male _____ Female
Race	_____
How long have you been teaching?	_____ Years _____ Months
How long have you been teaching high school?	_____ Years _____ Months
What grade level(s) do you currently teach?	_____
At which school do you teach?	_____
How long have you been a teacher at this school?	_____ Years _____ Months
To which school department do you belong?	_____ English
	_____ Math
	_____ Science
	_____ Social Studies
	_____ Other _____
What subject(s) do you teach?	_____

Appendix H

Teachers' Beliefs About Student Ability

		Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1.	How much a student learns depends more on their natural ability than on my teaching strategies.	1	2	3	4	5	6
2.	Children have a certain amount of intelligence, and you really can't do much to change it.	1	2	3	4	5	6
3.	If students are having trouble with the subject, they will probably continue to have trouble with it in the future.	1	2	3	4	5	6
4.	Children's intelligence is something about them that you can't change very much.	1	2	3	4	5	6
5.	Some students are born having more learning potential than others.	1	2	3	4	5	6
6.	Children can learn new things, but you can't really change their basic intelligence.	1	2	3	4	5	6

In comparison to previous school years, how would you rate the level of difficulty in getting THIS YEAR'S students to:

		Very Difficult	Difficult	Easy	Very Easy
1.	Follow classroom rules	1	2	3	4
2.	Pay attention / stay focused in class	1	2	3	4
3.	Put forth effort on assignments	1	2	3	4
4.	Be interested in class material	1	2	3	4
5.	Maintain an appropriate level of achievement for their grade level	1	2	3	4

Appendix I

Principals' Questionnaire

Please provide the following background information regarding your school

Number of students   _____

Number of teachers   _____

Teachers' average class size   _____

Percentage of faculty turnover   _____

Approximately what percentage of your teachers are:

Caucasian: _____

African-American: _____

Hispanic: _____

Asian: _____

Approximately how many teachers are within the following departments:

English: _____

Math: _____

Science: _____

Social Studies: _____

Art: _____

Foreign Language: _____

Physical Education: _____

Special Education: _____

Business Education: _____

Other: _____

Regression Tables for Gibson & Dembo (1984) and Newmann et al. (1989) Teacher Efficacy Measures

Table 42

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Self-Efficacy as measured by Gibson & Dembo (1984)

Variables N=178	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.05*		.18***		.03**	.27***
Step 1: Demographics							
Gender	.18**		.19**		.16*		
Department Size	-.11		-.12		-.07		
School Size	-.01		-.01		-.02		
Step 2: Teacher Variables							
Teaching Experience			.26***		.24***		
Teachers' View of Ability			-.14		-.13		
Student Performance			.24***		.23***		
Step 3: Professional Community					.19**		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 43

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Self-Efficacy as measured by Gibson & Dembo (1984)

Variables N=178	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.05*		.18***		.05*	.28*
Step 1: Demographics							
Gender	.18**		.19**		.14*		
Department Size	-.11		-.12		-.05		
School Size	-.01		-.01		-.02		
Step 2: Teacher Variables							
Teaching Experience			.26***		.21**		
Teachers' View of Ability			-.14		-.11		
Student Performance			.24***		.21**		
Step 3: Community Variables							
Reflective Dialogue					.05		
Shared Norms & Values					.20*		
Collaboration					-.00		
Deprivatized Practice					.08		

Note: * p < .05; ** p < .01; *** p < .001

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Table 44

Summary of Hierarchical Regression Analysis for Teachers' Sources of Efficacy Information as Predictors of Teachers' Self-Efficacy as measured by Gibson & Dembo (1984)

Variables N=178	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.05*		.18***		.02	.25***
Step 1: Demographics							
Gender	.18**		.18**		.18**		
Department Size	-.13		-.10		-.09		
School Size	-.01		-.03		-.03		
Step 2: Teacher Variables							
Teaching Experience			.29***		.30***		
Teachers' View of Ability			-.12		-.10		
Student Performance			.22**		.20**		
Step 3: Sources of Efficacy							
Vicarious Experience					.04		
Verbal Persuasion					.13		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Table 45

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community as a Predictor of Teachers' Self-Efficacy as measured by Newmann et al. (1989)

Variables N=180	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.18***		.23***		.02*	.43***
Step 1: Demographics							
Gender	.01		-.04		-.06		
Department Size	-.07		-.03		.02		
School Dummy Code 1	-.24*		-.13		-.15		
School Dummy Code 2	.11		.09		.09		
School Dummy Code 3	.05		.10		.08		
School Dummy Code 4	-.10		.03		.03		
School Dummy Code 5	-.20*		-.09		-.08		
School Dummy Code 6	-.25**		-.13		-.15*		
School Dummy Code 7	-.07		-.04		-.03		
School Dummy Code 8	.08		.14		.14		
Step 2: Teacher Variables							
Teaching Experience			.17**		.15**		
Teachers' View of Ability			-.32***		-.32***		
Student Performance			.29***		.27***		
Step 3: Professional Community					.14*		

Note: * p < .05; ** p < .01; *** p < .001

Table 46

Summary of Hierarchical Regression Analysis for Teachers' Perceptions of Professional Community Features as Predictors of Teachers' Self-Efficacy as measured by Newmann et al. (1989)

Variables N=180	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.18***		.23***		.07***	.48***
Step 1: Demographics							
Gender	.01		-.04		-.08		
Department Size	-.07		-.03		.03		
School Dummy Code 1	-.24*		-.13		-.18*		
School Dummy Code 2	.11		.09		.02		
School Dummy Code 3	.05		.10		.01		
School Dummy Code 4	-.10		.03		-.00		
School Dummy Code 5	.20*		-.09		-.10		
School Dummy Code 6	-.25**		-.13		-.14		
School Dummy Code 7	-.07		-.04		-.08		
School Dummy Code 8	.08		.14		.09		
Step 2: Teacher Variables							
Teaching Experience			.17**		.12*		
Teachers' View of Ability			-.32***		-.31***		
Student Performance			.29***		.23***		
Step 3: Community Variables							
Reflective Dialogue					-.11		
Shared Norms & Values					.29***		
Collaboration					.02		
Deprivatized Practice					.14		

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

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Table 47

Summary of Hierarchical Regression Analysis for Teachers' Sources of Efficacy Information as Predictors of Teachers' Self-Efficacy as measured by Newmann et al. (1989)

Variables N=179	Step 1 ß	R^2 Change	Step 2 ß	R^2 Change	Step 3 ß	R^2 Change	Total R^2
		.02		.34***		.02*	.38***
Step 1: Demographics							
Gender	-.01		-.06		-.05		
Department Size	-.14		-.06		-.04		
School Size	.12		.13		.12		
Step 2: Teacher Variables							
Teaching Experience			.23***		.24***		
Teachers' View of Ability			-.34***		-.32***		
Student Performance			.36***		.33***		
Step 3: Sources of Efficacy							
Vicarious Experience					.09		
Verbal Persuasion					.11		

Note: * p < .05; ** p < .01; *** p < .001

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