THE IMPACT OF AN ENGLISH AS A SECOND LANGUAGE PROFESSIONAL DEVELOPMENT PROGRAM: A SOCIAL COGNITIVE APPROACH

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ABSTRACT

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The Impact of an English as a Second Language Professional Development Program:
A Social Cognitive Approach
(Under the direction of Dr. Audrey L. Heining-Boynton)

The purpose of this study was to investigate the impact of professional development programs for English as a Second Language (ESL) teachers on their classroom practice, and how teacher efficacy and organizational support at the school level relate to this process by interacting with years of teaching experience. The Modified Teacher Efficacy Scale, the Organizational Support Scale, and the Impact Scale were used to collect self-reported data on teacher efficacy, organizational support, and the impact of professional development, respectively. The Teacher Background Questionnaire was used to collect demographic data as well as information on years of teaching experience.

The population of this study comprised of 232 participants from the Carolina Academic Consortium (CAC) and 68 participants from Consortium for South and North Carolina (CSNC). These two identical professional development programs provided funding for currently licensed teachers from both North and South Carolina that led to add-on ESL licensure. Among the 232 CAC participants, 145 met the criterion to participate in this study. Among the 68 CSNC participants, 29 were qualified for the present study. Of those who were invited to participate in the study, 90 CAC and 24 CSNC participants responded.

Multiple regression analyses were used to explore the effects of teacher efficacy and organizational support on predicting the impact of professional development. With the use of a $p < 0.05$ criterion, the two independent variables (i.e., teacher efficacy and organizational support) both reached statistical significance in predicting the impact of professional development. The results from these analyses attest to the tenets of the social cognitive theory. Teachers with strong efficacy beliefs reported to having implemented more of what they had acquired from professional development. Furthermore, organizational support predicted the level of impact above and beyond teacher efficacy. These two major variables evidenced their effects even after controlling for years of teaching experience and did not interact with the latter teacher characteristic.

To my mother who taught me to always believe in myself
even when it seems almost impossible to do so,
to my husband who showed me that believing in others
could bring such rewarding consequences,
and to my two children who inspire me to believe in miracles everyday of my life.

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CHAPTER ONE

INTRODUCTION

A. Background and Rationale

It is widely believed and promoted that one of the best ways to improve the teaching and learning process is by providing teachers with quality professional development experiences. The centrality of professional development in improving education is expressed by many researchers (e.g., Borko, 2004; Guskey, 1986; Guskey & Huberman, 1995; Sparks, 1983) who delve into the complex process of change. Recognizing its importance, many models of professional development have been proposed, and elements that contribute to the effectiveness of such programs have been identified extensively (Joyce & Showers, 1980).

Despite this recognition, as Loucks and Melle (1982) have pointed out, the specific impact of professional development has generally not been systematically investigated. This lack of investigation is even more evident when the focus of impact is on the change in teachers' professional practices (Guskey & Sparks, 1991).

This is a limitation that needs to be overcome by future research because, as Guskey (2000) and Fullan (1982) note, the real challenge of professional development is posed only after the implementation process has begun. As important as it is for teachers to have a quality educational experience and acquire many innovative instructional techniques during the participating phase, the more fundamental concern should be whether these

new knowledge and skills get implemented into the classrooms. This aspect is what is lacking in most studies on professional development to date.

The importance of focusing on teachers' use of knowledge and skills becomes clearer when specific classrooms are considered as contextual factors influencing the actual implementation of what teachers know and are able to do. For example, the efficacy beliefs of teachers, the strongest predictor of their behavior (Bandura, 1977, 1991, 1993, 1997), are likely to depend on the specific teaching environment. This is more important than ever when the changing nature of current classrooms in the US is taken into account.

As many books on educating second language or language minority children will testify (e.g., Ariza, Morales-Jones, Yahya, & Zainuddin, 2002; Leyba, 1994; Samway & McKeon, 1999; Scarcella, 1990), today's classrooms are characterized by ever-increasing diversity, both linguistically and culturally. In the context of emphasizing the urgency of professional development, McLaughlin (1994) argues that today's students are fundamentally different from those of yesterday's in terms of cultural perspectives, languages, family circumstances, values, and mores they bring to their classrooms. These conditions create unprecedented demands for teachers to develop knowledge and skills (Smylie & Conyers, 1991) to meet the new challenges in their classrooms.

The diversity mentioned above complicates the entire process of teaching and learning, and any other factors emanating from this process, all of which are inherently complex and multi-dimensional in their interrelationships. Additionally, when considering that acquisition of knowledge may not directly transfer to performance based on that knowledge (e.g., Bandura, 1993; Guskey, 2000), focusing on the impact of professional

development on classroom teaching practices calls for consideration of factors that may enhance or inhibit the transfer process.

B. Purpose and Significance of the Study

As previously mentioned, although quality teaching is widely believed to be the key to enhancing student learning (Darling-Hammond, 1997) and many diverse attempts to provide quality teaching via professional development have been made, an exploration into what really happens in the classroom afterwards has been neglected (Frechtling, Sharp, Carey, & Vaden-Kierman, 1995). Teachers' acquired knowledge and skills may not translate into their classroom practice for various reasons. Among those reasons, theory and research consistently point to two of the most fundamental ones: teacher efficacy and organizational support (e.g., Smylie, 1988).

Despite the agreement on the importance of these two factors, research has provided conflicting results on the relative importance of these two factors. For example, Smylie (1988) has not found school-level variables to be important in influencing the impact of professional development programs, which he himself admits is contradictory to most other research findings.

In addition, the construct of teacher efficacy has been found to interact with teacher characteristics, such as gender and teaching experience (Ross, 1998). This would imply that the effect of teacher efficacy on the impact of professional development cannot be considered in isolation. Rather, the relationship among teacher efficacy, organizational support, and professional development impact must take into account the characteristics of teachers involved.

The purpose of this study, therefore, is to investigate the impact of professional development programs for English as a Second Language (ESL) teachers on their classroom practice, and how teacher efficacy and organizational support at the school level relate to this process by interacting with years of teaching experience. In other words, this study is an attempt to illuminate the factors that influence the impact of professional development on teachers' use of newly acquired knowledge and skills based on theoretical predictions.

In pursuing the purpose of this study, three gaps are filled that exist within the impact studies. First, the neglected level of impact (i.e., teachers' use of new knowledge and skills) is explored in detail with regards to what factors may contribute to enhancing or impeding the impact of professional development at this level. Second, the void created by a lack of research on professional development within the field of English as a Second Language (ESL) is addressed by drawing on the science and general professional development literature, and connecting the research in these fields to ESL.

Finally and most importantly, this study recognizes the lack of theoretical frameworks in the professional development literature and utilizes social cognitive theory as the basic framework not only to address the interrelationships among impact, teacher efficacy, and organizational support, but also to better understand professional development itself.

C. Research Questions

1. What is the relationship between the self-selected nature of participants and their level of teacher efficacy?
2. Does teacher efficacy predict the level of impact of professional development?
3. Does teacher efficacy predict the level of impact of professional development controlling for years of teaching experience?
4. Does teacher efficacy predict the level of impact of professional development for some subgroups of teachers better than others based on years of teaching experience?
5. Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy?
6. Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy controlling for years of teaching experience?
7. Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy for some subgroups of teachers better than others based on years of teaching experience?

D. Limitations of the Study

Self-Reports

Although self-reports are the most commonly used form in measuring respondents' perceptions, they present several problems. The most oft-cited problem is *social*

desirability or the need to present oneself in a favorable light (Tourangeau, Rips, & Rasinski, 2000). This is a phenomenon associated with respondents answering in a way that presents them in a socially favorable light regardless of their true perceptions. This in turn has the potential to limit the validity in interpreting the data.

Social desirability may pose a further problem when coupled with the fact that the respondents will be well aware of the purpose of the study described in the cover letter sent to the participants. Knowing the purpose of the study and the underlying theory, the respondents may provide answers in ways that would confirm the researcher's hypotheses. This aspect could also challenge the validity of data analysis and interpretation.

As Tourangeau and his colleagues note (2000), social desirability effects may be somewhat lessened by assuring the respondents of confidentiality. The present study followed this guideline in the letters sent to the participants by emphasizing confidentiality along with the importance of accurate answers in contributing to sound research.

Absence of Base-line Data

Baseline, according to Johnson and Christensen (2000), is the "observation of a dependent variable response prior to an attempt to change this response" (p. 274). These authors also note that baseline is "the occurrence of a response in its freely occurring or natural state" (p. 274). To translate this into the context of the present study, baseline data would have been the observation or measurement of teachers' behaviors in their classrooms prior to their professional development experiences.

Although an attempt was made in the instrument to assess what the respondents were doing as a result of their professional development participation, there is no way of knowing whether these teachers were already using these knowledge and skills prior to their training. More specifically, there is no way to conclude with confidence that the observed impact is the result of professional development. Without a control group (i.e., a group that did not participate in the professional development program), this limitation becomes even more of a challenge for analyzing and interpreting the data.

Another challenge posed by the absence of baseline data is that there is no clear evidence to indicate causal relationship among the variables included in the present model. To begin with, there is no way to find out whether teachers with a pre-existing strong sense of efficacy chose to participate in professional development, or if professional development itself led to teachers having a strong sense of efficacy. The theory on self-efficacy supports both views, and it could be that teachers with strong efficacy beliefs chose to participate in the program, and as a result of their participation enhanced their sense of efficacy to an even higher level. However, this study is not concerned with the effects of professional development on teacher efficacy. Rather, it focuses on the influence of teacher efficacy at the implementation stage.

Asking teachers to report on their efficacy beliefs retrospectively, without baseline data, also creates a somewhat complicated situation. As Guskey (1986) notes, teachers are more likely to change their attitudes and beliefs *after* they see improvements in student learning. The implication for this study is that teachers might have implemented what they acquired from their professional development experiences without a strong sense of efficacy, saw evidence of enhanced student learning, and then felt very efficacious. This

might in turn result in confirming the hypothesis that teacher efficacy is an important variable in influencing the impact of professional development on teachers' use of knowledge and skills when in fact it is the other way around.

Confounding Variables

Related to the limitations posed by the absence of baseline data and an experimental control group is the problem of confounding variables. As this study attempts to measure the impact of professional development, it would be ideal to claim that any changes observed are due to the professional development. But as mentioned previously, the participant teachers might have already been using the knowledge and skills measured in the Impact Scale. In addition, these teachers might have been going through other experiences (along with their participation in the professional development activities) that might have influenced what they do in their classrooms. The present study is unable to correct for these situations.

Assumption of Acquired Knowledge and Skills

By focusing on the impact of professional development on teachers' actual classroom practices, this study assumes that all the teachers in this study indeed acquired new knowledge and skills. However, if teachers did not acquire the new knowledge and skills through professional development, they will be unable to implement them regardless of the level of teacher efficacy and organizational support.

Exploring participants' learning requires diverse measurements that are beyond the scope of the present study. The fact that participant teachers had to pass their coursework

and an external national test to receive their additional certification serves as evidence of their learning.

Disadvantages of Agree-Disagree Formats

The final limitation of this study pertains to the response format. The most commonly cited problem related to agree-disagree formats is *acquiescence* or the tendency of respondents to agree irrespective of item content (Converse & Presser, 1986; Fowler, 1995). Another potential problem has to do with the descriptive phrases used before the word *agree* or *disagree* (i.e., strongly and moderately). According to Converse and Presser (1986), this approach confounds *extremity* with *intensity*. In other words, a respondent may disagree or agree without any indication of intensity (i.e., strongly or moderately).

Notwithstanding these potential disadvantages, as Fowler (1995) makes clear, there are some constructs (e.g., teacher efficacy) that are simply difficult to measure without using this type of response format. The present study used the same response formats for all instruments in an attempt to reduce the cognitive burden of respondents, that is, having to reorient themselves to different formats for each instrument.

CHAPTER TWO

LITERATURE REVIEW

A. Introduction

Recognizing the important role professional development plays in improving education, various models of effective professional development have been developed and components that contribute to effectiveness have been identified. However, what is still lacking is a theoretical framework that would be able to explain *why* professional development leads to teacher learning and what factors may contribute to enhance this process. Studies describing factors that contribute to effective professional development mostly identify these factors empirically in a *post-factum* approach.

As mentioned in the previous chapter, this study attempts to ground professional development in a theoretical framework. Social cognitive theory not only helps to explain the interrelationships among the variables in the present model, but also provides each variable with a firm theoretical foundation. The theoretical foundation also allows for predictions to be formed and tested. As important as it is as an overarching theory in the present work, the following literature review will begin with a brief overview of this theory.

Social Cognitive Theory

The major tenet of social cognitive theory, which also marks the biggest breakthrough from previous learning theories, is that learning is basically *cognitive*. What this means is that people are able to learn just by observing others (i.e., models) without direct reinforcement (Bandura, 1986; Crain, 2000; Salkind, 2004). Asserting that observational learning is possible through cognitive processes, and also emphasizing that modeling can have a strong impact on future behavior, social cognitive theory provided a completely different framework for viewing learning from both strictly behaviorist and cognitive views of learning.

With regards to professional development, social cognitive theory provides a coherent framework for explaining why professional development leads to teacher learning as well as what factors contribute to enhance this process. Various forms of professional development (e.g., workshops, coaching, modeling) for teachers result in their learning of new skills and knowledge precisely because human beings are able to learn through vicarious or observational learning without direct experience. Teachers, like any learners, are able to acquire new knowledge and skills through watching and listening to what other people do and say (i.e., via modeling as well as verbal instructions).

This claim, however, does not mean that observing or listening to other people will automatically lead to learning. The process of observational learning is much more complex than the direct route that goes directly from observation to learning. It involves the following four processes that are interrelated: attentional processes; retention processes; motor reproduction processes; reinforcement and motivational processes

(Bandura, 1986; Crain, 2000; Salkind, 2004). It is these four processes that posit the learner as an active participant in the learning process.

Although all four processes are important in order for observational learning to occur, for the purpose of this study, the focus will be on the reinforcement and motivational processes. As will be emphasized throughout the study, there is an important difference between acquiring new knowledge and performing based on that knowledge (Crain, 2000). *Performances*, according to Crain (2000), are governed by reinforcement and motivational variables. As Bandura (1986) also emphasizes throughout his book on social cognitive theory, there is a clear distinction between acquisition and performance within this theoretical perspective. This distinction is critical and provides the rational for focusing on teachers' actual classroom practices as the level of impact in this study.

Within this theoretical framework, Bandura (1986) believes that one of the most powerful determinants of motivation is one's appraisal of self-efficacy. The level of self-efficacy and motivation in turn are strong predictors of future behavior (Bandura, 1977; 1993; 1997). An important implication for the present study is that teachers with a strong sense of efficacy will be more willing and persisting in implementing innovative techniques, but that they also need direct reinforcement. As will be seen more clearly when teacher efficacy is explored in later sections, teachers' efficacy expectations are not enough to sustain their efforts at using the newly acquired knowledge and skills. Outcome expectations (i.e., the belief that teaching itself can have an impact on student learning by being provided with adequate resources) also must support their efforts.

To briefly summarize, social cognitive theory serves as the overarching theoretical foundation from which the model of the present study stems. This allows professional

development to be viewed in a solid theoretical framework, making theoretical predictions possible regarding what contributes to effective professional development programs and why. As a result, the two variables predicting impact are derived from self-efficacy theory, which is a major aspect of social cognitive theory. In other words, the two expectations underlying self-efficacy beliefs (i.e., efficacy expectations and outcome expectations) provide a theoretical rationale for teacher efficacy and organizational support, respectively, as the major determinants of the impact of professional development on teachers' use of knowledge and skills.

B. Professional Development

Definition

Before answering the question of what professional development is, Guskey (2000) first notes the significant change in the conceptualization of professional development. Traditionally, professional development was viewed very narrowly, most often conceived as a series of workshops or presentations that were restricted to 3 or 4 days during the school year. Other educators viewed professional development as a means to attain an advanced degree or to simply move ahead on the district scale. Guskey explains that one of the factors contributing to this narrow conceptualization of professional development was the "policies that required teachers and school administrators to accumulate a certain number of professional development hours or credits each year in order to retain their jobs and their professional certification" (p. 14).

Guskey's (2000) concern with this narrow view of professional development is not that workshops and presentations are ineffective means of providing continuous learning

opportunities for educators. Rather, it is when professional development is equated with these activities and programs that the goal of improving teacher education is often met with failure. For every professional development program to be successful, there must always be some type of follow-up support and activities (Eisenhower National Clearinghouse, 1999; Guskey, 2000; Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003).

With this traditional view of professional development as the backdrop, Guskey (2000, p.16) goes on to define professional development as "those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might, in turn, improve the learning of students. In some cases, it also involves learning how to redesign educational structures and cultures. It is an extremely important endeavor and central to education's advancement as a profession."

Purposes, principles, and characteristics of effective professional development

The ultimate goal, or the most fundamental purpose underlying any professional development efforts, is improvement in student learning. Although stated rather simply, there are many complexities involved in the relationship between professional development and student learning. For one thing, the relationship is far from being direct. Professional development programs and activities influence many other levels before having an ultimate impact on student achievement. These levels will be discussed in a later section of this chapter. Another important issue to be considered is that inherent in the definition of professional development is the goal of improving learning for *all* students (Loucks-Horsley et al., 2003). In other words, professional development

endeavors not only aim at improving learning for all students, but also at closing the already existing achievement gap.

With these complexities in mind, Loucks-Horsley identifies five major principles of effective professional development within the field of science education:

1. Professional development experiences must have students and their learning at the core – and that means all students.
2. Excellent science teachers have a very special and unique kind of knowledge that must be developed through their professional learning experiences.
3. Principles that guide the improvement of student learning should also guide professional learning for teachers and other educators.
4. The content of professional learning must come from both inside and outside the learner and from both research and practice.
5. Professional development must both align with and support system-based changes that promote student learning.

(Eisenhower National Clearinghouse, 1999, p. 4)

Several characteristics of effective professional development may be derived from these basic principles. First, teachers cannot teach what they do not know. Therefore, in order for professional development efforts to accomplish its ultimate goal of enhancing student learning, teachers must be given ample opportunities to improve their content knowledge, in addition to enhancing their pedagogical skills. This is why so many science professional development activities engage their participants "in the same investigations their students will engage in" (Eisenhower National Clearinghouse, 1999, p. 58).

Second, professional development programs and activities must be aligned with some type of standard at the local, state, or the national level. For example, within science education, professional development programs align their activities with the *National Science Education Standards*, the *Benchmarks for Science Literacy,* or the state's science framework (Eisenhower National Clearinghouse, 1999). In other words, any type of effective professional development, regardless of the specific form it takes, is essentially standards-based. Within this view, the challenge is how to translate the science standards into effective classroom practice (p. 53).

Finally, as mentioned with regards to the limitations of one-time workshops and presentations, all effective professional development programs have some sort of a follow-up support system. This is because professional development is an on-going and continuous *process* (as opposed to *product*) that goes on as long as teachers are engaged in teaching and students are engaged in learning. Conversely, the absence of follow-up activities may be detrimental to the success of any type of professional development. Fullan (1982, p. 287, quoted in Ingvarson & Mackenzie, 1988) goes so far as to say that "the absence of follow-up … is without doubt the greatest single problem in contemporary professional development."

The follow-up system takes many forms, from simple classroom visits and observations by professional development staff, to networking opportunities that provide on-line supports of various kinds. Printed materials, such as monthly newsletter publications, journals, and magazines also provide useful information for on-going learning and reflection for educators. Sometimes mentoring and peer coaching prove to be

very helpful as teachers continuously need feedback and support while implementing and adapting what they have attained from their professional development experiences.

Implications for the field of English as a Second Language (ESL)

With the background information on the nature of professional development in general, and more specifically on how it is done within science education, the attention now shifts to ESL. Although this field differs from science regarding the *content* of subject matter, they share many effective teaching strategies identified by research.

In connecting the characteristics of effective professional development mentioned previously to the field of ESL, five essential principles seem to emerge. As already mentioned in the previous chapter, not much has been researched regarding professional development in the field of ESL. Therefore, the following principles may not be exhaustive for effective ESL professional development at this point.

1. Effective ESL professional development efforts should be standards-based.

As noted in *Doing what matters most* (Darling-Hammond, 1997, p. 5), "the education reform movement in the United States has focused increasingly on the development of new standards for students." The creation of new challenging standards for all students not only has implications for the content being learned and taught, but also on the curriculum framework and assessment methods. Standards serve as guiding posts all throughout the phases of instructional planning, curriculum development, and assessment practices. Therefore, if any of these processes are to be changed, the change must be aligned with the standards.

Within this context, in the year 1997, Teachers of English to Speakers of Others Languages (TESOL) has published *ESL Standards for Pre-K-12 Students,* which contains academically challenging standards that specifically address English as a Second Language Learners. The impetus for the creation of this text came from standards-based reforms in other academic areas as well as from a huge increase in the number of students who speak languages other than English as their primary language.

The standards as put forth by the TESOL, also focus on the teaching and learning of cognitively complex skills and metacognitive strategies as related to the use of the English language, as do other standards in other academic disciplines. This in part stems from the belief that only by acquiring those skills and knowledge will students be able to reach their full potentials in a highly competitive society. Accordingly, the *Standards* addresses the language skills needed for social as well as academic purposes.

A couple of important implications for teaching and learning emerge from the study of the TESOL *Standards*, which have been emphasized in other academic standards as well. First, standards are for every student. What this means in terms of ESL is that every English learner, regardless of his/her current proficiency must ultimately reach a native-like proficiency. Furthermore, these English learners must perform at a grade level comparable to their native-speaking peers in *all* subjects (Peregoy & Boyle, 2005). Second, in working toward meeting the goals of the *Standards,* all educational personnel (e.g., ESL teacher, regular classroom teachers, principal) assume responsibility for the ESL student. This in turn requires a lot of collaboration among teachers who work with ESL students in one way or another.

2. Effective ESL professional development efforts should address both content knowledge and pedagogical skills.

In science education, some professional development strategies involved the immersion of scientists and science teachers into each others' worlds (Eisenhower National Clearinghouse, 1999). Among other goals, this served to enhance the scientific knowledge for science teachers as well as helping scientists to better understand the process of transmitting this knowledge to students. Translated into the field of ESL, this implies that teachers working with English learners have to be equipped with both the knowledge of second language acquisition (SLA) theories, and the instructional strategies that enhance the English learning process.

There are many ways to implement second language acquisition theories and teaching skills effective for English language learners into classroom practice. As there are many books written on this topic (e.g., Díaz-Rico & Weed, 2002), specific descriptions will not be attempted here. Suffice for the purpose of present discussion is the idea that the most optimal teaching and learning experience stems from a consideration of a host of contextual factors in addition to SLA theories and pedagogical skills for teaching ESL learners. Such contextual factors include but are not limited to: cultural and linguistic background of teachers and students; English proficiency of diverse ESL students; school climate; and students' home environment.

3. Effective ESL professional development efforts should be grounded in constructivism.

As Richards and Rodgers (1986, cited in Brown, 2000) note, learning is facilitated if the learner discovers or creates rather than remembers and repeats what is to be learned.

Within this perspective, teachers are not merely transmitters of knowledge. Rather, they are co-constructors of knowledge, along with the learners (Nelson, 1999). Recent theories on communicative competence (e.g., Bachman, 1990; Canale & Swain, 1980) all emphasize the importance of constructing meaning in context. Teachers of ESL students, should therefore, adopt a constructivist approach in enhancing both language and content acquisition by grounding their students' learning in a context that allows the learners to create or discover meaning for themselves.

4. Effective ESL professional development efforts should include a follow-up system.

As with any effective professional development activities or programs, follow-up system is crucial in the field of ESL as well. This may come in various forms, as previously mentioned, from helping teachers locate needed materials and resources to providing them with access to professional learning communities. Modern technological innovations, especially computers, have made this type of follow-up support more feasible.

5. Effective ESL professional development efforts should reach out beyond the walls of the school.

Just as effective professional development in science education reached out into the wider world by connecting with scientists, effective ESL professional development should similarly form partnerships with other professionals engaged in working with ESL population. Teaching involves, or should involve, continuous learning. This means teachers need to be provided with ongoing opportunities to participate in professional conferences and/or attend courses at higher institutions. Opportunities such as these not

only promote continuous learning but also help to form professional networks that extend beyond the walls of individual teacher's school.

Furthermore, just as science teachers gain a lot from being immersed in a real-life scientific community, ESL teachers should have opportunities to see how English as a second language acquisition takes place outside the school walls. Having a connection with and access to ESL students' communities would not only help them with the immersion experience but also allow them to use the community resources effectively in enhancing student learning. In reviewing projects that led to optimal conditions of learning for both teachers and students, Woods (1994) notes that one of the common features underlying them was the notion of holistic learning that recognized the whole neighborhood as school and the whole day as learning time.

Levels of Professional Development

In emphasizing the complexities involved in the relationship between professional development and student learning, it was noted that there are many levels and factors that intervene before professional development has an impact on its ultimate goal. Those multi-levels will be discussed in this section, following Guskey's (2000) framework.

According to Guskey (2000), there are five levels to consider when evaluating any type of professional development. In his model, the first level is defined as *participants' reactions*. At this level, the basic concern is whether the participants were satisfied with their professional development experience. Even if nothing has been gained from participating in professional development, one would walk out happy, if at least the refreshments were fresh and tasty. Because this level mainly addresses participants'

reactions to issues such as refreshments and facilities, some researchers have called the measurement at this level as the "happiness quotient".

The second level addresses *participants' learning*. After all, one of the reasons why teachers participate in professional development is because they want to learn something, whether it be content or pedagogy related skills and knowledge.

Level three pertains to the *organizational support and change*. Guskey (2000) emphasizes all throughout his book *Evaluating professional development,* that professional development is a systemic process. In order for teachers to implement what they have gained from professional development experiences, the organizations in which they work should provide on-going support for the implementation efforts to be successful. If the school climate or culture is not conducive to the changes the teachers promote, the individual teachers will face severe limitations. In addition to the school culture, materialistic resources, including time (e.g., release time to collaborate with other teachers), must be provided in order for the change process to be truly effective.

Indicating evidence from their study, Ingvarson and Mackenzie (1988) note that mode of selection (i.e., whether the participants self-selected themselves to attend the professional development, or were selected by the organization in which they work) may be an important factor in determining the level of organizational support and change on the part of the teacher. Their analyses (not described in detail in the 1988 article) of previous studies indicated that there was more organizational support and conditions conducive to change when the participants were selected by the organization for professional development. This in turn had indirect effects on the impact of professional development.

Participants' use of new knowledge and skills is the fourth level and the focus of the present study. As such, an entire section will be devoted to this level in the latter part of this chapter. Here, it will only be noted that this level refers to whether the participants are applying the new knowledge and skills they have acquired through professional development. One important thing to note here is that both the *degree* and the *quality* of implementation need to be addressed. In other words, teachers could be applying a newly acquired instructional strategy frequently, but without considering the specific context of the classroom such that the frequency is overridden by the highly ineffective implementation.

The final level, and the ultimate goal of professional development, concerns the *student learning outcomes*. Guskey (2000) notes that some people call this level of evaluation as "starting with the ends and working backwards", others similarly call it "starting with the ends in mind" (p. 209). These descriptions indicate that professional development at this level has its focus on the *end* (i.e., enhanced student learning), or *result*. This is why professional development programs that explicitly focus on increasing student achievement are sometimes referred to as being "result-based" (Eisenhower National Clearinghouse, 1999, p. 55).

In considering the impact of professional development on students, there are three major domains of outcomes (i.e., cognitive, affective, and psychomotor). As Guskey (2000) notes, traditional evaluations of professional development put a heavy emphasis on the cognitive learning outcomes, with less attention to the other two areas. Guskey further argues that the other two domains (i.e., affective and psychomotor) are equally as important and deserve careful attention by program developers and evaluators alike. This

final level, simply stated, is where the *overall impact* of professional development comes to the spotlight.

Models of Professional Development

The major types of professional development will be discussed here. Before beginning the discussion, it is important to note that any model of professional development has both advantages and shortcomings (Guskey, 2000). Accordingly, various factors such as context, characteristics of content, and students, must be considered in choosing the optimal model for a particular situation (Sparks & Loucks-Horsley, 1989).

Following these caveats, Guskey (2000) introduces what he considers to be the seven prominent models of professional development. His definitions and descriptions of the models are adopted in this section.

Training, which is most often considered synonymous with professional development, "typically involves a presenter or a team of presenters that shares its ideas and expertise through a variety of group-based activities" (Guskey, 2000, p. 22). Large group presentation and discussions, workshops, seminars, colloquia, demonstrations, role-playing, simulations, and micro-teaching all fall within this model of professional development. In their 1988 article, Ingvarson and Mackenzie note that within the Australian context, short-term withdrawal workshops are the most common type of professional development activity.

The most noteworthy benefit of this type of professional development is that it is highly cost-effective, efficient, and is capable of reaching a large number of participants in

a single session. The most obvious disadvantage is that they offer little opportunities for choice or individualization.

Observation/assessment is a type of professional development that benefits both the observer and the observed. The observer learns from closely monitoring and watching the teaching experience of a colleague, while the observed improves his/her teaching practices with the feedback provided after the observation. Obviously, time coordination may be difficult when the teachers have conflicting schedules. Closely related to this type of professional development is *mentoring*, which involves interactions between an experienced and highly successful educator and a less experienced colleague.

Involvement in a development/improvement process is another useful method of professional development, which provides educators with a chance to gain new knowledge and skills through collaboration with peers by conducting research or engaging in discussions. With this type of involvement, special attention has to be paid to the group dynamic. No one person should have a higher chance of getting his/her ideas across than any other.

Study groups refer to forming groups of teachers within the same school in order to find a solution to a common problem. This type of professional development encourages the idea that schools are learning communities and that teachers (as well as students) are striving learners. As with the *involvement in a process* model, this type of professional development may suffer when the group dynamic is in favor of a certain subgroup to the detriment of other groups.

If involvement in a development process and study groups are models of professional development that require the formation of groups, *inquiry/action research* and

individually guided activities are models that are more likely to be employed at the individual level (although inquiry/action research may involve groups as well). Accordingly, whereas the group models usually address concerns at the building level, individual models generally try to solve problems occurring at the classroom level. The main difference between the two individual level models is that inquiry/action research usually starts out by identifying a problem or question, and individually guided activities usually start with the identification of a need or interest.

C. Impact

As multi levels are affected by the impact of professional development, there are also various ways to measure the impact at each level. As Guskey (2000) notes, the challenge is to decide which method is the most appropriate, considering relevant factors (e.g., the level of evaluation, time, cost, resources, etc.). Some methods may be used at more than one level and at times a combination of two or more measures may yield the most useful evaluation information. The following description and discussion focus on the evaluation instruments that may be used to gauge the impact of professional development on teachers' use of knowledge and skills and are mainly based on Guskey's (2000) work.

Questionnaires

This type of paper-and-pencil instrument is the most widely used one in evaluating the impact of professional development. It may be used at all five levels of evaluation, may be administered to a large number of people affected by the professional development experience, and is relatively cost-effective. For information that may be collected

immediately after the program or activity, questionnaires may be handed out to the participants and collected before they leave the site of professional development program. More often than not, however, the questionnaire administration and collection must be delayed in order for effects of the professional development to have had a chance to occur. Depending on the complexities involved, the time needed may vary.

One important thing to keep in mind when interpreting responses obtained from questionnaires is that they pertain to the *perceptions* of respondents. As Guskey (2000, p. 169) notes, questionnaires are "an indirect measure - not direct evidence." Although individuals' perception of reality may be accurate most of the time, at times those perceptions could reflect biases. This cautionary note, of course, will be of little importance when the goal of measurement is individuals' perceptions.

Interviews

Another frequently used method of evaluation is interviews. Interviews may be highly structured (i.e., choosing from predetermined response options to predetermined questions) or more open-ended in nature. Again, the selection of the type of interview should be guided by the purpose of the evaluation. Structured interviews may be easier and quicker to administer, whereas open-ended interviews allow the interviewer to ask probing follow-up questions based on interviewees' previous answers which may lead to a rich source of information including *unintended* outcomes.

Interviews may be more costly than questionnaires, with regard to both time and money. If trained interviewers are not already part of the professional development and evaluation team, it may cost a lot to train interviewers or hire skilled interviewers.

Interviews usually take longer to administer as well, which may limit the possibility of contacting a large number of interviewees.

One final caution that needs to be made relates to securing the anonymity of the individuals being interviewed. Unlike questionnaires, respondents in an interview situation are interacting face-to-face with the interviewer. In addition to the bias that might stem from individuals' perceptions, there is an additional risk that respondents may be reluctant to provide valid information if they feel their anonymity is not being protected. The resulting information may be doubly biased, one source being the self-reported nature of the responses, and the other stemming from respondents' concern over the consequences of their answers.

Direct Observations

Direct observations are also among the relatively simple and immediate ways of gathering evaluation information. One essential requirement of direct observation is that observers must clearly know what they are looking for. As Guskey notes (2000, p. 192) "Critical indicators that are clearly defined and require little inference on the part of observers generally yield the most reliable evidence." Unlike questionnaires and interviews that mainly rely on respondents' self-reports that may be unintentionally biased at times, direct observations, with clear indicators of evidence, yield comparably direct evidence regarding the impact of professional development.

One major drawback of direct observations is that it may have an influence on the observed phenomenon. The mere presence of an observer may change the way observed people typically act. Direct observations are also quite costly, both to train the observers

and to compensate them for their work. Nonetheless, sometimes direct observation may be the most appropriate or the only option in attaining valuable information related to evaluation.

Reflective Journals

Whereas all of the aforementioned methods of evaluation rely on a one-time data collection, reflective journals allow information to accrue over time. This aspect may be especially advantageous if the goal of the evaluation is to measure some kind of progress or change. As was the case with interviews, journals can also have varying degrees of structure. Some professional development programs require participants to utilize a highly structured journal that has a predetermined format, which only require that individuals fill in the blanks. Journal formats that are more open-ended give more freedom to respondents as to what they report. As has been mentioned with open-ended interviews, less structured journals may reveal unintended outcomes as well.

Using Comparison Groups

For people who want solid quantitative evidence based on statistical analyses, this form of evaluation may yield the most satisfactory results. If the required conditions are met (e.g., random assignment, manipulation of variables), this type of investigation may yield the most reliable and valid results regarding the impact of professional development. In other words, it would allow one to conclude that the changes evidenced are indeed the result of professional development and not of other extraneous factors that happened to occur concurrently.

In real life, however, it is almost impossible to meet the necessary requirements of a strictly experimental study. Schools can't be randomly assigned into districts, teachers into schools, and students into classrooms. And even if this condition could be achieved, the second prerequisite of controlling all factors other than professional development would be almost impossible to meet.

Having laid down these caveats, using comparison groups to measure the impact of professional development yields the most reliable information if evaluation efforts strive at creating conditions that closely approximate the ones required for an experimental study. Random assignment not being possible, matching techniques (i.e., finding groups with similar characteristics such as gender, background, age, etc.) may serve as a viable alternative. Constantly watching out for the effects of confounding factors and introducing them into the evaluation results would enhance the validity of the interpretation as well.

Focus on impact on participants' use of new knowledge and skills

Following the comprehensive description of the impact of professional development, the focus will now turn to the level of impact the present study is interested in (i.e., impact on teachers' use of new knowledge and skills). This level of impact is chosen based on the belief that it is what teachers actually do in their classrooms that has a strong influence on student learning. As Bandura notes (1993), "there is a *marked difference* between possessing knowledge and skills, and being able to use them well under taxing conditions" (p. 119, emphasis added). Despite the importance of this level of impact, very few studies to date have attempted to investigate it (Frechtling et al., 1995).

Within this scope of impact exploration, the method chosen is questionnaires, with all the ensuing benefits and limitations mentioned previously. As Ingvarson and his colleagues (Ingvarson, Meiers, & Beavis, 2005) recently investigated the same level of impact using a questionnaire, their measure of impact was utilized in this study with a few modifications to fit its new context. A complete presentation of the instrument may be found at the end in Appendix D, and a more detailed description of the modified scale is presented in the *Instrumentation* section.

D. Teacher Efficacy

Within the context of social cognitive theory, the two most important variables influencing the impact of professional development on teachers' classroom practices are teacher efficacy and organizational support. This section will explore the former variable. A description of the latter variable is presented in the following section.

As with any directly unobservable psychological construct, teacher efficacy is difficult to define, operationalize, and measure (Guskey, 1998). It is no wonder that varying definitions and instruments that attempt to measure it have been proposed. The interpretations derived from various attempts to measure this elusive construct are also diverse, going back to the problem of varying definitions and operationalizations, which interact in a cyclical fashion. Despite these challenges, attempts to reveal the nature of teacher efficacy are far from ceasing, due to consistent findings from research that support its positive effects on teachers and students alike.

One thing the researchers of this complex construct seem to agree on is that it is multidimensional with at least two significant factors (Gibson & Dembo, 1984). What

exactly these factors are, however, greatly diverge from researcher(s) to researcher(s) (for an example of a three-dimensional model, see Soodak & Podell, 1996; for context variables as representing the multi-dimensions, see Guskey, 1987). Recognizing this great complexity, teacher efficacy in this study will be explicated in terms of self-efficacy (Bandura, 1977, 1993, 1997), and only studies that share this theoretical foundation will be examined (see Ross, 1998, for more on this theoretical perspective).

Definition

In general, *teacher efficacy* is the belief or conviction of teachers that they can influence how well students learn, even those who may be considered difficult or unmotivated by influences beyond teachers' control such as home environment, intelligence, and other external factors (Ashton, 1984; Dembo & Gibson, 1985; Guskey & Passaro, 1994; Tuckman, 1995). This in turn implies two things, or two factors that have been labeled and interpreted somewhat differently by various researchers. Specifically, one dimension relates to teachers' *outcome expectations* (Bandura, 1977), or their belief that learning can be influenced by effective teaching (Gibson & Dembo, 1984). The other dimension is *efficacy expectations* (Bandura, 1977) and relates to whether the individual teacher believes he or she has the necessary teaching abilities to influence learning positively.

These two dimensions of expectations (i.e., outcome and efficacy) were theoretically thought to be interrelated but independent of each other (Bandura, 1977), and following empirical tests proved this to be the case (Ashton & Webb, 1986; Gibson & Dembo, 1984; Woolfolk & Hoy, 1990). Ashton and Webb (1986) made a distinction between *teaching*

efficacy and *personal efficacy* and maintained they related to the outcome and efficacy expectations as defined by Bandura, respectively. Very similarly, Gibson and Dembo (1984) empirically identified two significant factors that corresponded to Bandura's two-dimensional theoretical model of self-efficacy. They labeled these factors *teaching efficacy* (corresponds to outcome expectation) and *personal teaching efficacy* (corresponds to efficacy expectation). Following this line of research, Woolfolk and Hoy (1990) also discovered two dimensions they called *teaching efficacy* and *personal efficacy.*

One important thing to note before concluding the job of defining teacher efficacy is that regardless of what names are given, or what specific definitions and interpretations are proposed for this construct, the common underlying feature is that teacher efficacy, in its multi-faceted form, is essentially a perception. Therefore, as Tschannen-Moran and her colleagues (Tschannen-Moran, Hoy, & Hoy, 1998) note, teacher efficacy is inherently *future-oriented* (i.e., a prediction or expectation related to future capability). This inherent characteristic of teacher efficacy is what makes it so powerful and at the same time so elusive.

Characteristics of teachers with a strong sense of teacher efficacy

An important distinction has to be made before discussing the characteristics of highly efficacious teachers. Bandura (1977) in his first article on self-efficacy, refers to the level, strength, and generality of efficacy expectations. More specifically, he refers to empirical evidence that self-efficacy which had developed for one situation generalized to others. This should not be interpreted to mean that efficacy expectations in general are transferable from one situation to another. Teacher efficacy has been shown to be

sensitive to context and situational factors. What should be kept in mind is that Bandura (1977) was working in the context of coping behavior in a very limited way (i.e., he was dealing with snake phobics who went through psychological treatments to increase their level of self-efficacy to affect change in behavior). Teaching and learning process, as anyone who has been in a classroom will testify, is far more complex (Guskey, 1995) than the interaction between a snake and an individual threatened by its presence.

The implication derived from the situation-specific nature of teacher efficacy is that teachers do not have efficacy expectations in all contexts. This has consistently led to the question of the level of specificity needed to define teacher efficacy (Tschannen-Moran et al., 1998). For example, factors such as subject matter, specific group of students being taught at a specific point in time, and school setting (rural/ suburban/ urban) all play a role in shaping teacher efficacy of a particular teacher. The question is whether teachers would still maintain the same level and intensity of teacher efficacy when there are changes in any of these factors.

Keeping this situation-specific nature of teacher efficacy in mind, teachers with a strong sense of efficacy generally employ a pattern of strategies that minimize negative affect, promote an expectation of achievement, and provide classroom context defined by warm interpersonal relationships and academic work (Ashton & Webb, 1986). These teachers also tend to use more whole class instruction (as opposed to small group) that result in higher rates of student engagement (Gibson & Dembo, 1984). Teachers with a strong sense of efficacy also use teaching techniques that are more challenging (Ross, 1994), monitor student work frequently (Gibson & Dembo, 1984), and exhibit a sense of "withitness" (Kounin, 1970, cited in Gibson & Dembo, p. 578).

Because teachers with a strong sense of efficacy are likely to persist in the face of challenges and obstacles (Bandura, 1977), they are more tolerant and more willing to persist in working with students who exhibit learning difficulties (Tschannen-Moran et al., 1998). They are also likely to reward correct responses with praises and less likely to offer harsh criticism following an incorrect response (Gibson & Dembo, 1984).

With regard to dealing with innovation, these teachers are most likely to be receptive to the implementation of new instructional practices (Guskey, 1988). Teacher efficacy, more specifically personal teaching efficacy, has also been found to be a significant predictor of "instructional implementation, including willingness to try a variety of materials and approaches, the desire to find better ways of teaching, and implementation of progressive and innovative methods" (Allinder, 1994, quoted in Tschannen-Moran et al., 1998, p. 214).

Teacher efficacy has also been found to be a strong predictor of teacher change following federally funded projects, and also of the continued use of project methods and materials after the project comes to an end (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977). This is not surprising given that teachers with high efficacy expectations are likely to try out innovative ideas, extend more effort and persist in the face of obstacles and challenges, while maintaining a strong commitment to what they set out to do (Bandura, 1991).

Finally, several studies have shown that the strength of teacher efficacy interacts with other teacher characteristics such as gender, teaching experience, level of teacher's education, and teacher cognitions (Ross, 1998). In addition to these teacher characteristics, Tschannen-Moran and Hoy (2002) report the findings from their study indicating an interaction between the grade level taught and the level of efficacy beliefs. Although far

from being a definitive conclusion, the findings related to the interaction effects would generally suggest that females report stronger sense of teacher efficacy than male, the level of teacher efficacy declines with experience, and elementary school teachers report higher levels of efficacy than middle or high school teachers. As Ross (1998) notes, however, the correlations reported are generally small and inconsistent.

E. Organizational Support

Although organizational support can come from many levels in many forms, the level of focus in this study will be very narrow and limited to the support that comes from the specific schools in which the teachers engage in their work of teaching. More specifically, the focus of the level of support will be mainly on the principal and the overall school culture. This is based on the findings consistently reporting that the role of the principal and the form of the school culture (Hargreaves, 1992) are the two most important contextual factors influencing teachers' classroom practices. Within this scope, resources such as time, money, and materials (Loucks-Horsley et al., 2003) are also emphasized.

The importance of organizational support in sustaining implementation efforts

As mentioned at the beginning when discussing the characteristics of effective professional development programs, follow-up support is often deemed to be the most critical component in sustaining the impact of professional development. In emphasizing the importance of appropriate supports, Darling-Hammond (1997) argues that the key to a successful innovation lies precisely in such resources as guidance, materials, time, and opportunities to learn. Similarly, Loucks-Horsley and her colleagues (Loucks-Horsley et

al., 1987) emphasize the importance of availability of resources, flexible working conditions, support, and recognition as the most important factors in influencing teachers' refinement of practices. Accordingly, the strongest criticism targeted at professional development programs is that they lack the support needed for teachers as they start implementing what they have acquired from their participation (Huberman & Miles, 1984).

Many studies of educational innovation have concluded that one of the major factors affecting success of the programs and their implementation is the support coming from administration, including principals and superintendents (Sparks, 1983). Guskey (1986), in delineating the relationship between professional development and the process of teacher change, emphasizes the importance of continuous follow-up support after initial training (on the importance of appropriate support at all levels of professional growth, refer to Mevarech, 1995).

Guskey (1986, 1991) further notes that very few, if any, teachers will leave a professional development program and directly and immediately be able to implement the new knowledge and skills they have acquired. It is through continued experimentation that this new set of knowledge and skills becomes a part of the teacher's routine repertoire. Whether or not the teachers receive follow-up support during this experimental phase will be crucial in determining whether teachers persist in their attempts or not.

To bring Bandura's (1993) argument once again, there is a difference between possessing knowledge and skills and putting them to use. One may have the needed knowledge and skills and the belief that they can use them effectively and still choose not to do so. Research indicates the lack of organizational support as one of the biggest

reasons why this may be the case. Organizational support may take various forms, but what research consistently indicates as being most important to implementing and sustaining implementation efforts and change are that of principal's support and the collaborative school culture.

More specifically, both the leadership of the principal and the overall culture of the school need to create opportunities for collaboration among teachers, promote and encourage experimentation and risk taking, remove barriers hindering incorporation of available knowledge bases, include teachers in goal setting and decision making, provide time to assimilate new learning into practice, and reward outstanding performances with appropriate incentives (Loucks-Horsley et al., 1987). With regard to decision making, Imber and Neidt (1990) specifically note that teachers are in the best position to make decisions that affect the educational program by virtue of their proximity to students and expertise in curriculum and instruction.

The importance of the role of the principal and the school culture is emphasized again in the following section delving into the elements of organizational support. In summarizing the critical nature of organizational support at the implementation stage, the argument of Ingvarson and Mackenzie (1988) should be noted, which states that the variation in impact of professional development mainly derives from the follow-up support that comes after the participants complete their professional development experience.

Elements of Organizational Support

Although the importance of follow-up support was emphasized by many, the very elements that constitute what may be called follow-up organizational support is difficult to define even after limiting the scope to the school level. However, some characteristics conducive to effective implementation were consistently found throughout the literature regarding the relationship between impact of professional development and follow-up support. These common, reappearing elements will be introduced here.

In order for implementation efforts to be successful, teachers need sufficient *time* to experiment with various strategies (Guskey, 1986). Lack of provision for time was found to be a consistent barrier to effective implementation of professional development activities (Loucks-Horsley et al., 2003). Teachers also need time and opportunities to collaborate with each other (Clift, Holland, & Veal, 1990; Louis & Smith, 1990; Morocco & Solomon, 1999) either to find a common solution to shared problems, or to exchange ideas that work. Time was also required for further professional learning (Hord & Boyd, 1995) such as professional reading and attending regional and national conferences. Simply put, teachers need significant chunks of pupil-free time (Loucks Horsley et al., 2003) in order for them to continue their professional learning and to implement the newly acquired skills and knowledge.

In addition to time, collaboration, and opportunities for further learning, material resources also seemed to play an important role in determining whether new knowledge and skills get implemented into classrooms (Hord & Boyd, 1995). These resources range from simple classroom supplies and materials for supporting new instructional methods (e.g., new books, wall charts, posters, etc.) to more complex technological innovations. As

Loucks-Horsley and her colleagues (2003) aptly summarize, "access to professional development is restricted when teachers do not have the resources to buy the new materials the professional development program requires or recommends" (p. 88).

In accordance with Guskey's (2000) view that professional development is a systemic process in which organizations have a powerful influence, the culture of the school is thought to play an important role in determining the impact professional development on teachers' classroom practices. For example, it is likely that when there is a good fit between the organizational values, beliefs, and norms and those promoted by the professional development program, the chance of successful implementation increases. Conversely, if a mismatch exists between the two value systems (i.e., between individual schools and professional development programs), the lower the chance of successful implementation.

Within the organizational context, both the principal and the overall school culture must encourage and promote experimentation, risk-taking, and innovation in order for teachers to be able to implement their newly acquired skills and knowledge. As many researchers have noted, changes always encompass a certain level of challenge, uncertainty, and anxiety (e.g., Guskey, 1989; 2000). For teachers to go beyond their comfort zone and take a step into the world of uncertainty, principals and other members of the school community must all come to appreciate and support the change and act as buffers against anxiety.

The importance of the principal's leadership and support in this regard has been mentioned throughout the studies investigating the effectiveness of professional development programs and activities (Barth, 1990). Similarly, a collaborative culture that

is conducive to professional learning community (Darling-Hammond & McLaughlin, 1999; Solomon, 1999) is also essential in implementing change.

Finally, all these elements of organizational support must be incorporated into an on-going follow-up system (Ingvarson et al., 2005). As obvious as this statement may seem, many schools fail to provide this type of *continuous* support. This may be why so many seemingly successful initial attempts turn out to be futile in the long run.

F. Summary of Literature Review

This literature review has provided the overarching theoretical framework (i.e., social cognitive theory) for grounding professional development to better understand its nature and to make predictions regarding what factors contribute to its success. Within social cognitive theory, self-efficacy theory was explored in more depth in an attempt to better understand the two variables hypothesized to have major influences on the impact of professional development programs. More specifically, the efficacy expectations and outcome expectations of self-efficacy beliefs led to postulating teacher efficacy and organizational support as the two major independent variables affecting the impact of professional development, the dependent variable.

CHAPTER THREE

METHODOLOGY

A. Overview

Based on the previous literature review, teacher efficacy and organizational support are hypothesized to be the major predictors of professional development impact regarding teachers' use of new knowledge and skills. Theoretically, the two expectations of self-efficacy (i.e., efficacy expectations and outcome expectations) lead to postulating teacher efficacy and organizational support as the major determinants of teacher behavior. Empirically, many studies delving into what happens after professional development experiences have found both teacher efficacy (Berman et al., 1977; Guskey, 1984; Smylie, 1988) and organizational support (Guskey, 1986; Hord & Boyd, 1995; Ingvarson & Mackenzie, 1988) to be major factors in determining the success of implementation processes.

The purpose of this study, therefore, was to investigate the impact of professional development programs for English as a Second Language (ESL) teachers on their classroom practice, and how teacher efficacy and organizational support at the school level relate to this process by interacting with years of teaching experience.

As an attempt to explore the complex relationship among the aforementioned variables identified both by theory and research (i.e., the effects of teacher efficacy and organizational support upon the impact of professional development), two identical

professional development programs for English as a Second Language (ESL) teachers were used as a basis for investigation.

B. Population

The population was comprised of participants of the Carolina Academic Consortium (CAC) and the Consortium for South and North Carolina (CSNC). These two identical ESL teacher-training programs were funded by two US Department of Education Title VII grants and directed by Dr. Audrey Heining-Boynton at The University of North Carolina at Chapel Hill. These two professional development programs provided funding for currently licensed teachers from both North and South Carolina that led to add-on ESL licensure.

As both of these ESL professional development programs came to an end at the summer of 2005, most of the participants had already either completed all the requirements of the program or were close to completion. These teachers were considered to have been in the program long enough to be implementing the knowledge and skills they have acquired through their professional development participation. Among the 232 CAC participants, 145 teachers fit this description and were invited to participate in the present study. Among the 68 CSNC participants, 29 teachers were sent survey packets. All CAC participants were North Carolina teachers and all CSNC participants were South Carolina teachers.

The rationale underlying the purposeful sampling used in this study is based on the nature of self-efficacy beliefs being context specific (e.g., Gibson & Dembo, 1984). Therefore, the specific contexts of teachers working with culturally and linguistically

diverse students in either the mainstream classrooms or ESL classrooms were of main interest. One important implication stemming from this specificity is that attempts to generalize the findings from this study to other groups of teachers or to other professional development programs should be made cautiously.

C. Independent Variables

Teacher efficacy and organizational support are the two major independent variables in this study. These two predictor variables are theoretically identified by Bandura's (1986) social cognitive theory, especially the two-component self-efficacy model, which points to the importance of these two variables regarding the prediction of impact of professional development on teachers' classroom practices. In the context of this model, teacher efficacy was measured by the Modified Teacher Efficacy Scale (from Gibson & Dembo, 1984), and organizational support was measured by the Organizational Support Scale.

D. Dependent Variable

The impact of the previously mentioned ESL professional development programs is the dependent variable of interest in this study. More specifically, the level of impact is focused on teachers' use of newly acquired knowledge and skills. Therefore, the impact of the CAC and CSNC on teachers' classroom practices, their use of what they have acquired from their training experiences in their classrooms, is the dependent variable, which in turn is predicted by the two independent variables (i.e., teacher efficacy and organizational support). The impact was measured by the Impact Scale in the present study.

E. Instrumentation

Three scales were used to measure the level of teacher efficacy, organizational support, and impact, respectively. These scales may be found in the Appendices B through D. In addition, a Teacher Background Questionnaire was also administered in order to provide a summary description of the respondents as well as for screening purposes. The screening questions were used to make sure that the respondents were currently teaching at the K-12 level and that they had finished all the requirements of the program in which they participated. This questionnaire is found in Appendix A.

Teacher Background Questionnaire

This questionnaire requested basic demographic information such as gender, age, and race/ethnicity. It also addresses questions regarding teaching experiences. For screening purposes, it includes questions regarding whether the respondents were currently practicing teachers. This effort to obtain further information from only those teachers who were currently teaching stems from the nature of the construct being measured. In other words, as the focus of the present study was on the impact of professional development programs on *teachers' classroom practices*, teachers had to be presently in the classroom. For those teachers who met this criterion, the nature of the classrooms in which they currently taught were assessed (i.e., mainstream or ESL, and grade level).

Instrument for Assessing Teacher Efficacy

The Modified Teacher Efficacy Scale is based on the work of Gibson and Dembo (1984) with slight modifications to fit the context of this study. The modifications relate to

the nature of the participating teachers in the current professional development programs (i.e., regular classroom or ESL teachers who work with a diverse student population with regard to both culture and language). The original scale in its original context of use yielded two factors identified by the authors as Personal Teaching Efficacy (PTE) and Teaching Efficacy (TE). These two factors correspond to Bandura's efficacy expectations and outcome expectations (1977, 1993, 1997) and to Woolfolk and Hoy's (1990) personal efficacy and teaching efficacy, respectively.

Following Gibson and Dembo's (1984) recommendation, only the 16 items that yield a reliable coefficient were used to yield a composite score accounting for both factors. In their original study the total 16 items yielded Cronbach's alpha coefficient (a measure of internal consistency reliability) of .79. The authors of the original scale considered this as acceptable.

As Tschannen-Moran and Hoy (2001) note, this scale is not without problems. Among those problems is the lack of clarity about the meaning of the two factors (i.e., PTE and TE) and the instability of the factor structure. However, this scale was chosen with modifications on the basis of its wide acceptance among educational researchers and the fact that it is the most widely investigated scale among teacher efficacy researchers.

Instrument for Assessing Organizational Support

The Organizational Support Scale is constructed based on a thorough review of research on what factors at the school level most importantly influence the success (or failure) of professional development programs and activities. A constant effort was made to minimize the degree of relationship between teacher efficacy and organizational

support. This effort stems from considering two factors. First, from a statistical standpoint, independent variables must have a low correlation between (or among) themselves and a high correlation with only the dependent variable to enhance the multiple regression model (Howell, 2002; Tabachnick & Fidell, 2001). Second, in research utilizing survey, it is important not to influence the response process of one scale from the other (i.e., to avoid consistency bias). Despite this effort, confounding effects may still persist (i.e., organizational support as defined here will still influence the level of teacher efficacy and vice versa), and this is recognized as a limitation.

The first nine items were adapted and modified from the 2004 Teacher Questionnaire administered by the National Science Foundation's (NSF) *Local Systemic Change (LSC) through Teacher Enhancement Program*. Again, where modifications occur, it is to account for the specific professional development programs (i.e., CAC and CSNC) and their participants (i.e., certified classroom teachers working with diverse student population, including ESL students). The remaining three items were constructed on the basis of a thorough review of the literature regarding the school-level factors that affect the impact of professional development endeavors.

Instrument for Assessing Impact

Finally, the Impact Scale was derived from the study of Ingvarson and his colleagues (Ingvarson et al., 2005). In this study, these researchers investigated four linked types of impact resulting from professional development programs. Among them, the impact on teachers' practice (i.e., what they actually do with the acquired knowledge and skills from professional development experience) is what is of interest in the present study. Therefore,

their original scale focusing on this level (i.e., teachers' practice) was chosen to be used in the present context with a few modifications and additional items to better reflect the nature of the current professional development programs.

The scale in its original form consists of 10 items that are to be answered on a four-point scale that range from *strongly agree* to *strongly disagree*. The Cronbach Alpha value for the original scale is 0.92 (Ingvarson et al., 2005), which is generally deemed to be more than acceptable.

To fit the current context, both in terms of the professional development programs, and participants, five items were added and a few modifications were made to the original questions and responses. More specifically, the phrase "all students, including ESL students" was inserted for the same reason as given for the Modified Teacher Efficacy Scale. Taking into consideration the objectives of the current professional development programs (i.e., CAC and CSNC), the questions relating to whether the teachers in fact acted as change agents within their respective schools were added as well. Furthermore, the response options were expanded to a six-point scale to increase variability (DeVellis, 2003), and thus, reliability.

Summary of the Scales

To briefly summarize, the three scales (i.e., the Modified Teacher Efficacy Scale, the Organizational Support Scale, and the Impact Scale) are modified from established scales with few changes and additions. Where modifications occur, the main consideration was the specific nature of the professional development programs and their participants. In the

case of the Organizational Support Scale, a thorough review of the literature identified the three additional items.

F. Data Collection Procedure

A human subjects proposal was submitted to the Behavioral Institutional Review Board to obtain permission prior to any type of data collection. The potential participants of the study were identified by using the CAC and CSNC databases provided by the program manager. Each participant was given an identification number for the sole purpose of tracking non-respondents. No real names were used in any phase of the study and the identification codes were deleted once the data collection process had been completed.

A total of 174 surveys were mailed to the CAC (145) and CSNC (29) participants that had either already completed their training requirements or were very close to completion. As mentioned previously, this was to ensure the program participants had enough time and opportunities to implement what they had acquired through their professional training. Participants of the two consortia who had either withdrawn or who were thought to have completed only a few of the program requirements to have an impact on their classroom practices were not contacted. As the two programs came to an end and the overall impact of the professional training is what the present study is interested in, only those participants who fully met the consortia's objectives were contacted.

The complete packet that was sent to the 174 participants who met the aforementioned criterion included: 1) a cover letter that describes the purpose and nature of the study in detail; 2) a Teacher Background Questionnaire; 3) the three scales measuring teacher

efficacy, organizational support, and impact, respectively (i.e., the Modified Teacher Efficacy Scale, the Organizational Support Scale, and the Impact Scale; 4) and a self-addressed, stamped envelope for returning the survey back to the researcher. All materials included in the packet were instructed to be returned to the researcher. Teachers who are willing to participate in the study were asked to send back their surveys within 10 days of their receipt of the packet.

G. Calculating Scores for the Three Scales

Teacher Efficacy Scores

To obtain the teacher efficacy score, composite scores were calculated for each teacher on Personal Teaching Efficacy (PTE) and Teaching Efficacy (TE) on the Modified Teacher Efficacy Scale. Items 1, 5, 6, 7, 9, 10, 12, 13, and 15 loaded on Personal Teaching Efficacy for the original scale and items 2, 3, 4, 8, 11, 14, and 16 loaded on Teaching Efficacy. For each item, respondents had to choose one of six choices that range from *strongly disagree* to *strongly agree*, with 1 indicating the extreme of disagreement and 6 indicating the extreme of agreement. As the focus of this study is the overall level of teacher efficacy, only composite scores were of interest.

To calculate the composite score, the mean score was calculated by using the statistical mean for all items in the Modified Teacher Efficacy Scale. The rationale underlying the use of the statistical mean to interpret the level of teacher efficacy stems from the fact that this score is within the measurement range (i.e., 1 to 6) and ties back to the meaning of the original scale. Before calculating the mean scores, the response options of seven items that relate to Teaching Efficacy were reversed in order (i.e., 1 becoming 6, 2 becoming 5, etc.)

because for the Teaching Efficacy items, the more strongly one agrees with an item, the lower one's sense of efficacy. Exception to this is item 14 and accordingly this item was not reverse-scored.

Within this scoring system, the higher the mean score (i.e., the statistical mean of all items), the higher the level of perceived teacher efficacy of the respondent. With a response option ranging from 1 to 6, the closer the mean score of the respondent is to 6, the stronger the efficacy beliefs he or she holds.

Organizational Support Scores

The Organizational Support Scale consists of items related to the support at the school-level with choices ranging from 1 (i.e., strongly disagree) to 6 (i.e., strongly agree). As with the previous scale, the statistical mean of all items were calculated to arrive at the total score. The higher the mean score (i.e., closer to 6), the more organizational support the respondent perceives he or she is receiving. This would indicate that the respondent feels that the school in which he/she is teaching provides more support and assistance for him/her to implement what has been acquired from the professional development programs.

Impact Scores

Because all three scales used in the present study utilized the same response format (i.e., six options related to the level of agreement/disagreement), the scoring procedure is similar for all three scales. Therefore, the impact scores were derived from calculating the mean score for all the items within the Impact Scale. The score range is from 1 to 6, with

mean scores indicating the respondent's level of agreement with regards to the questions assessing the impact level. The higher the score (i.e., the closer the mean score is to 6), the stronger the level of impact. In other words, higher scores indicate that the respondent is implementing more of what he/she has acquired from the professional development experiences.

H. Data Analyses

Overview

A framework for entering and analyzing the present survey data was created using SPSS version 13.0. Ninety responses were entered into this program and all statistical analyses reported in this study were conducted using this version. Descriptive statistics were run to summarize the numerical data along with frequency distributions in order to better understand the nature of data at hand. Reliability estimates were calculated in order to establish the internal consistency of the scales. Finally, as the main research questions needed to be answered with multiple regression analyses, assumptions regarding the use of these types of analyses were examined.

Addressing the Research Questions

To address research question one, raw data were reported and interpreted descriptively. This procedure follows from the recommendation of Cooper and Good (1983, quoted in Gibson & Dembo, 1984) in cases where pilot nature of the investigation is recognized.

Research questions two through seven were addressed by using multiple regression analyses. As noted previously, teacher efficacy and organizational support were

hypothesized to be the two major factors (i.e., independent variables) in predicting the variation in the level of impact of professional development programs regarding teachers' use of new knowledge and skills (i.e., the dependent variable), on the basis of both theory and empirical studies. The selection of independent variables via the guidance of theory and research is in accordance with what Tabachnik and Fidell (2001) recommend when using multiple regression analyses.

The effects of these two independent variables were investigated in the context of controlling for one of the teacher characteristics (i.e., years of teaching experience). Furthermore, the exploration of interaction effects (i.e., among the independent variables and teaching experience) was also built into the regression model.

Multiple Regression Analyses

Using sequential regression, teacher efficacy was entered into the equation first to see the role this variable played in predicting the impact of professional development on its own. Teacher efficacy was assigned initial entry based on the finding that teachers with existing strong sense of efficacy choose to participate in professional development programs. Next, organizational support was entered into the equation to see what it added to the prediction of the level of impact above and beyond the contribution of teacher efficacy. As previously mentioned, there were efforts to make the correlation between teacher efficacy and organizational support as small as possible (i.e., to minimize the overlapping variance explained by the two independent variables).

In addition to investigating the simple effects of each independent variable (i.e., Research Questions 2 and 5), the effects of these variables were explored controlling for

years of teaching experience (i.e., Research Questions 3 and 6). Based on frequency distributions, teachers with 1 to 10 years of teaching experience were classified as Low Experience (LOWEXP), teachers with 11 to 20 years of experience as Medium Experience (MEDEXP), and teachers with 20 or more years of teaching experience were categorized as High Experience (HIGHEXP). Finally, questions addressing the interaction effects among the two independent variables and years of teaching experience (i.e., Research Questions 4 and 7) were examined.

Using SPSS version 13.0 for all statistical analyses, the Low Experience group (LOWEXP) served as the reference group in determining whether the effects of the independent variables persisted after controlling for years of teaching experience (i.e., Research Questions 3 and 6) as well as in investigating the interaction effects among the independent variables and years of teaching experience (i.e., Research Questions 4 and 7).

I. Summary of Methodology

This chapter on Methodology provided detailed information regarding the procedures of data collection and analyses. This included the description of participants, instruments used to collect data on variables of interest, and methods of data analyses. In terms of data analyses directly related to the research questions, sequential regression was employed in order to find out if the addition of a new independent variable added to the interpretation of overall variance of the dependent variable.

In conducting these analyses, teacher efficacy was the first independent variable to be tested within the present model in accordance with the type of regression analysis chosen. This is because in sequential regression, the order of entry of independent variables is

assigned by the researcher according to theoretical or logical considerations (Tabachnick & Fidell, 2001). Teacher efficacy was given higher priority of entry on the basis of both theoretical importance (i.e., teacher efficacy being a stronger predictor of teachers' classroom practices than organizational support) and causality (i.e., teachers with an existing strong sense of efficacy chose to participate in the professional development programs).

In addition to delving into the main effects of the two independent variables, years of teaching experience were controlled to see whether analysis within this context made a difference in the explained variance of the dependent variable. This question was addressed by utilizing Analysis of Covariance in a regression format. As a final step, the interaction effects among the two independent variables and years of teaching experience were investigated to see whether the level of prediction changed for subgroups of teachers based on their level of teaching experiences.

CHAPTER FOUR

RESULTS AND ANALYSES

A. Overview

Among the 232 CAC participants, 145 were contacted which resulted in 70 respondents returning their surveys back to the researcher. Among the 68 CSNC participants, 29 were contacted and 24 respondents mailed back their completed surveys. Non-respondents either received an email or an additional survey packet reminding them of their invitation to participate in the study. Overall, the response rate was 65.52 %. Table 4.1 below summarizes the total number of program participants as well as how many among those participants were contacted along with the number and percentage of the returned surveys.

Table 4.1: Number of Participants Contacted and Responded

	Number of Program Participants	Number of Participants Contacted	Number of Participants Responded	Response Rate	Number of Surveys Used for Analyses
CAC	232	145	90	62.07%	70
CSNC	68	29	24	82.76%	20
Total	300	174	114	65.52%	90

Of the 114 responses obtained, 90 responses were entered into the SPSS version 13.0 for further analyses. Twenty-four responses were not selected for further statistical analyses due to one or more of the following reasons: the respondent was no longer teaching; the respondent had answered less than half of the items on any one of the three scales measuring the independent and dependent variables; the respondent was teaching a special education class or in a counseling position; the respondent was teaching a foreign language elective class at the high school level. One teacher of German belonged to the final group and was excluded on the basis that students with limited English proficiency are highly unlikely to select a German class, and therefore that teacher would have had a limited opportunity to implement what he or she had acquired through the professional development program, which is the focus of the present study.

B. Description of the Participants

In terms of gender and race, the majority of the 90 teachers self-identified themselves as being female (*n*=82, 91.1%) and white (*n*=81, 90%). Seventy teachers (77.8%) were participants of the CAC, and 20 teachers (22.2%) had been involved with the CSNC. The finding that most of the respondents were currently ESL teachers (*n*=77, 85.6%) is not surprising given that the CAC and CSNC provided add-on licensure to already certified teachers.

With regard to teaching experience, about a third of the respondents had 1 to 10 years of experience (*n*=33, 36.7%), another third had 11 to 20 years of experience (*n*=30, 33.3%), and the final third had more than 20 years of experience (*n*=27, 30%). In addition,

almost half of the teachers were over the age of 50 (*n*=37, 41.1%), while only 13 respondents (14.4%) were below the age of 30.

The majority of the respondent teachers were currently teaching in elementary schools with 53 teachers (58.9%) teaching at the K-2 level and 45 teachers (50.0%) teaching at the 3-5 level. Twenty-six teachers (29.5%) were teaching at the middle school level (i.e., grades 6-8) and 17 teachers (18.9%) who were teaching at the high school level (i.e., grades 9-12) comprised the smallest group. A few of the teachers were teaching at multiple levels as well as in multiple schools. Table 4.2 provides a summary of the descriptive data on participants with detailed information regarding the aforementioned variables.

Table 4.2: Descriptive Data on Respondent Teachers (*n*=90)

Gender	**Male**	**Female**
Frequency	8	82
Percent	8.9	91.1

Age	**21-25**	**26-30**	**31-35**	**36-40**	**41-45**	**46-50**	**51-55**	**55+**
Frequency	3	10	14	3	4	19	16	21
Percent	3.3	11.1	15.6	3.3	4.4	21.1	17.8	23.3

Years of Teaching Experience	**1-5**	**6-10**	**11-15**	**16-20**	**20+**
Frequency	14	19	11	19	27
Percent	15.6	21.1	12.2	21.1	30.0

Race/Ethnicity	**White**	**Black**	**Asian**	**Hispanic/ Latino**	**Other**
Frequency	81	1	1	4	3
Percent	90.0	1.1	1.1	4.5	3.3

Program	**CAC**	**CSNC**
Frequency	70	20
Percent	77.8	22.2

Teaching Area[1]	**Mainstream**	**ESL**	**Special Area**	**Other**
Frequency	9	77	1	6
Percent	10.0	85.6	1.1	6.7

Grade Level Taught[2]	**K-2**	**3-5**	**6-8**	**9-12**	**Other**
Frequency	53	45	26	17	2
Percent	58.9	50.0	28.9	18.9	2.2

[1] Two teachers were teaching in both mainstream regular class and ESL class. One teacher was teaching ESL as well as Spanish at K-8 grade level. Therefore, percentages do not add up to one hundred.

[2] Several teachers were teaching at multiple grade levels and two teachers did not indicate the grade level they taught. Percentage does not add up to one hundred due to multiple grade levels.

C. Descriptive Statistics for the Three Scales

Composite Scores for the Three Scales

The major variables addressing the research questions of this study (i.e., teacher efficacy, organizational support, and the impact of professional development) will be explored in this section. The composite scores from the Modified Teacher Efficacy Scale, and Impact Scale indicated that overall, all of the respondents indicated levels of teacher efficacy and impact that were above the central point of the six point scale (i.e., a score of 3.5 on both scales). This indicates that respondents were generally more on the agreeing side in their responses to the items, and more agreement in turn implies higher levels of teacher efficacy and impact. For the Impact Scale, several teachers received a composite score of 6, which is the maximum score possible for that scale.

Composite scores from the Organizational Support Scale had the widest range (i.e., 5.25) as well as the largest standard deviation (i.e., 0.87418). Both of these measures (i.e., range and standard deviation) indicate that the composite scores from the Organizational Support Scale are the mostly widely spread throughout the distribution. This indicates a high level of variation among respondent teachers with regard to how much organizational support they perceived from their respective schools.

Table 4.3 contains information on descriptive statistics for the composite scores from the three scales.

Table 4.3: Descriptive Statistics for the Composite Scores (*n*=90)

	Minimum	Maximum	Mean	Std. Deviation
Modified Teacher Efficacy Scale	3.50	5.75	4.5917	.53586
Organizational Support Scale	1.75	6.00	4.8819	.87418
Impact Scale	3.87	6.00	5.3927	.51396

Individual Item Analyses for the Modified Teacher Efficacy Scale

As previously mentioned, an examination of the descriptive statistics for the individual items in the Modified Teacher Efficacy Scale reveals that, overall, respondent teachers received item scores that were above the central point (i.e., 3.5) of the six-point scale. This in turn implies a higher level of teacher efficacy. Exception to this was item number 11, which addresses the home-school connection. With this item, strongly agreeing would relate to a low sense of efficacy only if it meant that teachers thought they could not overcome the influences from children's home. However, it may be possible that teachers feel they could achieve even more if what they did at school was reinforced in the children's home by their parents. In this case, the teachers may have a strong sense of efficacy but feel that they could aspire to even higher goals if parents would support them.

The two items (i.e., numbers 5 and 15) with the highest mean both related to the teacher's efficacy beliefs regarding his or her ability to match the level of the student and the difficulty level of class assignments. Table 4.4 follows with individual items from the Modified Teacher Efficacy Scale and their means and standard deviations.

Table 4.4: Descriptive Statistics for the Modified Teacher Efficacy Scale Scores (*n*=90, Item Range 1-6)

	Mean	SD
1. When a student does better than usual, many times it is because I exerted a little extra effort.	4.83	0.98
2. The hours in my class have little influence on students compared to the influence of their home environment.	4.31	1.23
3. The amount that a student can learn is primarily related to family background.	4.56	1.33
4. If students are not disciplined at home, they aren't likely to accept any discipline.	3.88	1.59
5. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	5.41	0.86
6. When a student gets a better grade than he or she usually gets, it is usually because I found better ways of teaching that student.	4.66	0.91
7. When I really try, I can get through to most difficult students.	4.91	1.00
8. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	4.50	1.30
9. When the grades of my students improve it is usually because I found more effective teaching approaches.	4.81	0.87
10. If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.	4.87	0.84
11. If parents would do more with their children, I could do more.	2.98	1.41
12. 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.	4.70	1.08
13. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	5.24	0.76
14. The influences of a student's home experiences can be overcome by good teaching.	4.49	1.10
15. If one of my students could not do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	5.27	0.82
16. Even a teacher with good teaching abilities may not reach many students.	4.06	1.50

Individual Item Analyses for the Organizational Support Scale

An examination of the individual items for the Organizational Support Scale revealed that item number 3, which asks about the principal's encouragement regarding the implementation of standards in subject matters, had the highest mean (i.e., 5.76) as well as the lowest standard deviation (i.e., 0.50). This may imply the prevalence of the emphasis on standards-based instruction in schools as well as the principals' willingness to encourage teachers to follow this mandate in individual classrooms.

The inverse relationship between the mean score and the standard deviation was evident in item number 7 as well. This item with the lowest mean (i.e., 4.07) and the highest standard deviation (i.e., 1.54) was related to the principal's providing opportunities for observing exemplary teachers working with diverse student population. This might be due to the limited opportunities teachers have in interacting with and learning from each other, as teaching is mostly an isolated profession. It also implies that there is a wide variation among the individual principals in providing these opportunities for teachers when there is no external mandate or pressure to do so.

The following Table 4.5 presents an overview of the items with their descriptive statistics.

Table 4.5: Descriptive Statistics for the Organizational Support Scale Scores (*n*=90, Item Range 1-6)

	Mean	SD
1. My principal encourages me to select subject matter content and instructional strategies that address individual students' learning.	5.26	1.05
2. My principal accepts the noise that comes with an active classroom.	5.14	1.00
3. My principal encourages the implementation of current national/state/local standards in subject matters I teach.	5.76	0.50
4. My principal encourages innovative instructional practices by providing time to implement them.	5.04	1.16
5. My principal enhances my teaching by providing me with needed materials and equipment.	4.83	1.32
6. My principal provides time for teachers to meet and share ideas with one another.	4.56	1.42
7. My principal encourages me to observe exemplary teachers working with diverse students (including ability, ethnicity, linguistic/cultural backgrounds).	4.07	1.54
8. My principal encourages teachers to make connections across disciplines.	5.17	1.08
9. My principal acts as a buffer between teachers and external pressures (e.g., parents).	4.70	1.39
10. My school culture promotes collective responsibility and deprivatization of teaching.	4.45	1.30
11. My school culture encourages risk-taking and experimentation in the classroom.	4.56	1.29
12. My school's cultural norms are in accordance with the value system promoted by the professional development program.	4.92	1.21

Individual Item Analyses for the Impact Scale

All but one item in the Impact Scale received scores above 5 in the six-point scale. The one item with a mean score below 5 (i.e., 4.85) is number 12 and is related to providing inservice activities for other teachers who also worked with ESL students but did not participate in the CAC or CSNC. This item also had the largest standard deviation (i.e., 1.26) reflecting a wide variation in the degree of inservice activities offered by the respondent teachers. This wide variation may be due to the fact that opportunities for teachers to provide inservice activities within their schools are rare and those teachers who provide these services go out of their way to do so by expending extra time and money on their own.

Overall, the teachers who participated in this study experienced a high level of impact from their professional development programs as reflected in both the composite and individual item scores. Table 4.6 summarizes the findings related to the descriptive statistics for the Impact Scale scores.

Table 4.6: Descriptive Statistics for the Impact Scale Scores (*n*=90, Item Range 1-6)

	Mean	SD
1. I now make clearer links between my teaching goals and classroom activities for all my students, including English as a Second Language (ESL) students.	5.50	0.64
2. I now manage classroom structures and activities more effectively for all my students, including ESL students.	5.44	0.69
3. I now use more effective teaching and learning strategies appropriate to the contents I teach for all my students, including ESL students.	5.53	0.62
4. I now use teaching and learning strategies that are more challenging and engaging for all students, including ESL students.	5.47	0.66
5. I am better able to meet the learning needs of my students, including ESL students.	5.64	0.59
6. I now link assessment into the teaching and learning cycle more effectively for all my students, including ESL students.	5.30	0.87
7. I now provide more effective feedback to all my students, including ESL students, to support their learning.	5.33	0.69
8. I now engage all my students in higher order thinking, including ESL students.	5.29	0.72
9. I now access and use materials and resources more effectively.	5.36	0.72
10. I now assist other teachers in my school in improving their teaching skills for all students, including ESL students.	5.22	0.79
11. I pass on ideas from the CAC/CSNC courses to other teachers.	5.11	0.96
12. I help to provide inservice activities related to teaching ESL students for other teachers.	4.85	1.26
13. I now use more effective teaching and learning strategies appropriate to my classroom context.	5.49	0.71
14. I now recognize and respond to student diversity.	5.66	0.64
15. I now take students' prior understanding into account when planning curriculum and instruction.	5.68	0.54

D. Reliability Statistics and Correlations

As shown in Table 4.7, the three scales proved to have an adequate level of internal consistency, as measured by Cronbach's alpha.

Table 4.7: Reliability Statistics for the Three Scales (*n*=90)

	Modified Teacher Efficacy Scale	Organizational Support Scale	Impact Scale
Cronbach's Alpha	0.77	0.92	0.92
Number of Items	16	12	15

In the Methodology section, it was noted that there had been a constant effort to minimize the degree of relationship between the two independent variables (i.e., teacher efficacy and organizational support). This is because in order to enhance the multiple regression model, the independent variables must only have a strong positive correlation with the dependent variable but not be strongly related to each other. This in turn minimizes the shared variance explained by the independent variables. The following Table 4.8 containing correlations among the three variables attests to the efforts made in this study to achieve these conditions.

Correlation between teacher efficacy and impact as well as that between organizational support and impact are both positive and significant at the 0.05 level. However, the correlation between the two independent variables (i.e., teacher efficacy and organizational support) does not reach significance.

Table 4.8: Pearson Correlation among the Three Major Variables (*n*=90)

	Teacher Efficacy	Organizational Support	Impact
Teacher Efficacy	1	0.144	0.266*
Organizational Support		1	0.252*
Impact			1

* $p < .05$, two-tailed.

E. Reporting and Analyzing the Results vis à vis the Research Questions

The first research question was addressed by reporting raw scores for the Modified Teacher Efficacy Scale, and interpreted descriptively. The remaining six research questions were built into a multiple regression model, where the simple main effects of the two independent variables (i.e., teacher efficacy and organizational support) were explored along with years of teaching experience. More specifically, the effects of the two independent variables were investigated in the context of controlling for years of teaching experience as well as in the interaction among the two independent variables and years of teaching experience. Table 4.9, presented in the subsection addressing the first of the multiple regression analyses, summarizes the basic findings related to research questions two through seven.

Research Question One: What is the relationship between the self-selected nature of participants and their level of teacher efficacy?

Because the self-efficacy component of social cognitive theory maintains that people with strong efficacy beliefs will choose to participate in innovative efforts (Bandura, 1997), it was hypothesized that teachers who had self-selected themselves to complete the training offered by the present professional development programs had high levels of teacher efficacy. These teachers, as mentioned previously, were already certified teachers who held teaching positions at the time of applying to the CAC and CSNC. They were not externally pressured or required to participate in these programs.

With this in mind, their decision to participate in the professional development offered by the CAC and CSNC is construed as their willingness to learn more innovative teaching techniques and instructional methods to serve their student population better. However, teachers could have increased their levels of efficacy beliefs after participating in the professional development program even if they did not start out with a strong sense of efficacy. Since there was no pretest to measure the initial level of teacher efficacy, both interpretations are possible.

Table 4.4 containing descriptive statistics for individual items of the Modified Teacher Efficacy Scale indicates that overall these teachers received scores that were above the central point of the six point scale (i.e., a composite score of 3.5 in the Modified Teacher Efficacy Scale). As previously mentioned, exception to this was one item (i.e., number 11) and accordingly, this item deserves further attention.

In the original study conducted by Gibson and Dembo (1984), item number 11 (item number 23 in the original study) loaded on Teaching Efficacy (TE), and this meant that

the more strongly a respondent agrees with this item, the lower his or her sense of efficacy was. This is why this item was reverse scored in this study. However, an exploration into individual respondent data from the present study revealed that respondents receiving a high composite score in the Modified Teacher Efficacy Scale tended to have higher raw scores on this item as well. In other words, strongly agreeing with this item did not imply that the respondent had weaker teacher efficacy beliefs with regard to this item. A careful reading of the item reveals that a teacher who believes parents' cooperative efforts to be one of the essential elements in teaching students does not necessarily indicate that the teacher has a low sense of efficacy. Rather, the teacher may be responding to a need for stronger reinforcement from parents/guardians.

Research Question Two: Does teacher efficacy predict the level of impact of professional development?

Testing the significance of the first of the two independent variables (i.e., teacher efficacy), the results of the regression analyses reveal that the answer to this question is in the affirmative. As Table 4.9 with unstandardized regression coefficients and R^2 values will show more clearly, teacher efficacy does predict the level of professional development impact, $R^2 = 0.071$, $F(1, 88) = 6.683$, $p < 0.05$. This is not surprising given that teacher efficacy was hypothesized to be the strongest predictor of implementation of innovative instructional methods following teacher training programs.

Table 4.9 contains relevant information for answering research questions two through seven and should serve as a reference throughout the analyses of remaining research questions. The values in each cell of Table 4.9 represent unstandardized regression

coefficients. Each column from RQ2 to RQ7 refers to models addressing research question two through research question seven, respectively.

Table 4.9: Regression Models of Professional Development Impact Addressing Research Questions 2 through 7 (*n*=90)

Independent Variables	Models					
	RQ2	**RQ3**	**RQ4**	**RQ5**	**RQ6**	**RQ7**
Teacher Efficacy (TE)	0.255*	0.246*	0.202	0.225*	0.221*	0.239
Organizational Support (OS)				0.128*	0.126*	0.134*
11 to 20 Years of Teaching Experience (MEDEXP)		0.076	-0.592		0.031	-0.335
20+ Years of Teaching Experience (HIGHEXP)		0.042	-0.042		0.030	0.579
TE x MEDEXP			0.145			
TE x HIGHEXP			0.020			
OS x MEDEXP						0.770
OS x HIGHEXP						-0.119
INTERCEPT	4.223*	4.227*	4.422*	3.735*	3.745*	3.625*
R^2	0.071*	0.074	0.078	0.117**	0.118*	0.124

* $p < .05$
** $p < .01$
Note: All regression coefficients are unstandardized.

Research Question Three: Does teacher efficacy predict the level of impact of professional development controlling for years of teaching experience?

Research question three attempted to answer whether teacher efficacy would still predict the level of professional development impact after controlling for years of teaching experience. Before answering this question, the teaching experience variable was divided into three groups after examining the frequency distribution. Following this categorization, teachers with 1 to 10 years of teaching experience were classified into the Low Experience (LOWEXP) group (n=33) and served as the reference group in further statistical analyses. Teachers with 11 to 20 years of teaching experience formed the second group (n=30), which was labeled the Medium Experience (MEDEXP) group. The final High Experience group (HIGHEXP) consisted of teachers with 20 or more years of teaching experience (n=27).

As evidenced by the testing of the regression coefficient associated with teacher efficacy, $t = 2.435$, $p < 0.05$, this variable still contributes to predicting the impact of professional development even after controlling for years of teaching experience. The inclusion of the experience variable renders the overall model to non-significance, $R^2 = 0.074$, $F(3,86) = 2.303$, $p = 0.083$. This indicates that years of teaching experience variable does not add anything to the prediction of professional development impact once teacher efficacy has made its contribution.

Research Question Four: Does teacher efficacy predict the level of impact of professional development for some subgroups of teachers better than others based on years of teaching experience?

Because some studies have shown that teacher efficacy interacts with years of teaching experience (see Ross, 1998), research question four addressed this possibility with regard to predicting the impact level of professional development. The same three groups of LOWEXP, MEDEXP, and HIGHEXP were used in testing the interaction effects between teacher efficacy and years of teaching experience. With LOWEXP as the reference group, the regression coefficients associated with the interaction (i.e., TE x MEDEXP and TE x HIGHEXP) indicate that there is no difference in interaction effects for teacher efficacy and MEDEXP, $t = 0.565$, $p = 0.573$, as well as for teacher efficacy and HIGHEXP, $t = 0.083$, $p = 0.934$, compared to the LOWEXP group.

This result may be due to the fact that almost all of the teachers in this study had high levels of teacher efficacy and there was little variation among the teachers with differing years of teaching experience. Contrary to the findings of some studies where teacher efficacy declined with years of teaching experience, the participants of CAC and CSNC who had more than 20 years of teaching experience still self-reported that they had a strong sense of efficacy. As previously mentioned in addressing the first research question, this may be due to the fact that teachers with existing high levels of teacher efficacy chose to participate in professional development, or the professional development itself could have led to strengthening efficacy beliefs.

Research Question Five: Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy?

Research question five adds the second major independent variable of this study, namely organizational support, to see whether this variable adds to the prediction of variation in the level of impact after teacher efficacy has made its contribution. As shown in Table 4.9 regarding the fifth research question, the testing of regression coefficient associated with organizational support after controlling for teacher efficacy proves to be significant at the .05 level, $t = 2.140$, $p < 0.05$.

The overall model becomes significant at the .01 level after the addition of the organizational support variable, $R^2 = 0.117$, $F(2, 87) = 5.768$, $p < 0.01$. This indicates that organizational support at the school level makes a significant contribution to predicting the level of professional development impact above and beyond the prediction made by teacher efficacy and that the overall model is enhanced by the addition of organizational support variable.

This result is in accordance with the tenets of social cognitive theory, in which it is maintained that even people with strong efficacy beliefs will not choose to transfer their knowledge to performance if they lacked the necessary resources and support (Bandura, 1986, 1997). Therefore, teachers with requisite knowledge and skills still need support at the school level if they are to implement successfully what they know and are able to do in their classrooms.

Research Question Six: Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy controlling for years of teaching experience?

Research question six was based on the assumption that highly experienced teachers may be less prone to the effects of school level support than teachers with few years of teaching experience. More specifically, the hypothesis underlying this question was that teachers who had taught for many years might have devised their own ways to cope with implementing appropriate instructional skills in their classrooms regardless of the support they received in their schools in terms of time, money, and other resources.

The results of the regression analyses reveal that even after controlling for years of teaching experience, as well as teacher efficacy, organizational support at the school level still significantly predicts the level of professional development impact. As shown in Table 4.9, the testing of the regression coefficient associated with organizational support after controlling for teacher efficacy and years of teaching experience points to this fact, $t = 2.047$, $p < 0.05$.

This finding may be taken as evidence regarding the importance of school level support for teachers at various stages of teaching experience. Teachers with many years of teaching experience (e.g., there were 27 teachers with more than 20 years of teaching experience in this study) still need support from their principals and the overall school culture if they are to take advantage of their strong efficacy beliefs as well as effective and innovative instructional methods.

Research Question Seven: Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy for some subgroups of teachers better than others based on years of teaching experience?

Research question seven is based on a similar hypothesis to that of Research question six. It was hypothesized that teachers with the lowest experience would need the most support from their schools in implementing what they have acquired from professional development programs. More specifically, it was thought that organizational support would predict the level of impact of professional development for teachers with 1 to 10 years of teaching experience (i.e., LOWEXP group) the best, after controlling for the effects of teacher efficacy.

The regression analyses pertaining to this research question indicate that organizational support does not predict the impact level for any group of teachers better than others based on teaching experience above and beyond teacher efficacy. In other words, there were no interaction effects between organizational support and years of teaching experience after teacher efficacy had been accounted for. With LOWEXP as the reference group, the testing of regression coefficients associated with the interaction effects between organizational support and teaching experience (i.e., OS x MEDEXP and OS x HIGHEXP in Table 4.5) is non-significant at the .05 level.

In research question number four, it was concluded that there were no interaction effects between teacher efficacy and years of teaching experience. It was also hypothesized that this might be due to the fact that most of the respondent teachers had an intermediate to high level of efficacy beliefs. Exploration of the final research question

reveals that even after controlling for levels of teacher efficacy, organizational support does not interact with years of teaching experience.

F. Summary of Findings

Overall, the results from the present analyses are in accordance with the theoretical framework of this study as well as findings from previous studies. Teachers who self-select themselves to participate in professional development activities generally have strong efficacy beliefs, although there is the possibility that professional development itself leads to increasing the levels of teachers' efficacy beliefs.

Teacher efficacy predicts the level of impact of professional development, which is not surprising as social cognitive theory maintains that efficacy beliefs are the single most important variable in predicting future behavior. Teacher efficacy proved to predict the level of impact of professional development even after controlling for years of teaching experience and did not interact with the latter variable. Possible explanation for this was that teachers in this study all evidenced more than moderate level (i.e., 3.5 on the scale measuring teacher efficacy) of efficacy beliefs.

The addition of organizational support variable increased the prediction power of the model, in accordance with the social cognitive theory. Teachers with strong efficacy beliefs still needed school level support in order for them to implement the new knowledge and skills they had acquired through professional development. Organizational support at the school level was essential in order for the transfer process from acquisition to performance to occur.

After adding the controlling and interacting effects of years of teaching experience, organizational support still proved to be a significant predictor of impact above and beyond teacher efficacy. This implies that years of teaching experience cannot overcome the limitation posed by lack of organizational support at the school level.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

A. Overview of the Theoretical Framework

Before discussing the implications derived from the results of this study, it would be instructive to return to the theoretical framework proposed at the outset. This chapter will therefore begin by addressing the theoretical underpinnings once more.

The basic tenet of the social cognitive theory most relevant to the present study, and especially the self-efficacy component of it, is that at any given instance, behavior is best predicted by the joint influence of self-efficacy and outcome beliefs (Bandura, 1986, 1995, 1997). People with a strong perceived self-efficacy are likely to seek out solutions to their problems and persevere in the face of challenges and obstacles by expending more effort. They believe that what they do makes a difference by having an impact on their surrounding environment.

This very optimistic view of human agency via cognitive mechanisms may give a false impression that all one needs is the self-efficacy belief to take on a challenging endeavor at any given time and place. This neglects one essential aspect of social cognitive theory. Bandura, in his 1986 work, explicitly mentions the importance of external support, including necessary equipment and resources. In referring to disincentives and performance constraints, he argues that perceived efficacy will not be expressed in corresponding actions if people lack the necessary equipment and resources to perform the

behavior adequately. This creates a situation where self-efficacy exceeds the actual performance due to the hindrance caused by external factors (i.e., disincentives, inadequate resources, external constraints, etc.). In this type of situation, self-efficacy may not be a good predictor of actual performance (Smylie, 1990).

Translated into the context of the present study, this means that teachers with a strong perceived efficacy who believe their teaching makes a difference may nonetheless give up trying to perform at his or her best when faced with a lack of external support. Without the appropriate and adequate organizational support at the school level, these highly efficacious teachers, who possess the knowledge and skills to provide high quality learning experiences for their students, may end up wasting their internal resources due to external constraints. This creates an extremely unfortunate situation, especially as so many people invest in increasing teachers' self-efficacy beliefs and professional development only to put these beliefs, knowledge, and skills to waste because of external factors that could be controlled and changed.

B. Discussion of the Research Questions

Research Question One: What is the relationship between the self-selected nature of participants and their level of teacher efficacy?

Analyses from **research question one** delving into the relationship between the self-selected nature of participants and their level of teacher efficacy indicated that teachers who had participated in the professional development programs investigated in this study in fact had high levels of teacher efficacy. This finding is in accordance with Bandura's

(1997) claim that people with strong efficacy beliefs choose to participate in innovative efforts and seek out solutions to their problems.

Although the direction of the influence between efficacy beliefs and professional development is unclear in the absence of baseline data, the important issue is that teachers after completing the present professional development programs held strong efficacy beliefs as they were returning to their classrooms. They believed that they could enhance the learning of even the most difficult and hard to motivate students. This belief is more important than ever as teachers are faced with students who may present unprecedented challenges stemming from linguistic and cultural diversity.

Research Question Two: Does teacher efficacy predict the level of impact of professional development?

Analyses from **research question two,** that delves into the predictiveness of teacher efficacy, reveal that this construct is indeed a strong predictor of the impact of professional development at the classroom implementation level. Answering this research question revealed that teachers who had higher levels of teacher efficacy also reported experiencing higher levels of impact from professional development. Although the teachers in the present study generally indicated high levels of teacher efficacy and impact, where there was variability, it stemmed from a higher level of teacher efficacy being related to an even higher level of impact of the professional development.

As social cognitive theory maintains that efficacy beliefs are the single most important variable in predicting future actions of people (Bandura, 1986, 1997), in order for teachers to use the acquired knowledge and skills gained from their professional development

experiences, they must also have strong efficacy beliefs. Empirically, this finding is in accordance with what Smylie (1988) has found in his study that explored the relationship between teachers' psychological states and the impact of professional development. Using path analysis, this researcher found teacher efficacy to be the most significant predictor of the impact of professional development.

Research Question Three: Does teacher efficacy predict the level of impact of professional development controlling for years of teaching experience?

Answering **research question three** revealed that teacher efficacy maintains its predictive power after controlling for years of teaching experience. Again, this finding confirms the main tenet of the self-efficacy component of social cognitive theory, in which it is maintained that the efficacy belief is the essential variable in predicting the future behavior of people. Merely engaging in a teaching profession for a long time does not automatically lead to a high level of impact after going through a professional development experience. It is teacher efficacy, regardless of how many years a teacher has been teaching, that leads to the use of what is acquired from professional development programs.

Research Question Four: Does teacher efficacy predict the level of impact of professional development for some subgroups of teachers better than others based on years of teaching experience?

Analyses from **research question four** indicated that teacher efficacy did not interact with the years of teaching experience variable in predicting the impact of professional

development. This indicates that teacher efficacy predicts the level of impact of professional development for teachers at all phases of their profession. As mentioned previously, this may be due to the fact that all of the participant teachers in this study reported to have strong efficacy beliefs regardless of how many years they have taught and consequently there was not much variability with regard to teacher efficacy. This finding is contrary to studies where an inverse relationship was found between teacher efficacy and years of teaching experience (see, Ross, 1998), with teacher efficacy decreasing as years of teaching experience increased.

Although based on a limited sample of teachers who self-selected themselves to participate in professional development, the findings from research questions two through four confirm the importance of teacher efficacy as the major predictor variable for the impact of professional development. This in turn is in accordance with the social cognitive theory which posits self-efficacy as the most important variable in predicting future behavior.

Research Question Five: Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy?

The addition of organizational support as the next predictor variable significantly enhanced the regression model, as can be seen from the results of analyzing research questions five to seven. **Research question five**, which asks whether the organizational support variable contributes to predicting the impact of professional development above and beyond teacher efficacy, was answered in the affirmative in the present study. In other words, even after controlling for the effects of teacher efficacy, organizational support still

predicted teachers' self-reports related to their classroom implementation of instructional techniques promoted by professional development.

This finding is in accordance with other studies delving into educational innovation. Sparks (1983), for example, concluded that one of the major factors affecting the success of professional development programs and their implementation is the support coming from administration, including principals. The study conducted by Ingvarson and Mackenzie (1988) also emphasized the importance of follow-up support at the implementation stage that comes after the participants complete their professional development experience.

As mentioned at the beginning of this chapter, these phenomena are also in accordance with the social cognitive theory, which argues that efficacy beliefs are necessary but not sufficient condition in order for acquired knowledge and skills to be transferred to the performance level. People need external support, including materialistic resources, in addition to a strong sense of efficacy, if they are to successfully and effectively put their knowledge and skills to use.

Research Question Six: Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy controlling for years of teaching experience?

As seen from the results of analyses from **research question six**, the effects of organizational support still persisted after controlling for years of teaching experience in addition to teacher efficacy. Teachers with multiple years of teaching experience need both high levels of efficacy beliefs and strong support at the school level just as much as

teachers with only a few years of teaching experience if they are to successfully put to use what they have acquired through professional development experiences.

Research Question Seven: Does organizational support at the school level contribute to predicting the impact of professional development above and beyond teacher efficacy for some subgroups of teachers better than others based on years of teaching experience?

Addressing **research question seven** revealed that organizational support did not interact with years of teaching experience in predicting the impact of professional development on teachers' classroom practices. The effects of organizational support in predicting the level of professional development impact were equal among all of the participant teachers, regardless of how many years they have been teaching.

Overall, the findings from examining the research questions of this study confirm the predictions based on the social cognitive theory, namely the importance of teacher efficacy and organizational support at the school level in influencing the impact of professional development on teachers' use of newly acquired knowledge and skills. Teachers at various stages of their career need both the efficacy beliefs and school level support in order for them to fully implement in their classrooms what they have acquired through professional development.

C. Implications for Practice

The findings from the present study indicated that teacher efficacy is the most important variable in influencing the level of impact of professional development. Therefore, professional development endeavors would be most fruitful when they also aim at strengthening the efficacy beliefs of teachers. This section will provide guidelines for enhancing efficacy beliefs of teachers within the professional development model, based on Bandura's (1986, 1997) self-efficacy theory.

Enactive Mastery Experience

In discussing the foundations of self-efficacy, Bandura (1986, 1997) notes that there are four principal sources of information. The most influential source is enactive mastery experience because they provide authentic evidence of one's capabilities. Therefore, opportunities for teachers to enact their acquired knowledge and skills successfully should be incorporated into professional development programs. Once teachers' efficacy beliefs are firmly established through enactive mastery experiences during professional development, teachers are more likely to persevere when faced with difficulties and challenges and rebound from setbacks (Bandura, 1997) even after they return to their classrooms.

Vicarious Experience

Another important way people come to appraise their efficacy beliefs is through modeled attainments of other people. Professional development programs should therefore aim to provide opportunities for teachers to observe and learn from other exemplary

teachers. In fact, in Chapter Two, it was noted that observation is one of the major models of professional development that benefits both the observed and the observer. A careful attention has to be paid to selecting the modeled performances in this context. Vicarious experience yields the maximum benefit to building efficacy beliefs when the model is perceived by the observer to be comparable with regard to performance capabilities.

Verbal Persuasion

Social persuasion is the third major way that strengthens people's efficacy beliefs. Persuasion that one has what it takes to implement the new knowledge and skills would have the greatest effect if it comes from other participant teachers who are going through the same professional development programs. Therefore, professional development should aim at establishing a firm network among teachers that may provide supportive feedback, which in turn would strengthen the efficacy beliefs of all participant teachers.

Physiological and Affective States

At times, teaching is a stressful job and teachers must learn how to cope with the stress factors so they do not interpret them as their incapability. Therefore, within professional development models, ways to deal with physiological and affective indicators should be incorporated. Teachers could be taught coping strategies that would help them deal with stress should it arise, as well as being informed explicitly that not all states of arousal are indicators of incapability.

D. Suggestions for Further Research

Collecting Baseline Data

In future studies delving into the factors influencing the impact of professional development (i.e., teacher efficacy and organizational support), it would be useful to have baseline data collected on all relevant variables before teachers go through their professional training. As mentioned throughout this study, both theory and empirical research point to two possibilities regarding the relationship between teacher efficacy and professional development. Teachers with already existing strong beliefs of efficacy may have chosen to participate in the CAC/CSNC professional development programs to further their learning and enhance their classroom practices. On the other hand, the professional development experience itself could have led to increasing teachers' sense of efficacy, even those teachers who may not have had an initial strong sense of efficacy.

Similarly, there have been studies (e.g., Tschannen-Moran & Hoy, 2002) indicating that teachers' sense of efficacy may influence their judgment of organizational support. Although the present study has attempted to minimize the correlation between the two independent variables, it would be useful to conduct further studies that compare data on these variables before and after the professional development programs are implemented.

Further Exploration into Professional Development

This study was mainly focused on predicting the impact of professional development from teacher efficacy and organizational support. Therefore, the model used in this study did not include any provision for systematically investigating the quality of the

professional development. Consequently, any variability found in the impact of professional development was attributed to teacher efficacy and organizational support.

There may be aspects of the professional development that contribute to its impact on teachers' behaviors via different routes not captured within the present model. As one example, professional development programs might be organized in such a way that teachers do not gain any new knowledge or skills. In this situation, regardless of the level of teacher efficacy and organizational support, the impact of professional development may be weak. Therefore, exploring the possibility that the quality of professional development may affect the level of its impact on teacher practice would shed more light on the interrelationships among teacher efficacy, organizational support, and the impact of professional development.

Conducting Studies across Disciplines

Social cognitive theory, which forms the basic framework for the present study, maintains that in any given domain of functioning, a person's future behavior is best predicted by the joint influence of efficacy beliefs and outcome expectancies (Bandura 1986, 1997). This was the basis for the hypothesized model of this study, which attempted to predict the impact of professional development on teachers' behaviors with teacher efficacy and organizational support as the major predictor variables. The findings from this study confirmed the theoretical predictions based on the hypothesized model. Furthermore, the major implication from these findings is that in order for teachers to put to use what they acquire from professional development experiences, they must be equipped with both efficacy beliefs and organizational support.

There are other disciplines in which professional development is used as a means to enhance the knowledge and skills of their members (e.g., medicine, business). As is the case with the teaching profession, the ultimate success of professional development depends on whether these new knowledge and skills get translated into performance in the given domains. If social cognitive theory holds true, the impact of professional development within these disciplines should also be best predicted by the participants' efficacy beliefs and the support system within the respective organizations. Therefore, conducting studies across diverse disciplines using the hypothesized model from this study would enhance its generalizability.

E. Concluding Remarks

Given that the ultimate goal of education is the improved learning of *all* students, and that the quality of teachers is the most important factor (Elmore & Burney, 1999) in the pursuit of this goal, many attempts are made to improve the quality of the teaching profession via various professional development programs and activities. The need for preparing teachers to work effectively with *every* student is now recognized as an ever more challenging endeavor given the nature of culturally and linguistically diverse student population (Sykes, 1999). Many professional learning experiences for teachers, including the professional development programs that are the focus of this study, are created specifically with this challenge in mind.

Recognizing the importance of professional development for teachers in improving the learning of all students, many studies have explored the important question of what makes this process of teacher training effective. The present study also sought to find answers to

this important question, but with a few important features that distinguish it from the previous ones.

First, in addressing the topic of professional development for teachers, this study grounded it in a social cognitive theoretical framework. This allowed a priori predictions to be formed based on the theory with resulting findings that have enhanced validity. Second, the focus of the study was on the impact of professional development at the classroom level as this is where the connection between teaching and learning is most obvious and direct.

Finally, taking into account the changing nature of current classrooms in the US, this study specifically investigated the impact of professional teacher training aimed towards meeting the challenges brought forth by increasing linguistic and cultural diversity among student population. The aforementioned considerations allowed predictions to be made based on a theoretical framework with regard to what factors contribute most significantly to the impact of professional development on teachers' use of new knowledge and skills in classrooms that are inhabited by students each of whom bring with them a unique set of characteristics.

APPENDICES

APPENDIX A
TEACHER BACKGROUND QUESTIONNAIRE

Directions. Please answer the following questions that relate to your personal and professional background. The information obtained from your answers will only be used in the form of aggregate data to summarize the distribution of participating teachers.

Please check the appropriate box.

1. Sex: ☐ Male ☐ Female

2. Age: ☐ 21-25 ☐ 26-30 ☐ 31-35 ☐ 36-40
☐ 41-45 ☐ 46-50 ☐ 51-55 ☐ 55+

3. How many years have you been teaching?
☐ 1-5 years ☐ 6-10 years ☐ 11-15 years ☐ 16-20 years ☐ 20+ years

4. Race/ Ethnicity: ☐ White ☐ Black ☐ Asian ☐ Hispanic/Latino ☐ Other

5. Which program were you a participant of?
☐ Carolina Academic Consortium (CAC)
☐ Consortium for South and North Carolina (CSNC)

6. When did you enter into this program? *Please provide the month and year.*
_____ Month _____ Year

7. Please indicate how far along you are in the program.
☐ Finished
☐ Have no plans to finish
☐ Other _____ (*Please specify.*)

8. Are you currently teaching at the K-12 level?
☐ Yes ☐ No

If your answer to the previous question is No, you may stop here. Please send back the survey with the background information you have provided. Thank you!

9. In which of the following areas are you currently teaching?
☐ Mainstream regular classroom
☐ English as a Second Language (ESL)
☐ Special area (e.g., Music, Art, PE)
☐ Other (Please specify) _____

10. What grade-level(s) are you currently teaching?
☐ Kindergarten to second grade
☐ Third to fifth grade
☐ Sixth to eighth grade
☐ Ninth to twelfth grade

APPENDIX B

MODIFIED TEACHER EFFICACY SCALE (Original by Gibson & Dembo, 1984)

Directions. Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement. The 'student' in each statement should include students from the mainstream culture as well as students from linguistic and cultural minority group.

	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. The hours in my class have little influence on students compared to the influence of their home environment.	1	2	3	4	5	6
3. The amount that a student can learn is primarily related to family background.	1	2	3	4	5	6
4. If students are not disciplined at home, they aren't likely to accept any discipline.	1	2	3	4	5	6
5. 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
6. When a student gets a better grade than he or she usually gets, it is usually because I found better ways of teaching that student.	1	2	3	4	5	6
7. When I really try, I can get through to most difficult students.	1	2	3	4	5	6
8. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	1	2	3	4	5	6

9. When the grades of my students improve it is usually because I found more effective teaching approaches.	1	2	3	4	5	6
10. 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
11. If parents would do more with their children, I could do more.	1	2	3	4	5	6
12. 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
13. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.	1	2	3	4	5	6
14. The influences of a student's home experiences can be overcome by good teaching.	1	2	3	4	5	6
15. If one of my students could not 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
16. Even a teacher with good teaching abilities may not reach many students.	1	2	3	4	5	6

APPENDIX C
ORGANIZATIONAL SUPPORT SCALE

Directions. Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement. **The answers should be based on your experiences in the school you are currently teaching.**

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
1. My principal encourages me to select subject matter content and instructional strategies that address individual students' learning.	1	2	3	4	5	6
2. My principal accepts the noise that comes with an active classroom.	1	2	3	4	5	6
3. My principal encourages the implementation of current national/state/local standards in subject matters I teach.	1	2	3	4	5	6
4. My principal encourages innovative instructional practices by providing time to implement them.	1	2	3	4	5	6
5. My principal enhances my teaching by providing me with needed materials and equipment.	1	2	3	4	5	6
6. My principal provides time for teachers to meet and share ideas with one another.	1	2	3	4	5	6
7. My principal encourages me to observe exemplary teachers working with diverse students (including, ability, ethnicity, linguistic/cultural backgrounds).	1	2	3	4	5	6

8. My principal encourages teachers to make connections across disciplines.	1	2	3	4	5	6
9. My principal acts as a buffer between teachers and external pressures (e.g., parents).	1	2	3	4	5	6
10. My school culture promotes collective responsibility and deprivatization of teaching.	1	2	3	4	5	6
11. My school culture encourages risk-taking and experimentation in the classroom.	1	2	3	4	5	6
12. My school's cultural norms are in accordance with the value system promoted by the professional development program.	1	2	3	4	5	6

APPENDIX D
IMPACT SCALE

Directions. Please indicate the degree to which you agree or disagree with each statement below by circling the appropriate numeral to the right of each statement. **The answers should be based on the result of your participation in the Carolina Academic Consortium (CAC) or the Consortium for South and North Carolina (CSNC) Programs.**

	Strongly disagree	Moderately disagree	Disagree slightly more than agree	Agree slightly more than disagree	Moderately agree	Strongly agree
1. I now make clearer links between my teaching goals and classroom activities for all my students, including English as a Second Language (ESL) students.	1	2	3	4	5	6
2. I now manage classroom structures and activities more effectively for all my students, including ESL students.	1	2	3	4	5	6
3. I now use more effective teaching and learning strategies appropriate to the contents I teach for all my students, including ESL students.	1	2	3	4	5	6
4. I now use teaching and learning strategies that are more challenging and engaging for all students, including ESL students.	1	2	3	4	5	6
5. I am better able to meet the learning needs of my student, including ESL students.	1	2	3	4	5	6
6. I now link assessment into the teaching and learning cycle more effectively for all my students, including ESL students.	1	2	3	4	5	6

7. I now provide more effective feedback to all my students, including ESL students, to support their learning.	1	2	3	4	5	6
8. I now engage all my students in higher order thinking, including ESL students.	1	2	3	4	5	6
9. I now access and use materials and resources more effectively.	1	2	3	4	5	6
10. I now assist other teachers in my school in improving their teaching skills for all students, including ESL students.	1	2	3	4	5	6
11. I pass on ideas from the CAC/CSNC courses to other teachers.	1	2	3	4	5	6
12. I help to provide inservice activities related to teaching ESL students for other teachers.	1	2	3	4	5	6
13. I now use more effective teaching and learning strategies appropriate to my classroom context.	1	2	3	4	5	6
14. I now recognize and respond to student diversity.	1	2	3	4	5	6
15. I now take students' prior understanding into account when planning curriculum and instruction.	1	2	3	4	5	6

APPENDIX E
LETTER TO PARTICIPANTS

UNC
SCHOOL OF EDUCATION

THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

CAMPUS BOX 3500
PEABODY HALL
CHAPEL HILL, NC 27599-3500
www.unc.edu/depts/ed

Date

Dear CAC/CSNC Participant:

Professional development for teachers has been widely recognized as one of the most effective ways to promote quality teaching, which in turn leads to enhanced student learning. Despite this wide recognition, there is an absence of a theoretical foundation in which to understand the nature of professional development and to identify factors that might contribute to its success. The purpose of this research study is to investigate the impact of professional development programs for English as a Second Language (ESL) teachers on their classroom practice, and how teacher efficacy and organizational support at the school level relate to this process. Teacher efficacy and organizational support are the two variables of interest in this study and, if you choose to participate, you will be asked to complete two instruments measuring these constructs. You will also be asked to complete an instrument that assesses the impact of the Carolina Academic Consortium (CAC) or the Consortium for South and North Carolina (CSNC) training.

All participants in the CAC and the CSNC are being asked to participate in this study (around 200 people). You are personally invited to participate in this study because you have already been through one of these programs. If you choose to participate, you will be asked to complete a survey packet that **will take you approximately 15 minutes**. A return envelope addressed to the researcher is included in this packet. Each packet will be assigned a tracking code. These codes will be used to track respondents for the sole purpose of sending reminders. All tracking codes will be destroyed prior to any data analysis to protect your identity. After these codes have been destroyed, there will be no way to know who has participated in the study or to know how individual participants responded to items on the survey. The results of this study will be published as a doctoral dissertation and may also be used for further publication and presentations.

Your participation is voluntary and you may decline or withdraw at any time without penalty. You may also choose not to respond to any items of the survey. If you choose to participate in the study, **please return the survey in the return envelope within 10 days of receipt.**

Please contact me with any questions or concerns about the study at (919) 933-9353 or eun@email.unc.edu. You may also contact my faculty advisor, Dr. Heining-Boynton at (919) 962-3035 or ahb@email.unc.edu with any additional concerns you may have.

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Behavioral Institutional Review Board at 919-962-7761 or by email to aa-irb@unc.edu.

Your participation in this study is very important as your answers will contribute to research by shedding light on the nature of professional development and how it may become more effective by considering important and relevant factors.

Thank you very much.

Sincerely,

Barohny Eun
Principal Researcher

Audrey L. Heining-Boynton, Ph. D.
Program Director, CAC/CSNC

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