To What Extent do Professional Training, School Demographics, Teacher Bilingualism, and Teacher Attitude Predict the Instructional Strategies that Elementary School Content Area Teachers use with English Language Learners?

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This dissertation titled
To What Extent do Professional Training, School Demographics, Teacher Bilingualism, and Teacher Attitude Predict the Instructional Strategies that Elementary School Content Area Teachers use with English Language Learners?

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ABSTRACT

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To What Extent do Professional Training, School Demographics, Teacher Bilingualism, and Teacher Attitude Predict the instructional Strategies that Elementary School Content Area Teachers use with English Language Learners?

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Using responses from a survey of elementary teachers from the state of Ohio, this study analyzed the influences of teachers’ professional training (both pre-service training and in-service professional development), teachers’ attitude towards ELLs, teachers’ bilingualism, schools’ percent of ELLs, and schools’ resources (both socioeconomic status and per pupil expenditure) on the instructional strategies that teachers reportedly use with English language learners in content area classes. The researcher mailed packets of questionnaires to a random sample of schools in Ohio with ELL enrollments of 8.9% or higher and asked the principals to distribute questionnaire booklets to each content-area teacher in their schools and to collect and return the completed booklets.

Altogether the principals distributed questionnaires to 960 teachers, and of those teachers, 419 (i.e., 44%) returned the instruments. Data analysis first involved calculation of a variety of descriptive statistics useful for examining the values obtained in response to each item on the questionnaire. Next, bi-variate correlation coefficients provided information about relationships between variables. Finally, multiple regression analyses assisted in answering research questions about the separate and combined associations between the independent variables (as listed above) and teachers’ reported use of
research-based strategies for teaching ELLs. An ancillary analysis, also using multiple regression analysis, examined the association between several independent variables and teachers’ attitude toward ELLs. Because the data were nested, intra-class correlations were calculated to determine whether or not follow up studies using multi-level models would be beneficial.

The study’s major findings were as follows:

- Teachers’ attitude appeared to be a relatively strong predictor of teachers’ reported use of research-based strategies with ELLs.

- The percentage of ELLs enrolled in a school appeared to be a predictor of teachers’ use of a set of research-based strategies with these students. The higher the percentage of ELLs in the school, the lower the reported use of these strategies.

- The ability to speak more than one language appeared to be a significant predictor of teachers’ attitudes toward ELLs.

- Some evidence pointed to the possibility that amount of professional development is a predictor of teachers’ reported use of research-based strategies for teaching ELLs.

- District per pupil expenditure appeared to be a significant predictor of teachers’ attitude toward ELLs.

- Undergraduate preparation, school socioeconomic status (i.e. percentage of students on free and reduced lunch), district per pupil expenditure, teachers’ gender, teachers’ years of experience, school size, and district size had no
apparent association with teachers’ reported use of a set of research-based strategies.

- Teachers’ level of experience appeared to be a significant predictor of teachers’ attitude toward ELLs. The longer a respondent had been a teacher, the more negative was his or her attitude toward ELLs.

Review of these findings in light of earlier related research revealed that the study contributed new insights as well as confirming some findings from previous studies. Disclosure of the study’s limitations provided justification for additional analyses using data from the survey and replication studies using the same research design with larger, more representative samples of teachers. These limitations also supported the need for interpreting findings from the study with caution. Nevertheless, the findings seemed sufficiently compelling to support policy recommendations relating to (1) the use of professional development to influence teachers’ attitudes toward ELLs and the instructional strategies they use with these learners and (2) the requirement that pre-service (and possibly also in-service) teachers acquire some degree of fluency in a second language.

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Finally, I dedicate this dissertation to the memory of my dad, Dr. William D. Rader, who, although he is no longer with us on this earth, I’m sure is celebrating the completion of this dissertation with me in spirit.
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CHAPTER ONE
Background and Rationale for the Study

The face of American schools is changing. Students enrolled in U.S. schools come from ethnically diverse backgrounds, many speaking languages other than English. Learners whose native language is not English but who enter schools in the United States comprise a subgroup known as English language learners (ELLs). In 2002, 3,977,819 English language learners were enrolled in grades K-12 in U.S. public schools. This number represented a 72% increase over the enrollment of ELLs in 1992 (Zehler, Fleishman, Hopstock, Stephenson, Pendick, & Sapru, 2003). Demographers predict that, by the year 2015, more than 50% of all students in K-12 public schools in America will speak a language other than English as their first language (Pearlman, 2002). Spanish-speaking students currently represent the largest group of ELLs, making up 76.9% of the total ELL population in U.S. schools (NCELA, 2007).

With the increasing enrollment of ELLs comes the challenge of meeting the needs of this group of students. Although most English language learners receive some form of English as a Second Language (ESL) service provided by teachers who are specially trained to give this instruction, the number of students who receive mainstream instruction only, without ESL services, is increasing, as a study conducted by Zehler and associates (2003) revealed. Between 1992 and 2002, the percentage of ELLs who received instruction in the mainstream classroom only, without ESL services, increased from 3.5% to 11.7% (Zehler et. al., 2003). These circumstances suggest that the responsibility for teaching ELLs lies not just with specially trained ESL teachers, but
with mainstream teachers as well. Furthermore, because federal policy requires that English language learners be included in statewide assessments keyed to performance standards, mainstream teachers are likely to feel compelled to teach these students the same academic content that they teach other (i.e., non-ELL) students. At the same time, they may also recognize the value of differentiating instruction in order to meet the special needs of students for whom English is not the native language.

Despite significant efforts that schools have been making on their behalf, English language learners have performed less well than their native English-speaking peers on statewide assessments (Ballantyne, Sanderman, & Levy, 2008). Considering this circumstance, school leaders and policy makers might be interested in learning more about how to prepare teachers to provide instruction in ways that promote the success of this group of learners. An emerging body of knowledge speaks to this issue, and some research identifies instructional strategies that work effectively with ELLs.

According to Verplaetse and Miglicacci (2008), for example, the strategy of using graphic organizers gives students a visual representation, which, when accompanied by a verbal explanation, can increase their acquisition of the material. Echevarria and Short (1999) maintain that building on background knowledge and providing comprehensible input are essential to promoting the academic success of ELLs. Building on background knowledge helps students learn new material by linking it to their previous learning and experiences. Providing comprehensible input ensures that information is in a format that can be understood by these students. By suggesting the use of the language experience method to teach reading to ELLs, Perez (2000) also supported the idea of building on
students’ background knowledge. According to Perez, incorporating discussions that center on a student’s prior (i.e., background) knowledge links the student’s experiences to the text he or she is trying to read. Related to reading, yet tied to all academic content, explicit vocabulary instruction is another strategy that some researchers have found to have a significant impact on the success of non-native speakers of English (Carlo, August, McLaughlin, Snow, Dressler, Lippman, et. al., 2004). These authors suggested that, by using interventions such as teaching vocabulary in context, highlighting cognates, and discussing multiple meanings of words, teachers improve the reading comprehension of both ELLs and native speakers of English.

Other researchers stressed the importance of amplifying lessons rather than simplifying them in order to provide rich learning experiences for English language learners. Walqui and DeFazio (2003), for example, recommended that lessons be amplified by adapting and elaborating on the textual material while still using grade level content.

Accommodations that support English language acquisition, such as making directions and expectations extremely clear, giving opportunities for additional practice, and using physical gestures relating to lesson content and classroom procedures, are some of the recommendations made in a report by the National Literacy Panel (2006). Still other instructional strategies that have been identified as promoting the academic success of ELLs include organizing academic content around thematic units and using collaborative learning techniques during group lessons (Garcia, 1991). Garcia also suggested that communication between teacher and student is particularly significant for
ELLs. He recommended, therefore, that teachers check repeatedly with these students to be sure that assignments are clear and that students understand exactly what they are required to do with regard to each learning task.

Although some research-based strategies appear to be effective with English language learners, we do not yet know the extent to which teachers in classrooms where such students are present are using these strategies, and we do not yet know why some teachers use these strategies while others do not. Nor do we understand the contextual conditions that influence general classroom teachers’ use of research-based instructional strategies with ELLs.

Nevertheless, a reading of the related literature suggests that certain conditions have the potential to influence teachers’ use of these strategies. These conditions include the professional training for work with ELLs that teachers have received—either in an undergraduate program or through professional development activities provided by their school systems, the percentage of English language learners enrolled in their schools, their attitudes toward ELLs, their own bilingualism, the socioeconomic status of the schools in which they work, and the resources available at their schools. These likely influences will be reviewed in the following sections.

*Professional Preparation*

Some researchers claim that, in order to provide quality instruction to non-native speakers of English, teachers need to be skilled in the use of various curricular and instructional strategies (e.g., Ballantyne et. al., 2008). Although these skills may indeed be necessary, researchers note that, in general, teachers have not been trained in their use
(Alexander, Heaviside & Farris, 1999, Karabenick & Clemens Noda, 2004; Menken & Atunez, 2001). University preparation and school district professional development programs are ways in which teachers can acquire this kind of training. A report developed by Zehler and associates (2003) nevertheless claimed that “teachers of LEP [i.e., ELL] students are more likely to receive general curriculum materials and general manuals/guides to help them align instruction rather than materials and guides specifically related to aligning instruction for LEP students [i.e., ELLs]” (p. 17). This report also showed that many teachers did not have extensive training in the instruction of English language learners. In a study conducted by Alexander and colleagues (1999), 57% of the teachers surveyed indicated that they needed more training in order to be able to work effectively with English language learners.

In terms of teacher preparation programs, states vary widely in the extent to which they require coursework related to the instruction of non-native speakers of English. Some states have no requirements relating to preparation for teaching English language learners; other states have very specific requirements for coursework relating to the instruction of ELLs (Ballantyne, et. al, 2008). According to Ballantyne and associates (2008), Arizona, California, Florida and New York all require teachers to complete a certain number of credit hours in courses covering instructional techniques appropriate for ELLs. Although such variability in teacher training currently prevails, reforms to the Higher Education Opportunity Act (2008) may put an end to these discrepancies. Revisions to this act, effective January 2008, require that pre-service programs now
prepare prospective teachers to meet the needs of English language learners, among other populations of learners, and to be able to differentiate instruction for these students.

**School Demographics**

As suggested above, states with higher ELL populations (Arizona, California, and Florida, for example) tend to require their teacher preparation programs to include coursework covering methods of teaching ELLs. Because policy makers in these states saw a pressing need, they responded by adding such requirements (Ballantyne et. al., 2008). One might speculate based on the example of these states that other jurisdictions (e.g., cities, school districts) would respond in similar ways. If jurisdictions do, in fact, act in this way, one might also expect to find that teachers in schools or districts with higher percentages of ELL enrollment would be better prepared to teach this group of students than teachers in districts with lower percentages. Moreover, even if schools and districts do not provide special training opportunities, one might expect teachers in schools with high proportions of ELLs to be motivated to find ways on their own to meet the needs of this group of students. These speculations, however, have not been tested empirically, and one aim of the current study is to do so.

**Attitudes Toward English Language Learners**

Teachers’ attitudes may also play a part in determining the instructional strategies they use with ELLs. Researchers Karabenick and Clemens Noda (2004), for example, claimed, “Attitudes are important because they affect teachers’ motivation to engage with their students, which can, in turn, translate into higher student motivation and performance” (p. 56). Teachers’ attitudes toward ELLs may relate to other, more
foundational attitudes, including their attitudes toward students’ native languages (Garcia-Nevarez, Stafford, & Arias, 2005), their confidence in their ability to teach English language learners (Karabenick & Clemens Noda 2004), the belief that the teaching of ELLs is the responsibility of specially trained English as a Second Language (ESL) teachers (Anstrom, 1997; Franson, 1999), and underlying racist and prejudicial beliefs (Pang & Sablin, 2001). Regardless of the origin, teachers’ positive or negative attitudes towards ELLs may affect how they interact with and teach these students and ultimately how well these students perform academically (August & Hakuta, 1997; Cummins, 2000; Diaz-Rico, 2000; Gonzalez & Darling-Hammond, 2000; Gutierrez, 1981).

Although negative attitudes may exist among some teachers, a study by Garcia-Nevarez and associates (2005) found that certain factors seemed to contribute to teachers’ positive attitudes toward ELLs. These researchers concluded that teachers who had received formal training in how to teach this group of learners tended to be more positive toward them. A study conducted by Byrnes, Kiger, and Manning (1996) found that teachers who had earned graduate degrees tended to have more positive attitudes than other teachers toward ELLs. These studies pointed to the possibility that teacher training does indeed influence teachers’ attitudes toward ELLs as well as their beliefs regarding the need to educate these learners in mainstream classes. In order to investigate these possibilities further, I included an ancillary analysis in this study to examine the relationship between the extent of teachers’ preparation to work with ELLs and their attitudes toward these students.
Teachers’ Bilingualism

Teachers’ ability to speak more than just English may also have an impact on their attitudes toward English language learners and the strategies they use for teaching these students (Lee & Oxelson, 2006). Having had the experience of learning a second language, teachers who are bilingual are likely to be sensitive to what ELLs experience. Such teachers may be more likely than others to demonstrate sensitivity towards ELLs by using instructional strategies that promote the success of these learners. Although these possible outcomes of teachers’ bilingualism have not been explored extensively, one study of K-12 public school teachers in California found that teachers with proficiency in a language in addition to English were more sensitive to the needs of ELLs than teachers who did not have this same background and experience (Lee & Oxelson, 2006).

Resources

Another condition that may be associated with the instructional strategies that teachers use with English language learners is the extent to which their schools have adequate resources to support instruction. Their schools’ level of resources, moreover, may be associated with the socioeconomic status (SES) of the students that their schools serve. According to Renchler (1992), students of low socioeconomic status are often clustered in schools that are grossly under-funded because of the property tax base on which school funding depends. Wealthier districts with high property values tend to be able to fund their schools at higher levels, resulting in more financial support on a per-pupil basis. Researchers Betts, Zau, and Rice (2003) found that students in the lowest
SES schools were much more likely to belong to minority groups, to be English language learners, or to have parents with low levels of education.

The resources available to schools may influence such potentially important variables as school size and teacher qualifications (Rubenstein, Schwartz, Steifel, & Amor, 2007). Included in the category of teacher qualifications are: (1) the extent and relevance of teacher training, (2) years of experience, (3) teacher certification, (4) field of study in college, and (5) highest academic degree. Teachers’ qualifications, as operationalized by these indicators, moreover, may have an influence on their ability or proclivity to use research-based instructional strategies with ELLs. Illustrating such dynamics, some research has shown that more highly qualified teachers tend to be employed by more affluent communities and less well qualified teachers by less affluent communities. A study conducted by Betts and associates (2003), for example, found that construing teacher qualifications in various ways, teachers in lower SES schools were considerably less well qualified than teachers in higher SES schools. If their overall qualifications do indeed influence their ability to work with ELLs, one would suspect that teachers in schools serving low-SES students would be less likely than their peers in more affluent schools to use research-based instructional strategies with ELLs.

Although, as was suggested above, the SES of the students that a school serves has some influence on school resources (including teacher qualifications), community SES and per pupil expenditure typically are correlated to only a limited degree.¹ A reason for this modest association might be that districts serving low-SES students do not just

¹ For example, with data from the Ohio Department of Education, my dissertation chair and I computed bi-variate correlations between per pupil funding and community socioeconomic status (using a composite variable). The resulting correlation coefficient of .097 was small but nevertheless statistically significant.
depend on local property taxes but also receive support from the federal government through Title I, special education, or other types of categorical funding. Because of the modest correlation between community SES and per pupil expenditure and the dynamics that might be producing such unexpectedly modest correlations, I chose to include both measures of resource capacity in the models used to answer this study’s research questions.

Statement of the Problem

The increase in ELL enrollment in American schools has given teachers responsibility for instructing students who speak little or no English. According to the 1993-1994 Schools and Staffing Survey (National Center for Education Statistics, 1997), 42% of all public school teachers had at least one ELL in their classrooms. Although more recent statistics are not yet available from the federal government, the increase in ELL enrollment as a whole has likely resulted in an increased percentage of teachers who now work with ELLs. Moreover, because an achievement gap exists between non-native English speakers and their native speaking peers, many believe that teachers need to acquire special skills for providing high-quality education to this group of students (e.g., AERA, 2004; Ballantyne et. al., 2008; Mora, 2009). Nevertheless, even though they are responsible for the progress made by ELLs, teachers may not be trained in, or even aware of, research-based instructional strategies for teaching non-native English speakers. In a study conducted by Alexander and colleagues (1999) a significant percentage of teachers indicated that they needed more information in order to help ELLs achieve high levels of performance.
Research Question

The following overarching research question guided the study: In consideration of appropriate statistical controls (i.e., school size, district size, teachers’ gender, and teachers’ years of teaching experience\(^2\)), to what extent are elementary content area teachers’ professional training (i.e., pre-service training and professional development), attitudes, bilingualism\(^3\), and their schools’ resources (i.e., SES and per pupil expenditures), singly and in combination, associated with their reported use of a set of research-based strategies for teaching English language learners? This research question implicated several other, more narrow, questions:

1. To what extent does their amount of undergraduate training for working with ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

2. To what extent does their amount of professional development for working with ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

3. To what extent does their bilingualism or monolingualism predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

\(^2\) In this study “years of teaching experience” was used in place of “teachers’ age” as a statistical control variable. Years of teaching experience correlates highly with teachers’ age, and teachers in both the pilot study and the actual study appeared to be far more willing to report information about their years of teaching experience than they were to report their age.

\(^3\) In this study bilingualism refers to the ability to speak two or more languages.
4. To what extent do their attitudes toward ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

5. To what extent does the percentage of ELLs in their schools predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

6. To what extent does the SES of the students who attend their schools predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

7. To what extent does their districts’ per pupil spending predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

In addition to questions that more narrowly specified the overarching research question were ancillary questions that this research also addressed. These included the following:

1. To what extent does the amount of undergraduate preparation for working with ELLs predict elementary school content area teachers’ attitudes toward these students?

2. To what extent does the amount of professional development for working with ELLs predict elementary school content area teachers’ attitudes toward these students?
3. To what extent does elementary school content area teachers’ bilingualism or monolingualism predict their attitudes toward ELLs?

4. In consideration of relevant control variables, to what extent do personal characteristics (i.e., years of experience, undergraduate preparation for teaching ELLs, professional development for teaching ELLs, and bilingualism) and contextual characteristics of their schools (i.e., school size, SES, percentage of ELLs, and funding levels) predict elementary school content area teachers’ attitudes toward ELLs?

Significance of the Study

The increasing population of English language learners in U.S. public schools presents school districts with the continued challenge of meeting the needs of this special group of learners. According to Ballantyne and associates (2008), teachers’ “pedagogical content knowledge and knowledge of learning must encompass the skills and knowledge to engage ELLs with the content of the discipline” (p. 13). Do teachers possess the requisite knowledge and skills to provide a high-quality education to their ELLs? A definitive answer to this question has not yet been provided by educational researchers. Therefore a study to find out more about the extent of teachers’ reported use of research-based strategies for instructing ELLs will help educators and policy makers better understand this important issue.

Not only will this study provide information about the extent to which teachers use a set of research-based strategies with ELLs, it will also examine conditions that predict teachers’ use of these strategies. Knowledge about which characteristics of
teachers and schools predict more extensive use of such strategies will enable school leaders and policy makers to determine steps they might take to increase the use of these strategies.

For example, one of the independent variables included in this study, relevant professional development for working with ELLs, is something district-level administrators can readily address. If such training does turn out to influence the reported use of research-based strategies, then administrators can arrange to have their teachers receive appropriate training. Speculations about such associations perhaps influenced the policy makers who recently crafted revisions to the Higher Education Opportunity Act requiring that teacher education programs prepare new teachers for working with ELLs.

Teachers’ attitudes might also be addressed, albeit not quite so directly or easily as gaps in professional training. While improved teacher attitudes cannot be legislated by school districts, cultural sensitivity training may play a role in promoting greater understanding and acceptance of ELLs (Walker, Shafer, & Iams, 2004). Conversations with teachers responsible for the instruction of English language learners may also provide administrators with insights into the feelings that teachers have regarding the presence of ELLs in their classrooms. And administrators can intervene on a case-by-case basis with teachers whose negative attitudes might influence their willingness or capacity to use research-based strategies with these students.

While school demographics and teacher bilingualism are not circumstances that can be easily changed, awareness of these possible predictors of teachers’ use of research-based strategies might suggest reasons why such strategies are used less often
than school leaders might hope. This knowledge may assist district administrators in making the decision to select other means to support teachers if those relatively immutable predictors turn out to have significant and powerful associations with the reported use of research-based strategies.

Because the No Child Left Behind Act requires that school districts demonstrate Adequate Yearly Progress (AYP) for all subgroups, district leaders might benefit from acknowledging the crossover that most likely occurs between the economically disadvantaged subgroup and the ELL subgroup. Students who are both economically disadvantaged and ELL quite possibly possess a greater risk than other students of encountering learning difficulties and thereby creating even greater challenges for schools that are trying to meet AYP targets (Ballantyne, et. al., 2008). Under these circumstances, school districts with high ELL populations and low SES levels might be better served than other districts by the decision to provide ESL training, support, and materials to their teachers. Doing so, of course, might be more difficult in districts that have few available resources.

Assumptions and Theoretical Limitations

The purpose of this study was to examine the extent to which professional preparation, bilingualism, attitudes, and various school demographics predict elementary-school content teachers’ reported use research-based strategies with English language learners. An assumption made in this study was that effective teaching, namely the use of certain strategies and the avoidance of others, tends to contribute to increases in the academic achievement of English language learners.
Whereas it might seem self-evident that teachers’ use of research-based strategies would lead to students’ academic success (Darling-Hammond, 2000), the skepticism that underlies inquiry cautions that this claim ought to be treated as an assumption. Notably, some research provides evidence showing that children’s background characteristics and other social factors (e.g., the background characteristics of students in the schools they attend) exert greater influence on academic performance than classroom instruction (e.g., Coleman, Campbell, Hobson, McPartland, Mood, Weinfield & York, 1966). Because of the evidence about the strong influence of background characteristics, researchers need to acknowledge the somewhat tenuous nature of the claim that particular sets of instructional strategies will positively influence academic performance.

Another reason to view the influence as problematic is the fact that, when left to their own devices, teachers do not typically implement the same strategy in exactly the same way (Kurki, Boyle, & Aladjem, 2006). If variability in teachers’ implementation of a particular strategy is sufficiently large, in fact, one might argue that they are not really using the same strategy.

In addition to these general cautions relating to assumptions implicit in all research that treats instructional strategies as discrete, replicable, and influential, I also want to point out some cautions relating to my own predispositions, perhaps even what some might call biases. As an educator, one of my assumptions is that teachers who receive training (e.g., through undergraduate preparation or professional development) in an intervention—such as the research-based strategies of concern in this study—will actually apply the intervention. My experience as an elementary school administrator, in
fact, has led me to conclude that teachers typically do make an effort to use the strategies about which they learn. From this perspective, the failure to use an effective strategy is more likely to result from lack of knowledge than from lack of will.

Although my perspective on teachers’ motives comes from personal experience, many researchers find that evidence from systematic study also supports this perspective. According to Ballantyne and associates (2008), for example, teachers who receive training in the instruction of ELLs are likely to use what they have learned in their daily practice. Other research findings, however, support a different perspective (e.g., Guarino, Hamilton, Lockwood, & Rathburn, 2006). Kurki and associates (2006), for example, found that teachers who learned about instructional strategies did not necessarily apply what they had learned. As this discussion suggests, the linkage between professional learning and actual instructional practice is neither guaranteed nor straightforward.

The assumption that professional learning about instructional strategies (in this case, strategies appropriate for ELLs) contributes to improved practice also has the following corollary: teachers who have not received training in research-based strategies for ELLs will not use such strategies. Nevertheless, we need to recognize the possibility that some teachers may use instructional strategies that work for ELLs even though these teachers have not had explicit training in the use of these strategies. Research comparing teachers who have received professional training with those who have not (e.g., because they have been granted alternative licensure) has shown that some untrained teachers do indeed use effective practices (e.g., Gimbert, Dean, & Sene, 2007).
Associated with the assumptions discussed above are certain conceptual limitations that may influence the applicability of findings from the proposed study. In particular, the extant literature implies that some instructional strategies are effective for working with ELLs, but the literature does not indicate if these strategies are effective with all groups of ELLs or, for that matter, with all children—ELL or not ELL. Although the researchers claim that certain strategies are effective, their claims are based on findings from specific studies with specific groups of students. For example, a study may be conducted with a group of native Spanish-speaking students only rather than with a group of students speaking a variety of native languages, such as the student populations found in many U.S. schools. Results from such a circumscribed study, however, may not generalize to the more complex circumstances that actually confront many schools (e.g., ELLs who speak a variety of languages). As a result, careful consideration must be given to recommended instructional strategies that come from studies involving only one specific group of students. Nevertheless, because this—albeit limited—literature is the only source available to consult, these recommended strategies constitute a major focus of the proposed study.

Summary

The population of English language learners (ELLs) in U.S. schools has increased dramatically over the past several years and will likely continue to grow. Because of this trend and the fact that schools are accountable for the progress of these students, teachers will need to use instructional strategies that help this special group of learners make appropriate academic progress. According to extant literature, some instructional
strategies promote the learning of ELLs--strategies such as using visual and graphic organizers to enhance instruction, communicating in ways that can be easily understood by ELLs, and explicitly teaching vocabulary.

Whereas some research has demonstrated the efficacy of these and certain other strategies for working with English language learners, the extent to which teachers use these strategies is not known, nor is the variability in teachers’ use of these strategies. Furthermore, very few studies investigate why some teachers use these research-based strategies to a greater extent than do other teachers. Nevertheless, extant literature does suggest that certain conditions may influence teachers’ choice to use research-based strategies: undergraduate preparation and professional development, attitudes toward ELLs, percentage of ELLs enrolled in a school, bilingualism, school SES, and per pupil funding.

This chapter provided the background and rationale for a study of conditions influencing elementary-school content teachers’ reported use of research-based strategies for teaching ELLs. In particular, the background literature examined in the chapter supported the following overarching research question: In consideration of appropriate statistical controls (i.e., school size, district size, teachers’ gender, and teachers’ years of teaching experience\(^4\)), to what extent are elementary content area teachers’ professional training (i.e., pre-service training and professional development), attitudes,

\(^4\) In this study “years of teaching experience” was used in place of “teachers’ age” as a statistical control variable. Years of teaching experience correlates highly with teachers’ age, and teachers in both the pilot study and the actual study appeared to be far more willing to report information about their years of teaching experience than they were to report their age.
bilingualism\(^5\), and their schools’ resources (i.e., SES and per pupil expenditures), singly and in combination, associated with their reported use of a set of research-based strategies for teaching English language learners?

The chapter also described why findings from the study were significant and to whom. In particular, findings from this study were significant because they revealed the extent to which teachers reported the use of research-based strategies with ELLs. These findings can help educators and policy makers better understand teachers’ use of these strategies. As well, findings relating to the characteristics of teachers and schools that predict more extensive use of these research-based strategies will enable school leaders and policy makers to identify the steps they might take in order to increase the use of these strategies with English language learners.

Finally, the chapter disclosed certain theoretical assumptions and related limitations. One assumption undergirding the study is the idea that the use of certain research-based strategies will contribute to an increase in academic achievement for ELLs. In addition, one of my assumptions as an educator and researcher is that teachers who receive training (i.e., undergraduate training or professional development) in the use of certain teaching strategies will be likely to incorporate those strategies into their instructional practice. One related limitation of the study is this: although the literature used to inform the construct, research-based strategies has suggested that certain strategies are more effective than others, it has not indicated definitively whether or not these strategies are effective for all groups of ELLs or only for some, nor has it clearly

\(^5\) In this study bilingualism refers to the ability to speak two or more languages.
distinguished between strategies that are effective for ELLs primarily and those that are effective for all groups of students.
CHAPTER TWO

Review of the Literature

The number of English language learners in U.S. elementary schools has increased dramatically over the past two decades. Of all of the subgroups that comprise school-aged populations, non-native English speakers make up the fastest growing segment (Hill & Flynn, 2006).

According to demographic projections, the number of English language learners in schools is likely to continue to increase in coming years. Some projections indicate that by 2015, more than 50% of all students in public schools, grades K–12, will be non-native speakers of English (Pearlman, 2002). Some writers claim that if teachers are to address the needs of these English language learners—those already in schools and the increasing numbers likely to be there in the future—they will need to be able to use instructional strategies and techniques that help such students learn academic content (Cobb, 2004; Dalton, 1998).

Recognizing the issue as relevant to the current and future capacities of the teaching force, policy makers and educational planners might be concerned to learn the extent to which teachers believe they are using instructional approaches that available evidence suggests are effective with ELLs. Furthermore, an understanding of the conditions that influence teachers’ selection of particular instructional methods to use with English language learners will assist educational planners, teacher educators, and school leaders prepare teachers with the tools they need in order to work productively with this group of students. Identifying the conditions that have the most influence on
teachers’ selection of instructional methods may encourage school districts, universities, and state departments of education to refine current practices, professional development programs, and even requirements for teacher licensure.

This chapter reviews the bodies of literature that relate to the learning and teaching of English language learners. In addition it provides a brief review of literature pertinent to an understanding of the influences that teachers’ attitudes, bilingualism, school demographics, and school resources may have on the instructional methods they use with ELLs. Of particular relevance are theoretical and empirical works on first and second language acquisition, research on instructional programs for English language learners (i.e., specialized programs that are designed for use with these students), and normative and empirical literature on the instructional strategies that seem promising as ways to promote the success of non-native speakers of English.

The literature review begins with a brief discussion of the extensive theoretical and empirical literature on first and second language acquisition. This literature has had some influence on educators’ views about how to teach students who are learning a second language. But even if this literature has not had as much influence on teaching practice as one might imagine, common sense does suggest that knowledge about how students learn language ought to be related to our emerging knowledge about how best to teach a second language.

The chapter also includes a brief review of literature on the types of programs that are commonly used with English language learners. This literature reports on models that
educators have designed for use with English language learners in and outside of regular classrooms.

Also included in the review of literature is a discussion of the specific instructional strategies that have been recommended for use with English language learners. This body of literature is of particular importance to a study focusing on the conditions that influence the instructional strategies that elementary school teachers use with non-native speakers. I drew on this literature as the basis for developing questionnaire items about the effective ESL practices that elementary school teachers might use to greater or lesser degrees in their efforts to teach academic content to ELLs.

First and Second Language Acquisition

In this section I discuss theories purporting to explain first and second language acquisition, and I examine connections between the two bodies of theoretical literature as well as their influence on the theory of second language acquisition proposed by Stephen Krashen. I also consider criticisms of Krashen’s theory and the relevance of his theory to my research study.

Theories of First Language Acquisition

Theories of first language acquisition are rooted in two major perspectives. These are the behaviorist perspective, most often attributed to B.F. Skinner, and the innateness or “nativist” perspective, most often attributed to Noam Chomsky. Other behaviorists who have written about language acquisition include Leonard Bloomfield, John B. Watson and O.H. Mowrer; and other nativists who have written about language acquisition include Steven Pinker, Jerry Fodor, and Eric Lenneberg.
Behaviorist theory

Behaviorists offer an explanation of language acquisition in which operant conditioning plays a determining role. Operant conditioning refers to the process of stimulus and response by which humans (as well as other animals) increase certain behaviors because those behaviors are reinforced by something in their environment. In the case of language acquisition, language is the behavior that is reinforced by the response given to an utterance (Moerk, 2000). According to this theory, children learn language when they are rewarded for correct utterances of sounds, words, sentences, and then more complex messages.

The behaviorist perspective focuses attention on environmental factors that are external to the learner. Behaviorism disputes the role of mental processes in learning and instead views learning as “the ability to inductively discover patterns of rule-governed behavior from the examples provided to the learner by his or her environment” (Johnson, 2004, p. 18). Supporters of this position believe that children must be taught language; they do not believe that learning language is a natural process that occurs spontaneously as part of normal child development. Behaviorists contend that children learn the rules of their native languages by imitating what they hear in their homes and communities (Johnson, 2004).

From the perspective of behaviorism, the learning of language (or of anything else) takes place through stimulus-response connections, and appropriate responses become “habits” when they are reinforced (Larsen-Freeman & Long, 1991). As a part of first language acquisition, children learn and retain language “habits”—phonemes.
appropriate in the particular language, language forms (i.e., morphemes), syntax, semantics (i.e., the meanings of words and phrases), and pragmatics (i.e., practical uses of language). With respect to the acquisition of a second language, learners must acquire the habits of the new language. This process is challenging because the habits of the old language may actually differ from and therefore interfere with the process of learning the habits associated with the new language.

Support for behaviorist theory. Support for behaviorism has its roots in somewhat dated research on early language acquisition. In the early 1900s most theorists tended to believe that language acquisition involved a learning process in which imitation played a key role (Moerk, 2000). Bloomfield’s claims about habit formation in first language acquisition provide an example of this perspective (Johnson, 2004). He explained that a child utters and repeats sounds that he or she hears in the environment. The vibrations that the child then feels when he or she repeats each sound reinforce the habit of reproducing that sound. In addition, the child’s caregiver uses a particular word when handling a particular object and the child begins to associate that object with the word the speaker continually utters. The child then responds to the stimulus (i.e., the object) by attempting to repeat the word. When the child utters the word, he or she is rewarded by receiving the object or praise from the caregiver (Johnson, 2004, pp. 19-20; Mitchell & Myles, 2004).

A more recent model of language acquisition, proposed by Narasimhan (as cited in Chandrasekar, 2008), also incorporates some behaviorist tenets. According to Chandrasekar (2008), data collected by Narasimhan and Vaidyanathan supported the
claim that interactions with others are significant in the development of a child’s language behavior. From Chandrasekar’s (2008) perspective, Narasimhan’s model posits that children learn language from their exposure to both speech utterances and non-verbal inputs, such as gestures and pointing. Imitation and rehearsal play a significant role in language acquisition, according to this perspective. The learner’s “language community” also plays a major role. Notably, the model proposes that children acquire language behavior by growing up in a language community and interacting with members of that community; and such interaction inevitably results in the reinforcement of certain language “habits.”

**Criticism of the behaviorist theory.** Critics of the behaviorist theory of language acquisition claim that behaviorism minimizes the role of human cognition by overemphasizing the influence of conditions in the social environment that can be controlled, manipulated, and measured. According to some commentators, moreover, the language behaviors that researchers study are those that match their interests (e.g. Johnson, 2004; Larsen-Freeman & Long, 1991). As a result, the researchers’ preconceptions may have an inadvertent influence on the language behaviors that they observe. For example, subjects’ idiosyncratic responses may be disregarded, while behaviors that match what the researcher is looking for are treated as important.

**Innateness theory**

Unlike Skinner who claimed that language is learned, Chomsky maintained that language acquisition results from an inborn (i.e., innate) characteristic (Moerk, 2000). From the perspective of this theory, language is not dependent upon a child’s external
environment but, rather, emerges naturally as the manifestation of an innate ability. According to Scovel (1998), Chomsky argued that human beings possess a language acquisition device (LAD), more recently referred to as “universal grammar,” within their brains that allows them to develop language, just as they possess a set of mental capabilities that enables them to learn to walk. The environment, on this view, serves only as the “trigger” for the operation of the LAD (i.e., for the emergence of the universal grammar) (Scovel, 1998).

According to Chomsky’s theory of “universal grammar,” knowledge of the properties of grammar is intuitive (Johnson, 2004). In other words, a speaker is able to detect whether or not a sentence is grammatically correct without being able to explain why it is correct or incorrect. Chomsky claimed that, because universal grammar is genetic and grammatical competence is intuitive, children acquire a core set of language capacities, which constitute “the unmarked features of a child’s native-language grammar” (Johnson, 2004, p. 36). This intuitive grammar includes “rules” such as those determining the correct way to construct the past tense of regular verbs. According to Johnson (2004) and Mitchell and Myles (2004), however, Chomsky suggested that certain “marked rules”—such as those relating to irregular verb forms—need to be learned, because they are not part of what children acquire naturally through the intuitive application of universal grammar.

With respect to second language acquisition, innateness theory is subsumed under the larger body of cognitive theory. Although not all researchers in the field agree with all aspects of Chomsky’s theory, his basic principle that language acquisition is a
cognitive process influences the field of second language acquisition to a significant extent (Johnson, 2004; McLaughlin, 1987; Mitchell & Myles, 2004).

Support for innateness theory. Some empirical evidence implying that a LAD might exist supports speculation about this mechanism. Proponents of this theory, for example, report that, despite the amount of linguistic input that children receive on a daily basis, they are rarely rewarded for speaking and sometimes even encouraged not to speak (Johnson, 2004; Mitchell & Myles, 2004). They develop language nonetheless, and this observation (i.e., that language develops in the absence of reinforcement) provides indirect evidence that something else—something associated with natural cognitive development—might be going on.

Criticisms of the innateness theory. According to Moerk (2000), the sharpest criticisms of Chomsky’s nativist theory draw attention to the fact that there is no direct evidence to support it. In other words, no direct evidence confirms that a language acquisition device (or “universal grammar”) truly exists. The presence of such a device is, instead, inferred logically from certain observations of language use. At the same time, no empirical evidence conclusively shows that the LAD (or “universal grammar”) does not exist.

Theories of Second Language Acquisition

As was the case with first language acquisition, two fundamental perspectives dominate the field of second language acquisition. These perspectives mirror theories of first language acquisition in that they have the same general basis as the former theories:
behavioral and cognitive. A third perspective combines tenets from both the cognitive and behaviorist perspectives.

Behaviorist Theories of Second Language Learning

From the 1940s to the 1960s behaviorism was the major theoretical tradition influencing thinking about second language acquisition (Johnson, 2004; Mitchell & Myles, 2004). Behaviorist theory, also referred to as environmentalist theory by some researchers (e.g., Larsen-Freeman & Long, 1991), posits that a person’s experience is more important than innate capacities to his or her second language learning. Attention to the learner’s environment and his or her experiences within the environment provides a way for language theorists to connect some behaviorist perspectives to wider understandings about the social origins of language. Vygotsky’s general law of cultural development, for example, holds that mental functioning (including language) originates in social activities (Johnson, 2004). This linkage (i.e., between the social environment and the development of language) informs the social interactionist perspective of second language acquisition.

The parallel distributed processing (PDP) theory developed by McClelland, Rumelhart, and the PDP Research Group in 1986 also draws on behaviorist perspectives, but it differs from the social interactionist theory (Larsen-Freeman & Long, 1991). The major premise of PDP is that learning is based on the processing of input. This theory suggests that learning a second language is a function of the frequency with which an individual is provided with appropriate stimuli (i.e., inputs). The greater the frequency of
relevant inputs the greater the likelihood that the individual will be able to process those inputs appropriately.

**Cognitivist Theories of Second Language Learning**

According to some scholars (e.g. Johnson, 2004; Larsen-Freeman & Long, 1991; McLaughlin, 1987; Mitchell & Myles 2004), a contrasting body of theoretical literature on second language learning emphasizes cognitive processes. Proponents of this approach focus primarily on the mental processes that are involved in language acquisition; like Chomsky, these theorists focus more on what’s happening in an individual learner’s mind than on the learner as an organism that responds to stimuli or on the learner as a participant in a language community (Mitchell & Myles, 2004). As some scholars note (e.g., Johnson, 2004, Larsen-Freeman & Long, 1991), cognitive theories direct attention to physical characteristics that enable language acquisition, mental processes by which second languages are learned, and developmental stages in the learning of a second language.

Some cognitivists who write about language learning are also constructivists. Learners, according to this perspective, are conscious beings who play an active role in the acquisition of their second language (Larsen-Freeman, 2007). Constructivists emphasize the need for learners to make meaning out of what they encounter, and for this reason many constructivists subscribe to a social interactionist version of learning theory (Johnson, 2004).

A more recent contribution to the cognitive tradition—information processing theory—focuses on the mental mechanisms that enable individuals to process
information. Theoretical propositions associated with this tradition address input of information, output of information, short-term memory, long-term memory, storage of information, and intake—all of which relate to mental processes (Mitchell & Myles, 2004). Information processing models view mental processes as rule-governed and in need of a “hardware system,” the human brain, through which rules can be enacted. These theorists equate the input received by the learner to data entered into a computer; drawing again on the computer analogy, they claim that language input gets processed in predictable ways and in a programmed sequence (Johnson, 2004, p. 84).

**Dialogical Theory**

Along with the two major theories of second language acquisition thus far considered is a third theory that combines some cognitivist and some behaviorist propositions. This theory posits a balance between the internal and external conditions undergirding human experience (Johnson, 2004). According to Johnson, the dialogical framework acknowledges the contribution of social contexts—individuality; intentionality; and socio-cultural, historical, and institutional backgrounds—in promoting cognitive (including linguistic) development. The internal and external conditions experienced by human beings are believed to be united through language, which mediates between an individual’s environment and his or her mental processing. According to Johnson’s interpretation of Vygotsky, an individual’s mental functioning can be understood by studying his or her environment as well as the mental and linguistic activities with which he or she has been engaged (Johnson, 2004, p.16).
Vygotsky’s sociocultural theory. As Johnson (2004) suggested, several authors who have written about socio-cultural theory—a theory that emphasizes the social origin of the human mind—claim that the dialogical perspective has its foundation in Vygotsky’s work. Socio-cultural theory discounts neither the functioning of the mind nor the influence of the environment but rather views both as important conditions enabling learning to occur (Johnson, 2004). This perspective is socio-cultural in that it maintains that the learning of language is dependent upon face-to-face interactions among members of a language community (Mitchell & Myles, 2004).

Notably, Vygotsky argued that the development of the mind is itself a cultural process (Johnson, 2004). He posited a “genetic law of cultural development” (Johnson, 2004, p. 108), explaining that higher mental functions originate in social activities—activities that are necessarily external to the individual (Van Patten & Williams, 2007). According to Vygotsky’s law, humans move from an initial stage in which they are completely controlled by the environment, to the “other-regulated” stage in which mental functioning is dependent upon adult assistance, to the self-regulated stage at which point they take control of their own mental processes (Johnson, 2004, p. 108).

From the socio-cultural perspective, each individual has a background and experiences that are complex and changeable. In turn, each person’s background and experiences affect his or her motivation to engage in learning, including the learning of a second language (Johnson, 2004). This perspective also supports the claim that the different socio-cultural and institutional settings that individuals experience during the
course of their lifetimes give them opportunities to acquire different “voices,” speech
genres, and language competencies. Language, on this view, is a tool of the mind, and
“languaging” involves the use of speech and writing to navigate cognitively complex
activities across different settings (Swain & Deters, 2007). Krashen’s theory (Krashen &
Terrell, 2003), which is discussed in some detail below, provides an example of a socio-
cultural explanation of second language acquisition.

The connections between theories of first language acquisition and theories of
second language acquisition seem evident in the comparison between the two bodies of
theoretical literature. Both have roots in behaviorist and innateness perspectives, with
many second language acquisition theorists offering frameworks that combine ideas from
both of the original theoretical perspectives.

Krashen’s Theory of Second Language Acquisition

Krashen’s (2003) framework of second language acquisition is founded on the
belief that second languages are acquired and not learned. According to Krashen, the
distinction between learning and acquiring language is that, in the case of learning, the
emergence of language would be the result of direct teaching. Acquisition, by contrast, is
the process of developing language that results from exposure to meaningful messages.
Although an individual may have knowledge about the formal properties of a language,
such as verb tenses, Krashen (2003) claims that this knowledge does not lead to the
acquisition of that language. Some types of language learning, therefore, do not really
result in language acquisition.
Krashen’s (2003) theory offers a set of hypotheses to explain second language acquisition. Because two of his hypotheses involve a connection with an internal processor—Chomsky’s Language Acquisition Device—his theory tends to be classified as a cognitive theory. Because his natural order hypothesis suggests that language is acquired in a predetermined way, his framework is also categorized among information processing theories (Johnson, 2004).

Krashen’s four hypotheses. The four hypotheses included in Krashen’s framework for explaining second language acquisition are (1) the natural order hypothesis, (2) the monitor hypothesis, (3) the input hypothesis, and (4) the affective filter hypothesis. In some formulations, moreover, the distinction between language acquisition and language learning is also presented as one of five hypotheses, typically as the first and most fundamental of them all.

The natural order hypothesis, as mentioned previously, suggests that language acquisition occurs in a certain developmental sequence. A study conducted by Dulay and Burt (1974) supported the theoretical claim that language is acquired in a certain order. In their research involving Spanish and Chinese speakers who were acquiring English, these researchers found that certain morphemes routinely appear before others—the plural progressive –ing, the plural –s, and the past tense marker –ed. Whereas researchers have found that morphemes tend to be acquired in a certain order, they have not found a similar predictable sequence for the emergence of phonemes. Researchers have argued that the acquisition of phonemes relates more to the learner’s ability to perceive each discrete sound rather than to any prescribed sequence (Hayes, 2001). Allegedly, a
learner’s perception of a sound leads to his or her ability to produce the sound, and with continued exposure and learning experiences second language learners become more and more proficient at producing those sounds (Bunta, 2005). Because Krashen hypothesized a natural order of language acquisition, his theory implies that there is a mechanism for processing information according to an innate, universal system (in other words, the Language Acquisition Device). This first hypothesis clearly draws on Chomsky’s innateness theory.

The monitor hypothesis posits the existence of certain rules that apply to language for the purpose of monitoring speech. These rules, which are learned through an individual’s verbal interactions with others in a language community, allow the speaker to determine what “sounds right.” This hypothesis implies that language acquisition depends on a combination of the subconscious knowledge of grammar and what is learned about language as a result of formal instruction (Larsen-Freeman & Long, 1991). Krashen (2003) maintained that what someone has learned, that is, his or her conscious knowledge, serves as the “monitor.” But the monitor can be accessed only under certain conditions, namely when the learner knows the applicable grammatical rule and when there is sufficient time for the learner to apply his or her knowledge of the rule (Johnson, 2004, p. 47). In other words, a learner must first be able to slow down and process the information, then mentally apply the grammatical rule, and finally determine whether or not the usage fits the rule. When these steps have taken place, the learner has succeeded in using the “monitor.”
The input hypothesis, which builds on behaviorist assumptions, posits that the acquisition of a second language will occur naturally if the language learner receives comprehensible input through either oral or written channels of communication. Krashen (2003) claimed that, if there is enough comprehensible input, the learner will automatically receive relevant knowledge about grammar and other features of the language. According to Larsen-Freeman and Long’s (1991) interpretation of this hypothesis, language that is received but not understood does not help an individual learn language but rather is just “noise” in the system. In a sense, input might be seen as the stimulus and its comprehension as the response that reinforces language acquisition under the behaviorist formulation. According to Krashen, comprehensible input must be combined with the internal language processor (i.e. Chomsky’s LAD) in order to enable the acquisition of language (Johnson, 2004).

The fourth hypothesis concerns the operation of the affective filter, which, according to Krashen (Krashen & Terrell, 1983), can either allow incoming messages to reach the part of the brain that processes language or block them. Whether or not a student can process a message depends on the emotions he or she is feeling when instruction is taking place. If a student feels comfortable and relaxed in a classroom and with a teacher, the affective filter will allow the message to reach the LAD and therefore to be processed; and only processed messages contribute to language acquisition. If, however, the student is feeling nervous or even bored, the brain will not allow the information to reach the LAD, thereby preventing language acquisition from taking place.
**Criticisms of Krashen’s theory.** Even though Krashen’s (2003) theory of language acquisition has contributed significantly to understandings about second language acquisition, it is not without critics. Most of the criticism focuses on two of his hypotheses: the input and affective filter hypotheses.

According to some authors (Johnson, 2004; Larsen-Freeman & Long, 1991; Mitchell & Myles, 2004), the most frequently disputed part of Krashen’s theory has been the input hypothesis. Critics of this hypothesis take issue with the claim that language is acquired in only one way, through comprehensible input. Whereas Krashen argues for the necessity of comprehensible input, a concept that is seemingly dependent upon external factors, he argues for the existence of an internal mechanism as well—the mechanism for processing language through the activation of the LAD. Supporting both the need for comprehensible input and the mechanism of internal processing, critics say, is contradictory.

Krashen’s affective filter hypothesis has also drawn criticism. According to his theory, the operation of the affective filter can determine whether or not language information is processed by the LAD (Krashen & Terrell, 1983). He maintains, however, that control over the affective filter resides with the learner, and thus the learner is responsible for any emotions that might interfere with the acquisition of language. Critics suggest that factors in the learner’s environment (and beyond the control of the learner) may affect the filter, thus keeping language from being processed by the LAD, and they criticize Krashen for not taking these factors into consideration.
Relevance of Krashen’s theory. Although Krashen’s theory of second language acquisition has received some criticism, it is nevertheless helpful for illuminating the linkages between second language acquisition and second language teaching. For this reason, it is especially relevant to my study. Of particular importance to the study are the comprehensible input and affective filter hypotheses.

The comprehensible input hypothesis speaks directly to the communication and instructional strategies that teachers use with their students. Krashen maintained that the communication that students receive needs to be understandable to them in order to support their language acquisition. This hypothesis has implications for classroom management and instruction in academic content. Teachers may or may not communicate procedural requirements or academic content in ways that are understandable to non-native speakers of English.

Krashen’s affective filter hypothesis also has implications for the teaching of ELLs. According to Krashen (2003), if a student feels comfortable and relaxed in a classroom, his or her likelihood of acquiring the second language is increased. When the student’s affective filter is “down,” he or she is able to process new information through the language acquisition device. This theoretical proposition supports teaching methods that focus on providing students with a psychologically safe environment in which to learn a second language.

Second Language Learners

In this section, I review literature that pertains to students as second language learners and the conditions associated with second language learning. In terms of second
language learning, the discussion focuses on the stages of language acquisition, forms of English, bilingual education programs, and the time required for second language learners to acquire English. This section also includes a discussion of the conditions that influence a student’s acquisition of the English language in particular. Because the acquisition of English is a key to the academic success of an English language learner, teachers might be particularly interested in understanding the conditions that affect English language acquisition. Knowledge of these conditions certainly has the potential to influence the instructional practices that teachers decide to use with these students.

**Stages of Language Acquisition**

Krashen and Terrell (1983) proposed a “natural approach” to second language acquisition, which rests on the assumption that students typically progress through stages as they gain more fluency in a second language. According to this perspective, second language acquisition proceeds in five stages. These stages are pre-production, early production, speech emergence, intermediate fluency, and advanced fluency. In this section I discuss the stages of language acquisition as Krashen and Terrell explained them. See Krashen and Terrell (1983, pp.75-92) for a more complete discussion of the stages.

Krashen and Terrell (1983) called the pre-production stage the “silent period” because, at this phase of the language acquisition process, English language learners are acquiring some knowledge of the language but are not yet speaking it. In their description of language production at this stage, these theorists noted that, during the
silent period, students have minimal levels of comprehension and are able to nod “yes” and “no,” but they do not yet verbalize.

During the next stage, the early production stage, students can provide one- or two-word responses and may participate in conversations using key words or familiar phrases (Krashen & Terrell, 1983, pp. 78-84). Comprehension, during this stage, is limited.

During the speech emergence stage, students can produce simple phrases and short sentences, but they make many errors in grammar and pronunciation. Students at this stage have a receptive vocabulary of approximately 3,000 words and good comprehension, although they frequently misunderstand idioms and jokes.

In the intermediate fluency stage, the student possesses a vocabulary of approximately 6,000 words and makes very few grammatical errors. Comprehension, at this stage, is excellent. The final language acquisition stage, advanced fluency, entails a near-native level of English fluency.

Krashen and Terrell (1983) claimed that English language learners’ progress through each stage adheres to approximate time frames. Generally, students spend at least six months in each of the early stages of language acquisition (preproduction and early production) and between one to seven years at each of the later stages of language acquisition (speech emergence, intermediate fluency, and advanced fluency). If a teacher understands and can identify the stages of second language acquisition, he or she can recognize the stage at which each student is functioning and design instruction that will meet each student’s needs (Haynes, 2007).
Forms of English

As a student acquires English as a second language, two forms of usage develop—often at the same time. Cummins (1981) referred to these two forms as conversational English and academic English. Conversational English is the everyday language that is used socially with friends in informal settings, such as in the neighborhood or on the playground. Academic English is the type of English that is used in the classroom during formal instruction (Hill & Flynn, 2006). Of the two forms of English, conversational English tends to be acquired first (Cummins, 1981).

BICS. Some educators who write about second language acquisition have referred to conversational English as BICS, or basic interpersonal communicative skills (Cummins, 1981). Students use this form of English in social situations, such as in the lunchroom, on the school bus, or talking on the telephone. It is informal and not as challenging to acquire as academic English. Although it is the first form of English to be acquired once a student moves into an English-speaking environment, acquiring social language at a level similar to that of his or her native English speaking peers often takes an English language learner from one to three years (Cummins, 1981, 1986).

CALP. Another name for academic English is CALP, or cognitive academic language proficiency (Cummins, 1981). This type of English is found in written texts in content areas and in many classroom lectures and discussions. CALP demands a high level of understanding on the part of the English language learner. It may take ELLs five to seven years to become proficient in the academic form of English. Moreover, depending on the kind of instruction that students receive, these learners may need as
many as 10 years to acquire grade level proficiency in academic English (Collier & Thomas, 1989). The acquisition of academic English, however, is critical to an ELL’s academic success (Brown, 2004).

Second Language Learners and Bilingual Education

According to numerous authors (e.g., Ballantyne, Sanderman, & Levy, 2008; Garcia & Jensen, 2007; Villegas & Lucas, 2007; Zehler, 1994), educators who work with ELLs need to understand that most English language learners are working toward achieving two language milestones at the same time. These students are working to develop their own native language, the language spoken in their homes, while simultaneously trying to acquire the English language, the language spoken at school. For this reason, English language learners may benefit from support for learning their native language as well as support for learning English, particularly if they do not yet have a solid foundation in their native language (Coltrane, 2003).

As Coltrane (2003) noted, students may not know certain vocabulary words or syntactical or grammatical structures in their native language, thus adding to the challenge of acquiring a second language. Without a foundation in their native language, students may be unable to transfer knowledge about language from their first to their second language. When students lack fluency in their native language, Coltrane suggested, even interpreters or bilingual teacher’s aides might not provide much help. Developing proficiency in a student’s native language, according to Cummins’ (2000) interdependence principle, will result in transfer to the second language if the student is given enough exposure to the second language and has the motivation to learn it. In
other words, Cummins claimed that competent use of a first language results in easier acquisition of a second language.

The interdependence principle, though acknowledged, has apparently been discredited by some of the research on bilingual programs, such as the research reviewed by Rossell and Baker (1996). Their review of 75 studies of bilingual education led these authors to conclude that in general bilingual education is not beneficial, finding instead that non-native speakers seem to learn English best when they are taught using only English. This conclusion differs markedly from the claims made by Cummins and Coltrane. Because bilingual education is a hotly debated policy issue, moreover, cautious interpretation of the empirical evidence seems prudent.

**Time Required for Language Acquisition**

The time required for students who do not speak English as their native language to acquire academic English varies in response to differing conditions. Researchers Thomas and Collier (1997) suggested that the most significant variable for determining how long it will take an English language learner to acquire English is the amount of formal education that the student has previously received in his or her native language.

Their conclusion was supported by evidence from a research study that analyzed data from the student records of over 700,000 language minority students enrolled in five urban and suburban school systems across the United States between 1982 and 1996. The researchers limited their analysis of student records to those of immigrant students who had just arrived in the US and whose academic performance in their countries of origin was at or above grade level. Thomas and Collier (1997) considered these students
to be “advantaged” and anticipated that they would be able to achieve academically in English in a shorter amount of time than other ELLs. The findings of the study showed that students who were between the ages of eight and eleven when they arrived in the United States and who had received between two and five years of academic instruction in their native language took only five to seven years to achieve academic proficiency in response to instruction in English. Students who arrived in the US before they were eight years of age required seven to ten years (or even longer in some cases) to achieve academic proficiency in response to instruction in English. The researchers noted that the only difference between the two groups of students was that the younger children had received less schooling in their native language than the older children.

Because educators’ intention is for English language learners to become proficient in English so as to obtain academic proficiency comparable to that of their native-speaking peers, they need to understand the conditions that influence the time required for these students to become fluent in the language. According to an earlier study conducted by Collier and Thomas (1988), both the age at which ELLs enter the US and their previous schooling can influence the length of time it takes these learners to achieve academically at levels comparable to those of their native-speaking peers.

Conditions Influencing Second Language Acquisition

Some theorists have suggested that particular conditions influence the learning of a second language (e.g., Walqui, 2000). A small body of empirical literature lends some support to several of their claims. In this section I review the theoretical assertions about
conditions that influence second language acquisition and then discuss the empirical literature relating to those conditions.

*Distance from native language.* One condition that appears to influence the learning of English as a second language is the distance between the student’s native language and English (Walqui, 2000). For example, languages such as Dutch and Spanish use the same writing system as English, whereas Arabic and Vietnamese use different writing systems. According to Walqui (2000), students whose native writing systems are similar to English are able to learn the language in a shorter period of time than students whose native writing systems are different.

*Native language proficiency.* Another condition that appears to influence the rate at which ELLs learn English is their level of proficiency in their native languages. Children who are proficient in their native languages tend to acquire English more readily than children who are less proficient. In fact, according to Hakuta (1990), the level of proficiency in a child’s first language directly influences the development of proficiency in the second language. As an example, Hakuta claimed that if a child understands a concept in Spanish, he or she should be able to transfer knowledge of that concept to English without having to re-learn the concept, so long as he or she understands the vocabulary that accompanies the concept.

According to this perspective, older children and adults have an advantage when learning a new language because they have already developed learning strategies in their native languages and have learned language rules and structures that will help them acquire the second language (Zehler, 1994). Such individuals have developed a
foundation for language, unlike younger children who have not yet had the opportunity to develop the same foundation. This same logic suggests that young children may be at a disadvantage when learning a second language, because they do not yet have firm knowledge of certain vocabulary words, grammatical structures, or other features of their native language (Coltrane, 2003).

This perspective, however, differs rather markedly from another perspective on early language learning, which argues that younger learners are superior to older learners in acquiring a second language (Abello-Contesse, 2009). This perspective draws on Lenneberg’s critical period hypothesis, which posits that there is an optimal period for the acquisition of languages (Abello-Contesse, 2009). According to Lenneberg, that period ends at puberty. Supporters of this perspective believe that individuals at ages below the critical period (i.e., puberty) can learn a language to almost native proficiency by simply being exposed to the language (Chiswick & Miller, 2008).

*Conditions related to the learner.* Conditions that affect second language acquisition and are related to the individual learner include the extensiveness of peer pressure, the presence of role models, and the level of home support (Walqui, 2000). According to Walqui, peer groups can influence language acquisition either negatively or positively. If peers value the second language or are speakers of the second language, English language learners may have more motivation to learn the language. If the student’s peer group does not value the second language (English, for instance), then success in learning English may actually alienate the student from his or her peer group, thus making learning the new language undesirable.
Role models can have a similar effect. According to Walqui (2000), role models who demonstrate the value of being proficient in more than one language tend to have a positive effect on the student’s learning of English (or whatever second language he or she is learning).

Home support can affect a student’s acquisition of English as a second language in much the same way. If a child’s parents value both languages, not just their native language, students will be more likely to value English and be motivated to learn to understand and speak it (Walqui, 2000).

Instruction of English Language Learners

Although some instructional practices benefit all students, English language learners face a special set of challenges that may require their teachers to use instructional practices that are adapted to their special needs. Unlike other students, ELLs are not just trying to learn the content of the curriculum, but they are also simultaneously trying to acquire a language that is new to them. This understanding of the challenges facing ELLs is clearly reflected in a 2006 set of standards for English language learners in grades PreK–12. The first of these standards is for English language learners to “…learn to communicate in English for social and instructional purposes during the school day” (Haynes, 2007, p. 16). The acquisition of English is an integral part of schooling for a student who is not a native speaker of the language.

In this section I discuss the instruction of English language learners. This discussion includes a review of programs that focus on teaching English to ELLs, frameworks for teaching academic content to ELLs, research-based strategies that benefit
both native and non-native speakers of English, and instructional strategies designed specifically for the instruction of ELLs.

Programs that Teach English to Non-Native English Speakers

A few instructional programs are designed specifically for teaching English language learners to speak English, and some research to determine their efficacy has been conducted. The two most frequently used programs of this type are bilingual education and English as a Second Language (ESL). Ramirez (1991) also included structured English immersion, early-exit bilingual, and late-exit bilingual programs among the list of those that can be used to teach English to this group of students. In this section, however, I focus on the literature that describes the two most commonly used programs used to teach English to ELLs (cf., Ramirez, 1991).

With bilingual programs students receive instruction in both their native language and English. These programs require teachers who are able to communicate and provide instruction in a language other than English (e.g., Spanish) (Antunez, 2002). Despite Rossell and Baker’s (1996) conclusion that such programs are not effective, a considerable body of more recent research seems to demonstrate their effectiveness. In fact, some recent writers have claimed that bilingual education is the optimal way to teach second language learners. According to Rolstad, Mahoney and Glass (2005), for example, recent empirical evidence has shown that bilingual education is more beneficial for ELLs than English-only programs such as those providing English as a Second Language (ESL) classes. These researchers also cited evidence showing that bilingual education is more effective than English-only programs in promoting students’ academic
achievement in English as well as in their native languages. Ramirez (1991) put forth a similar perspective, stating that instruction in a native language through the fourth grade results in higher academic achievement for non-native speakers of English than instruction only in English.

Researchers who have interpreted the evidence differently, such as Rossell and Baker (1996), have come to the conclusion that programs in which instruction is delivered strictly in English are more effective than bilingual programs. The literature refers to such programs as “immersion” programs. These programs are often used in schools in which ELLs speak a number of different native languages. In these cases, educators need to find one common language to use for content-area instruction, and the logical choice is English (Mora, 2009).

English as a Second Language (ESL) instruction is a model by which students are specifically taught English language skills in reading, writing, speaking, and listening from teachers who have received specialized training in working with English language learners. Schools typically provide ESL instruction via pull-out programs in which students receive special instruction for a prescribed amount of time in settings (e.g., resource rooms) outside of their regular classrooms. This approach requires teachers who have training in teaching English grammar as well as reading, writing, speaking, and listening. Many, though not all, states require teachers of ESL classes to hold specialized licensure, such as the Teaching English to Speakers of Other Languages—TESOL license (Antunez, 2002).
Frameworks for Teaching Academic Content to English Language Learners

Included among the instructional strategies that have been recommended for English language learners are two structured models designed specifically for content teachers to use in working with ELLs. These models are the Cognitive Academic Language Learning Approach (CALLA) and the Sheltered Instruction Observation Protocol (SIOP) model. In this section I provide descriptions of these two models and the foundations on which they are based.

CALLA model. The CALLA model involves the direct instruction of learning strategies to ELLs; it is based on cognitive learning theories in which learners are viewed as active participants in the learning process (Chamot, O’Malley & Spanos, 1993). The intent of this model is to accelerate the transition of English language learners into mainstream classrooms by equipping them with the strategies needed for content area learning. The CALLA model is structured by a lesson framework that combines work on language development, academic content, and specific learning strategies. The model combines grade level expectations and curriculum with explicit instruction in learning strategies. Lessons focus on essential curricular ideas taught in ways designed to elicit higher order thinking skills.

The activities used in this model focus on listening, speaking, reading, and writing. Teachers incorporate these language skills into lessons that are cognitively demanding and that emphasize academic content. As part of this approach, teachers also provide direct instruction in metacognitive strategies that definitely apply to particular content but that may also transfer to other content. Teachers identify the strategies by
name, give explanations about how the strategies will help students learn, and show students how to use the strategies within the context of a lesson. Teachers model each strategy and then give students the chance to practice it with support before asking them to use it independently.

**SIOP.** The SIOP model provides a framework for teaching ELLs that assists content-area teachers in planning, implementing, and reflecting on lesson delivery (Echevarria, et. al., 2004). It focuses on language skills and content standards simultaneously. SIOP emphasizes the preparation, instruction, review, and assessment phases of lesson planning.

Instruction under the SIOP model consists of building background knowledge, providing comprehensible input, and attending to students’ responses. The idea of building background knowledge entails linking new learning to past learning in order to help students construct meaning. Providing comprehensible input refers to the idea of presenting instruction in such a way that English language learners can understand the material. This outcome can be achieved if teachers use language that the students understand as well as using visual aids whenever possible. The SIOP model incorporates the teaching of vocabulary, which, its authors have claimed, is an essential procedure for building background knowledge. The model also promotes student engagement by encouraging the use of hands-on materials and activities to teach content and language skills. This model reflects insights gained through more than 10 years of research conducted by authors Echevarria, Vogt, and Short.
Much of the evidence supporting the SIOP came from action research that was closely tied to professional development for teachers. Teachers and researchers worked together in order to develop an observation tool—the Sheltered Instruction Observation Protocol—which identifies the features of “sheltered instruction.” Originally, in fact, the SIOP was designed to be used as an observation and rating tool for teachers; however, teachers participating in the initiative discovered its usefulness as a tool for lesson planning and reflection. The researchers and participating teachers worked together for two years, after which time they documented the professional growth that could be attributed to the initiative. In particular they saw increased use of the observation tool, growing awareness of how language can be integrated into content area classes, and improved understanding of how to use effective methods of instruction and assessment. Participants also came to realize that significant change takes time. Researchers Echevarria and Short (1999) noted that the teachers who had participated in the study subsequently went on to create learning communities in which they could discuss and play an active role in their own professional growth.

*Research-Based Instructional Strategies*

Some research suggests that certain strategies influence the academic achievement of ELLs (Cortes, 1986). According to several writers (Coltrane, 2003; Garcia, 1991; Zehler, 1994), teachers need to use these strategies when they plan for and deliver instruction to English language learners. Some of these strategies also have positive effects on the achievement of students who speak English as their native language, but others are particularly salient for ELLs (Beckman, 2001; Zehler, 1994).
Strategies that benefit ELLs as well as other learners. Zehler (1994) claimed that ELLs, like most other students, do best when their classroom environments are predictable and welcoming to all students. He explained that students who feel safe and comfortable in their learning environments are better able to attend to instruction than those who feel fearful or confused. By establishing clear rules and consistent structural arrangements, teachers can help students feel comfortable. Showing care and concern for ELLs as well as all other students is also important according to Zehler. This perspective connects closely to Krashen’s affective filter hypothesis, which was discussed above.

From Zehler’s (1994) perspective teachers of ELLs should include instructional activities that maximize opportunities for the use of language. Such opportunities also benefit native speakers, particularly those whose home environments do not encourage extensive and complex language use. According to Zehler, moreover, students need to be given opportunities to participate in communication at their own levels of English proficiency. Cooperative learning provides such opportunities, as does the use of open-ended questions. Researchers recommend these strategies for students with various abilities and needs (e.g., Badger & Thomas, 1992; Burnett, 1995).

The cognitive complexity of learning activities is also something that teachers of ELLs should consider. Dalton (1998), for example, indicated that instruction for English language learners ought to encourage complex thinking. Researchers have also demonstrated that activities requiring higher-order thinking benefit most students (e.g., Pogrow, 1990).
From Dalton’s (1998) perspective, cultivating higher-order thinking in English among students who are just learning the language represents a particular challenge. Nevertheless, the practice of limiting cognitive complexity is likely to have an adverse effect on the academic achievement of ELLs. In fact, some research has shown that “dumbing-down” instruction has a deleterious effect on students with all kinds of learning abilities and special needs (e.g., Lumsden, 1997).

Scaffolding is another approach that some researchers have recommended for ELLs as well as for other struggling learners (e.g., Diaz-Rico & Weed, 2002; Ovando, Collier, & Combs, 2003). Scaffolding involves giving students support while they are learning a new concept but gradually releasing the support as students grasp the concept and become more independent. Scaffolding can be used to help ELLs (as well as other students) make sense of academic assignments because it offers contextual supports such as simplified language, teacher modeling, and visual and graphic depictions of concepts (Gray & Fleishman, 2005). Another scaffolding approach that some writers have advocated for English language learners as well as for native-speaking students who experience learning difficulties involves the use of questions that elicit responses in a completion format rather than questions requiring students to generate long oral or written responses (Gray & Fleishman, 2005; Zehler, 1994). According to several authors, this approach helps ELLs gain confidence in the use of the English language (Diaz-Rico & Weed, 2002; Ovando et al., 2003).

Researchers have also recommended that teachers find ways to connect new learning to diverse students’ (including ELLs’) cultural backgrounds and prior
experiences (Cobb, 2004; Dalton, 1998; Zehler, 1994). When a student links new information to previous learning or experiences, he or she finds it easier to understand the new information and to integrate it into his or her framework of knowledge (Jones, Painscar, Ogle, & Carr, 1987).

In a study conducted by Moll, Velez-Ibanez, and Greenberg (1990), the researchers referred to students’ cultural backgrounds and prior experiences as “funds of knowledge.” These researchers found that students were better at acquiring and retaining new knowledge when it was linked to their already-established “funds of knowledge.” Other constructivist researchers have also reported similar findings with respect to the benefits of linking new concepts to related concepts that students already understand (August & Shanahan, 2006; Cobb, 2004; Coltrane, 2003).

Included among the Five Standards for Effective Pedagogy developed by Tharp, Estrada, Dalton, and Yamauchi (2000; Tharp, 1997) is a standard specifically focusing on the value of instruction that makes connections to students’ previous learning and experiences. This standard (i.e., Standard III) is entitled “Making Meaning: Connecting School to Student’s Lives.” An example of an instructional event that is based on the Five Standards would be an interchange between a teacher and a small group of students in which they pursue an “instructional conversation while collaborating on a cognitively challenging activity contextualized in students’ personal, social, or cultural knowledge and experience” (Tharp et. al, 2004, p.2).

A sizable body of research (e.g., Echevarria, Vogt, & Short, 2000; Estrada & Imhoff, 2001) supports the use of the standards put forth by Tharp and associates because
of the linkage between these standards and valued student outcomes. Some research also has demonstrated the applicability of these standards to the teaching of English language learners (Saunders & Goldenberg, 1999). In Saunders’ and Goldenberg’s study, teachers used instructional conversation and contextualization (i.e., the practice of incorporating personal, social or cultural knowledge and experience) with ELLs in an activity related to reading comprehension and thematic understanding. Of the ELLs whose new learning was built on relevant prior experiences, 69% were successful in learning the new content.

**Research-based instructional strategies specifically designed for ELLs.** In addition to generally effective instructional approaches that also can be useful with ELLs are strategies that have been specifically designed for these students. In this section of the chapter, I discuss these recommended instructional strategies and the studies on which the recommendations are based.

According to Garcia (1991), organization and communication are important characteristics of effective instruction for English language learners. As Garcia suggested, careful instructional organization and functional communication between the teacher and the students help non-native speakers benefit from the schooling experience. Garcia’s recommendation was based on findings from studies conducted in schools whose Latino, American Indian, Asian, and Southeast Asian language minority students were achieving academic success (Cummins, 1986; Garcia, 1988). These studies primarily relied on the case study approach and included schools at the pre-kindergarten, elementary, and high school levels. In the schools included in the studies, the researchers
interviewed parents, students, teachers and principals and made classroom observations in order to assess instructional processes (Garcia, 1991).

In terms of communication, one particularly helpful strategy revealed in these studies was for teachers continually to check with ELLs to clarify the nature of assignments and expectations for their completion (Cummins, 1986; Garcia, 1988). Findings from these studies also demonstrated the benefits of having students work collaboratively in class, keeping individual work to a minimum, and providing instructional support to individual students as well as to small groups of students.

Because language is at the heart of the challenges that ELLs face, instructional practices that support the acquisition of a second language are key to helping these learners succeed in the classroom. Direct vocabulary instruction is essential for non-native speakers because their knowledge of vocabulary lags “…significantly behind their English-speaking peers” (Hill & Flynn, 2006, p. 27).

According to one team of researchers, an enriched vocabulary program was effective in closing the gaps in vocabulary knowledge and reading comprehension between non-native English speakers and native English speakers (McLaughlin et. al, 2000). The goal of the study conducted by McLaughlin and associates (2000) was to examine the influence of a vocabulary program on the reading ability of ELLs. The participants in the study were fourth and fifth grade students in California, Massachusetts, and Virginia. Of the 150 students participating, half were ELLs from Spanish speaking backgrounds and half were native English speaking students. All students were assessed at the beginning and end of the year in order to determine knowledge of the target words
for that year. Students in the intervention group were given 20 to 30 minutes of vocabulary instruction each day. Results of the study indicated that students who received the vocabulary intervention during the first two years of the study learned the target vocabulary better than students who did not receive the intervention. ELLs who received the intervention for four years showed gains of one or two years in vocabulary development and reading comprehension, compared to ELL peers who did not receive the intervention. Although the research demonstrated that an enriched vocabulary program did help ELLs increase their vocabularies, the researchers noted that substantial gains resulted only when the intervention lasted a relatively long amount of time (e.g., throughout the elementary school years).

Possible Influences on the Use of Instructional Strategies

Although research points to instructional strategies that may be effective with English language learners, one might reasonably speculate that all teachers are not using these strategies to an equal extent with this group of students. Understanding what conditions predispose teachers to use these research-based strategies is important in order to take steps toward increasing the frequency with which teachers actually do use the strategies. This study, therefore, examines several conditions with the potential to have moderate to robust associations with (and thereby potentially to be influences on) teachers’ use of research-based strategies for ELLs: teachers’ attitudes, teachers’ bilingualism, teachers’ professional preparation, school demographics, and school resources. A brief review of the literature that speaks to the salience of these conditions is provided below.
Teachers’ Attitudes

Attitudes toward ELLs represent one of the conditions that may be associated with teachers’ use of research-based strategies with non-native speakers of English (Karabenick & Clemens Noda, 2004). This likelihood fits with Karabenick and Clemens Noda’s claim that teachers’ attitudes influence their receptivity to professional development activities designed to prepare them to help ELLs. As these authors suggested, teachers’ negative attitudes may also keep them from implementing strategies to which they are exposed during professional development sessions.

Nevertheless, some studies have shown that teachers’ attitudes toward ELLs can be changed. As Lee and Oxelson (2006) reported, for example, professional development can change attitudes in ways that lead to improved practice (Lee & Oxelson, 2006). According to these authors, the attitudes of teachers who received specialized training in the teaching of English language learners differed significantly from those of teachers who did not receive the same kind of specialized training. With only 69 study participants, however, findings from this study can hardly be generalized. Despite limited evidence, many educators and reformers still subscribe to the view that proper training and positive attitudes about language diversity are necessary if teachers are going to be effective in working with ELLs (Byrnes & Cortez, 1992; Griego, 2002).

Teachers’ Bilingualism

Another possible influence on the research-based instructional strategies that teachers use with English learners might be their own bilingualism. Although little
research addresses the impact of teachers’ bilingualism on the strategies that they use with ELLs, a study performed by Lee and Oxelson (2006) involving K-12 teachers in California public schools suggested that a connection might exist. The study focused on the association between teachers’ experiences with different languages and their attitudes toward ELLs. Nevertheless, as previous discussion has argued, attitudes are likely to have an influence on practices. Following this logic, circumstances leading to more positive attitudes may also lead to the use of more effective practices.

In the Lee and Oxelson (2006) study, data revealed that personal experiences with languages other than English significantly affected teachers’ attitudes toward native language maintenance and bilingualism, resulting in greater sensitivity to issues of diversity. Cultural sensitivity, then, promoted greater interest in addressing the linguistic needs of English language learners—an inclinication with the potential to impact instructional practices. The study found that teachers who were not proficient in another language did not report the same degree of cultural sensitivity. Whereas bilingualism has not been addressed specifically in other studies, several authors have supported the idea that teachers’ sensitivity toward language diversity may contribute to positive attitudes toward English language learners, which, as noted above, may influence teachers’ choices about which instructional practices to use with ELLs (e.g., Byrnes & Cortez, 1992).

**Teachers’ Professional Preparation**

The training that teachers receive prior to entering the classroom may also make a difference in the strategies they use with English language learners. According to Byrnes
and Cortez (1992), teachers must have proper training in order to be effective in working with ELLs. Other researchers have supported this perspective and added that, in order to allow English language learners full access to the curriculum, educators need to know how to adapt traditional instructional methods or supplement the methods that they typically use (Reeves, 2006).

Including training about the instruction of English language learners in pre-service programs for prospective teachers is a recommendation that is supported by several authors (Bollin, 2007; Cho & DeCastro-Anbrosetti, 2005; Haddix, 2008). These authors have suggested that, when prospective teachers receive appropriate training in their undergraduate programs, they will be more inclined to use instructional approaches that promote the success of ELLs. This perspective links teachers’ knowledge to their practice: when they have the knowledge and skills necessary to adapt teaching practices in ways that accommodate ELLs, they will in fact make such adaptations. Perhaps knowing how to teach ELLs in effective ways must be coupled with positive attitudes toward ELLs in order to have a salutary influence on teaching practice.

School Demographics

As suggested earlier, the increase in enrollment of English language learners has created new challenges for educators in U.S. schools. In fact, the increase in the school-aged ELL population points to a high probability that teachers in many U.S. communities now work with students whose native language is not English. Schools that previously had no language diversity are beginning to see increased diversity because of shifts in
population. In some communities, these shifts have been quite dramatic (e.g., U.S. Census Bureau).

According to several writers (e.g., Howard, 2007; Lapkoff & Li, 2007), schools need to respond to changing demographics by assessing and then transforming the instructional practices used with diverse populations. Nevertheless, some researchers point to a mismatch between what works with diverse students such as ELLs and the practices that teachers commonly use (Garcia, Jensen, & Scribner, 2009). One might speculate, however, that the mismatch might produce educational consequences that would eventually prompt teachers to alter their practice. Such consequences would be more evident in schools with larger ELL populations—leading to the speculation, which I will test in this study, that teachers in schools with higher ELL enrollments will be more likely than teachers in schools with lower ELL enrollments to report using research-based strategies for instructing ELLs.

School Resources

The resources that are available to a school or school system may also influence the strategies that its classroom teachers use with English language learners. The availability of resources such as experienced teachers and teaching coaches, up-to-date textbooks, and specialized learning materials does, in general, have an influence on the quality of instruction (Machtinger, 2007). And access to these resources might also affect the quality of the instruction provided to ELLs. Some studies, for example, have shown that class size—a condition related to the number of teachers districts can hire—influences academic achievement (e.g., Wenglinsky, 1997). One might speculate,
moreover, that in the research linking class-size with achievement, teaching practices actually intervene between resources and achievement. In other words, class size influences the instructional practices that teachers can use, which in turn influences students’ learning (Rice, 1999).

Despite research showing the need for sufficient resources, a large body of evidence indicates that the availability of resources varies from school system to school system (e.g., Condron & Roscigno, 2003). Furthermore, some research demonstrates a connection between the socioeconomic status of school districts and the availability of resources (Wenglinsky, 1997). For example, schools with high poverty rates tend to have significantly fewer highly qualified teachers and tend to lose qualified teachers through rapid turnover (Machtinger, 2007). Because the availability of certain resources does appear to affect student achievement, it is likely that their availability also influences the effectiveness of instruction. In fact, as noted above, instructional quality may be the intervening variable that helps explain why the availability of resources (e.g., number of teachers/pupil) has an influence on school performance (Wenglinsky, 1997) even when socioeconomic status is held constant (cf. Hanushek & Lindseth, 2009).

Summary

The increase in the number of English language learners in America’s classrooms has resulted in new challenges for mainstream teachers. Teachers are now faced with students who may not be proficient in English, yet are expected to master the academic content that is presented to them in a language that is not native to them. Classroom teachers are accountable for seeing that these students make progress and are successful
academically. But, for a variety of reasons, not all teachers are likely to be providing the kinds of instruction that promote the success of English language learners. Possible conditions that may distinguish between teachers who do use research-based instructional strategies with ELLS and those who do not are the focus of this study. These conditions relate to characteristics of teachers (namely, their attitudes, bilingualism, and professional preparation) and characteristics of schools (namely, school resources and school demographics.) This chapter included a discussion of the literature relating to these conditions, as well as theoretical and empirical literature that helps contextualize issues implicated in second language acquisition.

The chapter reviewed literature pertaining to first and second language acquisition because the acquisition of English is significant to the success of ELLs in U.S. schools. As the chapter discussed, two theories of first language acquisition predominate: behaviorist theory and innateness theory. Moreover, theories of second language acquisition are similar to those of first language acquisition although some theorists combine ideas from the two original perspectives. Krashen’s theory of language acquisition is one of the most widely cited “combination” theories.

Because the acquisition of language is so integral to the performance of English language learners in mainstream classrooms, educators who work with these students need to understand conditions that influence second language learning. Among the relevant conditions are (1) the stages that language learners go through as they are learning a second language (e.g., pre-production, early production, and so on), (2) forms of English, and (3) the time required for second language learners to acquire English.
Understanding these conditions may help teachers plan activities that respond to students’ different levels of language proficiency. Instruction that is sensitive to emerging language acquisition enables ELLs to participate in classrooms to the extent that they are able. Effective teaching might also depend on an understanding of the various models that are used to integrate language and academic instruction as well as the particular instructional strategies that appear to promote ELLs’ simultaneous learning of English and academic content. The chapter presented two general models: bilingual instruction and English as a Second Language (ESL). It also discussed two frameworks for assisting ELLs learn English: the Cognitive Academic Language Learning Approach (CALLA) and the Sheltered Instruction Observation Protocol (SIOP). In addition, the chapter considered instructional strategies whose efficacy has been supported by empirical research. Strategies such as scaffolding, cooperative learning, the explicit connection between prior knowledge and new knowledge, and activities to cultivate higher level thinking skills are all strategies that are effective for use with ELLs as well as other groups of students. Strategies involving the use of organization and clear communication and those that support second language acquisition, such as direct vocabulary instruction, are particularly beneficial for English language learners.

As the chapter illustrated, the use of strategies that are effective with ELLs may or may not be taking place consistently across all classrooms. Certain conditions may explain the reasons why teachers differ in their use of these research-based strategies. The amount of professional preparation that a teacher has had for meeting the needs of ELLs, whether or not a teacher can speak one or more languages, the attitude that the
teacher has toward this group of learners, the demographics of the school the teacher works in, and the resources available in his or her particular school or district may all be associated with the use of research-based strategies. The chapter ended with a brief consideration of the literature supporting the inclusion of each of these conditions in the regression models that will answer the research questions posed in this study.
CHAPTER THREE

Methodology

Purpose

The purpose of this study was to examine the influence of a number of personal characteristics and contextual conditions on the research-based strategies that elementary school teachers reportedly use with English language learners in content area classes. The personal characteristics of interest included (a) teachers’ attitudes toward ELLs, (b) teachers’ bilingualism, and (c) teachers’ professional preparation for working with ELLs. The contextual conditions included (a) the percentage of English language learners enrolled in the school, (b) the percentage of students in the school who were eligible for free- or reduced-price lunches, and (c) the district’s per pupil expenditure. The research question guiding the study was the following: In consideration of appropriate statistical controls (i.e., school size, district size, teachers’ gender, and teachers’ years of teaching experience\(^6\)), to what extent are elementary content area teachers’ professional training (i.e. pre-service training and professional development), attitudes, bilingualism, and their schools’ resources (i.e., SES and per pupil expenditures), singly and in combination, associated with their reported use of a set of research-based strategies for teaching ELLs?

Methodology

This study involved the administration of a survey to a sample of teachers in Ohio elementary schools with high (i.e., at or above 8.9%) enrollments of English language learners.

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\(^6\) In this study “years of teaching experience” was used in place of “teachers’ age” as a statistical control variable. Years of teaching experience correlates highly with teachers’ age, and teachers in both the pilot study and the actual study appeared to be far more willing to report information about their years of teaching experience than they were to report their age.
learners. Survey research allows for the development and testing of logical explanations related to the association between a set of predictor variables and one or more outcome variables (Babbie, 1990). For the purposes of the current study, this type of research provided an avenue for testing the association between (1) predictor variables measuring teachers’ professional training, attitudes, and bilingualism as well as their schools’ demographics and resources and (2) the outcome variable, teachers’ reported use of research-based instructional practices with ELLs.

Survey methodology also assumes that findings from a representative sample will generalize to the larger population from which the sample was drawn. The sample in this study consisted of a specific subset of teachers in Ohio (i.e., teachers from schools with ELL populations of 8.9% or higher). I acquired this subset of teachers from a list obtained from the Council of Chief State School Officers (CCSSO). The list included only those schools that reported information to the CCSSO. As a result, not all schools in Ohio with ELL populations of 8.9% or higher were a part of this sample. Because the population consisted of teachers in an unrepresentative subset of Ohio elementary schools that have high ELL enrollments, the findings probably do not generalize to elementary teachers other than those in the sample itself.

I compared the characteristics of the schools and districts in the sample (i.e. percentage of students on free or reduced lunch, district per pupil expenditure, school size, and district size) who returned questionnaires to the characteristics of schools and districts that did not return questionnaires. This comparison enabled me to determine if systematic bias might be a concern. Although mean differences between responding and
non-responding schools revealed similar characteristics (with the exception of mean differences for school size), I am cautious about making any claims even concerning the comparability of responding and non-responding schools. Rather, because of evident problems with sampling, I believe the study should be considered exploratory: whereas its findings might suggest relationships that can be tested later through systematic replications of the study with true random samples of teachers, they are hardly definitive.

Studies that appear to produce generalizable findings, according to Babbie (1990), may also acquire greater credibility through replications across several subsets of the same population. Because of threats to the external validity of the current study, replications of the study are definitely needed before any definitive claims can be made about influences on teachers’ use of research-based strategies with ELLs.

Participants.

The population of interest included elementary school teachers in Ohio schools with high percentages of ELLs. Despite the fact that their schools all had comparatively high percentages of ELLs, these teachers nevertheless worked in schools with varying ELL enrollments. Notably, the elementary schools in the top quartile of ELL enrollments varied in their enrollments from 8.9% to 75% ELLs. Teachers in the sample had varying degrees of preparation for working with ELLs, represented schools with varying percentages of students receiving free- and reduced-priced lunches, and represented school districts with different levels of per pupil expenditure.

In the hope that the sample might be somewhat representative of teachers in elementary schools with 8.9% ELL enrollments or higher, I identified teachers through
the use of cluster sampling. The process involved first selecting a random sample of schools from a sampling frame that included Ohio elementary schools with 8.9 or higher percentages of students categorized as Limited English Proficient (LEP). I included elementary schools (in contrast to elementary teachers) in the sampling frame, because the alternative of constructing a sampling frame that included all teachers in every elementary school in the state of Ohio with reasonably high ELL enrollment posed serious logistical difficulties. This kind of cluster sampling provided an efficient way to represent a population whose individual members could not easily be listed for sampling purposes both because of the size of the population and because of limited access to information about individuals in the population (Babbie, 1990).

I developed the cluster sample in the following way. First, using data made available from the CCSSO through SchoolDataDirect (http://www.schooldatadirect.org/) as well as directory information from the Ohio Department of Education, I constructed a sampling frame that included the names and addresses of public elementary schools in Ohio with reported LEP percentages. The operational definition of “elementary school” that I used for this purpose was the following: any school on the CCSSO list that had the phrase “elementary school,” “primary school,” or “intermediate school” in its name. Based on a preliminary examination of the CCSSO list, I found 365 schools that matched this operational definition.

I listed all of these schools in order from least to greatest LEP enrollment, and then identified schools that qualified as having high LEP enrollments. I considered

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2 Only schools in Ohio that shared LEP information with the CCSO were included in the list of schools used in this study; therefore not all elementary and intermediate schools in Ohio were included in this list.
schools with LEP enrollments at or above the 75th percentile to have “high” LEP enrollments. As noted above, these schools had ELL populations of 8.9% or higher.

In order to assure a sufficiently large sample of teachers in schools with a range of high LEP rates, I surveyed the entire population of schools in the “high” LEP category. With a total of 109 schools in the high LEP enrollment category, this approach yielded a potential sample of 2,180 teachers (i.e., considering that, theoretically, there might be 20 teachers per school)³. Because not all schools agreed to participate and because some of those that participated had fewer than 20 teachers, the actual sample (i.e., teachers who returned completed questionnaires) turned out to be 419.

*Instrumentation.*

I used a questionnaire to elicit responses from the teachers in the sample. The questions on the instrument related to two of the three domains that pertained to the study: reported use of research-based instructional strategies for ELLs (i.e., the dependent variable) and characteristics of teachers (i.e., one set of independent variables). I imputed relevant characteristics of schools (i.e. the other set of independent variables) from extant databases maintained by the Ohio Department of Education and the National Center for Educational Statistics.

The questions pertaining to research-based instructional strategies for use with ELLs reflected the three categories of instructional practice identified in Chapter 2. These categories are organization and communication, scaffolding, and vocabulary instruction. Items pertaining to teachers’ characteristics focused on (1) coursework and in-service professional training that the teachers had received in order to prepare them for

³ Some schools employed fewer than 20 content area teachers, which resulted in a smaller sample size.
working with English language learners, (2) teachers’ bilingualism, and (3) teachers’ attitudes toward English language learners. I excerpted questions pertaining to teachers’ attitudes toward English language learners from the “Language Attitudes of Teachers Scale” (LATS) written by Deborah Byrnes and Gary Kiger (1994). I obtained permission from the authors of this instrument in order to include these items on the questionnaire (Appendix B).

Construction of a pilot instrument. Attentive to the content validity of the scales included to measure the dependent variable, I first developed items that related to the instructional practices identified in the previous chapter. These items asked respondents to rate their frequency of use of research-based instructional strategies in the domains of organization and communication, scaffolding, and vocabulary instruction. I also included a few items relating to the instructional considerations for ELLs that I discussed in Chapter 2. I developed items in two ways. First, I asked a panel of three ESL experts to suggest the strategies that they believed were the most important for English language learners. Second, I reviewed pertinent studies in order to identify research-based strategies. Items on the instrument included both research-based strategies that are effective with students in general, and research-based strategies that are particularly effective for ELLs. Appendix F shows the categorization of these items (i.e., as “of general benefit” or “ELL specific.”

In addition to items relating to the constructs of interest, the pilot questionnaire included three questions that allowed respondents to comment on the comprehensibility, readability, and ease of answering the items. I included these questions so as to allow
respondents an opportunity to communicate information about items that they may have found ambiguous or difficult to interpret. I used the responses to these questions to identify less effective items, for example, items that might need to be re-worded or removed from the final instrument. I did not ask respondents to comment on the attitude items because these items came from an instrument that had been used in previous studies.

Before I administered the pilot version of the questionnaire, I asked the members of the expert panel to review the items that I had written or adapted. My intention in doing so was to seek their judgment about whether or not the sets of items provided accurate representations of the constructs (e.g., reported use of instructional practices, teachers’ attitudes, and so on) I was seeking to measure. The panel did not recommend any changes to the items, but felt they were ready to use “as is.” Based on their comments, I retained all of the items regarding instructional strategies with their original wording.

The panel of experts. I chose experts based on their experience in the field of ESL, teaching experience with English language learners, and experience providing training to teachers on research-based instructional practices. These experts were Virginia Rojas, Brenda Custodio, and Rebecca Hughes.

- Virginia Rojas has degrees in language education, TESOL (Teaching of English to Speakers of Other Languages), and educational philosophy from Ohio State University and Rutgers University. Dr. Rojas is a presenter for the
Association for Supervision and Curriculum Development (ASCD) and has facilitated training for teachers in the area of English as a Second Language.

- Brenda Custodio, currently a principal employed by the Columbus City Schools, Columbus, Ohio, has a Ph.D. in TESOL/Children’s Literature from Ohio State University, and has taught courses in TESOL for Ohio State, as well as ESL-related courses at Ashland University and Ohio Dominican University.

- Rebecca Hughes is currently an ESL facilitator for the Westerville City Schools in Westerville, Ohio. She has a master’s degree in elementary education from the University of Toledo and a TESOL endorsement from Ohio Dominican University; she is also a SIOP trainer.

In order to determine if the items I included on the instrument fully and accurately reflected the strategies that ELLs need in order to be successful in content area classrooms, I asked each expert to identify three strategies that she believed were effective with these students. Their overlapping responses included the following: using graphic organizers and visuals; building background knowledge by pre-teaching vocabulary and scaffolding for meaning; and promoting the use of language through cooperative learning, interactive support, and repetition. Because the strategies identified by the expert panel could clearly be subsumed under the set of research-based strategies that I had identified in the education literature, I concluded that sufficient evidence supported the instrument’s content validity for measuring teachers’ reported use of research-based strategies with ELLs. As well as suggesting relevant strategies, each of
the experts reviewed the pilot instrument, and none of them suggested that any changes should be made. All offered comments to the effect that the instrument was acceptable and ready to use as written.

*Pilot study.* Prior to conducting the survey of teachers from a cluster sample of Ohio elementary schools, I conducted a pilot study in one Ohio district, whose elementary schools were then eliminated from the sampling frame. The purpose of the pilot study was to help me determine which items worked best to measure the constructs that the study was investigating. I administered the pilot questionnaire to elementary teachers in one central Ohio school system with an enrollment of approximately 14,250 students, 8.7% of whom were English language learners. The sample surveyed for the pilot study consisted of 259 classroom teachers, with 171 of these teachers actually completing questionnaires. Before the principals distributed the questionnaires, I used an administrative staff meeting as an occasion for discussing the instrument with them and arranging for their cooperation in administering the questionnaire. I then delivered copies of the questionnaire forms to the districts’ elementary school principals and collected the forms once the teachers at each school had completed them.

Based on the analysis of data from the pilot study (reported in Chapter 4), I selected items for the questionnaire that I used to collect data from the larger sample of teachers who participated in the actual study. I selected the items that were most easily understood by teachers as well as those that worked best to measure the relevant constructs and reveal variability across teachers.
The items on the pilot questionnaire included a few that elicited demographic information, although most items related to the three instructional domains emphasized in the related literature. I also included 13 items pertaining to teachers’ attitudes toward ELLs that were taken directly from the “LATS” (Language Attitudes of Teachers Scale).

Items relating to teachers’ professional development asked about teachers’ undergraduate and graduate training as well as about relevant professional development programs in which they had participated. The pilot version of the questionnaire is provided in Appendix A.

Analysis of data from the pilot study first included the calculation of descriptive statistics (i.e., frequencies, means, standard deviations, skewness statistics, and item-to-total correlations). I used information from these analyses to identify and remove items that did not produce responses with sufficient variability (e.g., items with substantial skew or comparatively low standard deviations) as well as items that did not correlate with the scale as a whole. Next I calculated reliability estimates to gauge the scale’s internal consistency (Cronbach’s alpha) and performed a principal components analysis. Because evidence from these analyses suggested that the items came together to produce one scale, I concluded that “research-based strategies for teaching ELLs” represented a unitary dependent variable that could be incorporated into the model that the study tested. I was, of course, prepared to use several subscales as dependent variables if the analyses suggested that two or more such subscales appeared to be more meaningful than one global scale. In Chapter 4 I report the analyses of the data obtained from the pilot study.
Data Collection for the Actual Study

After I finalized the instrument based on findings from the pilot study, I mailed copies of the questionnaire to the principals of the schools that I had selected via the cluster sampling procedure described above. This mailing included a cover letter to the principals that explained the research and procedures for assuring respondents’ confidentiality. It also included a cover letter to each teacher to whom the principal was to distribute a questionnaire. Prior to mailing out the questionnaires, I called the principal of each school in the sample, asking for his or her assistance in getting responses from the requisite number of teachers in his or her building.

In an effort to obtain the best response rate possible for a mail survey, I followed guidelines suggested by Dillman, Sinclair, and Clark (1993). These guidelines recommended creating a “respondent-friendly” questionnaire and avoiding difficult or objectionable questions. Although these authors discussed questionnaire length, they indicated that there was no conclusive evidence to suggest that shorter questionnaires receive higher response rates. Nevertheless, I chose to limit the number of items in an effort to keep response time to less than 15 minutes. By having an expert panel review the initial questionnaire items before they were administered and by conducting a pilot study, I hoped to identify any difficult or objectionable questions and insure that the questions were “respondent-friendly” before the final questionnaires were mailed.

I made sure that each return envelope bore the appropriate school identification number. Inclusion of these numbers enabled me to determine which packets of questionnaires had been returned. These numbers also made it possible for me to impute
data about the schools from extant data sources maintained by the Ohio Department of Education, the Council of Chief State School Officers, and the National Center for Education Statistics.

I mailed a second set of questionnaires to the principals of non-responding schools two weeks after I had mailed the original instruments. I also called the principals approximately one week after the second mailing to remind them about the questionnaire and to ask them to return the packet of questionnaires.

Data Analysis

For the purpose of this study, “research-based instructional strategies that teachers reported using with English language learners” was the dependent variable. The independent variables included teachers’ professional training (i.e., pre-service training and in-service professional development), teachers’ attitudes toward ELLs, teachers’ bilingualism, school demographics (i.e., percentage of ELLs enrolled), and school resources (i.e., free- and reduced-price lunch rates and per pupil expenditure). The control variables were school size, district size, teachers’ gender, and teachers’ years of teaching experience. I first used descriptive statistics to analyze data obtained in response to each item on the instrument. I computed frequencies, means, standard deviations, and skewness measures in order to gain an understanding of the character of teachers’ responses to questionnaire items as well as to test whether or not each variable that was used in the regression analysis met the necessary assumptions associated with that statistical test.
I also calculated total scores for the scales measuring relevant constructs. These included the scale measuring reported use of research-based strategies and the scale measuring attitudes toward ELLs.

Before proceeding to the regression analysis, I looked for relationships between variables by computing bi-variate correlation coefficients. I inspected the correlation matrix for two purposes. First, I looked for the relationships among the independent variables. If this inspection had revealed that some of the independent variables were highly correlated, I determined that I would construct composite variables rather than risking multi-collinearity. Second, I examined the bi-variate relationships between each independent variable and the dependent variable. This examination gave me some sense of the predictor variables that might turn out to have the greatest explanatory power and those that might turn out to have the least.

According to Babbie (1990, p. 308), however, “survey researchers very often find that a given dependent variable is simultaneously associated with several independent variables.” In this study, the dependent variable, teachers’ reported use of research-based instructional strategies for teaching ELLs, did turn out to be simultaneously associated with several independent variables. Under circumstances such as these, Babbie (1990) suggested the use of multiple regression analysis to quantify the associations between the set of independent variables and the dependent variable. Following Babbie’s advice, I therefore used multiple regression to determine the extent to which elementary content area teachers’ professional training (i.e., pre-service training and in-service professional development), attitudes toward ELLs, bilingualism, their school demographics (i.e.
percentage of ELLs enrolled) and their school resources (i.e., free- and reduced-price lunch rate and per pupil expenditures), singly and in combination, were associated with their reported use of a set of research-based strategies for teaching English language learners.

In constructing several of the regression equations, I used hierarchical entry of variables in blocks based on the conceptual similarity of the independent variables. I also used stepwise multiple regression procedures for some analyses.

Definitions

The following are operational definitions of the variables used in the analysis.

Operational Definitions

- **Bilingualism** – the ability to carry on a conversation in two different languages, as reported by teachers in response to an item on the questionnaire.

- **District per pupil expenditure** – the amount of money that a school district spends on an annual basis to educate each student in the district, as reported by the Ohio Department of Education, http://ilrc.ode.state.oh.us/publicDWasp/Main.aspx.

- **District size** – the number of students enrolled in a school district, as reported by the Ohio Department of Education, http://ilrc.ode.state.oh.us/publicDW/asp/Main.aspx

- **Gender** – being male or female as reported by teachers in response to an item on the questionnaire.
- **Instructional strategies** – the set of research-based instructional strategies that elementary teachers use with English language learners as determined by their total scores on a scale included as part of the questionnaire.

- **Percentage of English language learners enrolled** – percentage of students enrolled in an elementary school who are designated as Limited English Proficient, based on data reported by the Council of Chief State School Officers (CCSSO) through SchoolDataDirect, [http://www.schooldatadirect.org/](http://www.schooldatadirect.org/)

- **Percentage of students in school who are eligible for free- and reduced-price lunches** – the percentage of students in a school, based on total enrollment, who meet the qualifications set forth by the U.S. government to receive free- or reduced-price lunches, as reported by the Ohio Department of Education, [http://ilrc.ode.state.oh.us/publicDW/asp/Main.aspx](http://ilrc.ode.state.oh.us/publicDW/asp/Main.aspx)

- **Professional development** – the number of professional development activities primarily devoted to the teaching of English language learners that teachers had participated in, as reported by elementary school teachers in response to an item on the questionnaire.

- **School size** – the total number of students enrolled in a school, according to average daily membership (ADM), as reported by the Ohio Department of Education, [http://ilrc.ode.state.oh.us/publicDW/asp/Main.aspx](http://ilrc.ode.state.oh.us/publicDW/asp/Main.aspx).

- **Teachers’ attitudes toward ELLs** – feelings of elementary school teachers toward English language learners, as reported by teachers on the items on the questionnaire adapted from the “Language Attitudes of Teachers Scale”.

- Teaching experience – the number of years that a respondent has been employed as a teacher in a school system, as reported by elementary school teachers in response to an item on the questionnaire.

- Undergraduate preparation – the number of undergraduate courses taken in pre-service programs in which more than 50% of the content focused on English language learners or English as a Second Language Instruction, as reported by elementary school teachers in response to an item on the questionnaire.

Summary

The purpose of this study was to explore the following overarching research question: In consideration of appropriate statistical controls (i.e., school size, district size, teachers’ gender, and teachers’ years of teaching experience), to what extent are elementary content area teachers’ professional training (i.e., pre-service training and professional development), attitudes, bilingualism, and their schools’ demographics (i.e., percent ELL) and resources (i.e., SES and per pupil expenditures), singly and in combination, associated with their reported use of a set of research-based strategies for teaching ELLs? The study also explored a more narrowly framed set of research questions focused on the singular and combined relationships among these variables.

As an initial step in conducting the study, I developed a questionnaire to measure the constructs representing the dependent variable and some of the independent variables of interest in the study. I imputed other independent variables from state and national data sources. A panel of ESL experts reviewed the questions on the instrument in order to
ensure that the questions were clear and that they measured what they intended to measure.

I pilot tested the instrument with elementary school teachers in a central Ohio school district with an ELL population of approximately 8.7%. The analysis of data obtained from this pilot survey assisted in the development of the final version of the instrument.

I administered the final version of the questionnaire to teachers from schools with 8.9% or higher percentages of ELLs. Although I anticipated that more than 2,000 teachers might be in the sample, not all schools in the cluster sampled ended up agreeing to participate and not all schools that did participate provided completed questionnaires from 20 teachers. As a result, the final sample turned out to include 419 teachers.

With data from these teachers, I computed descriptive statistics and bi-variate correlations, as well as testing various multiple regression models (both hierarchical entry and stepwise models). I used the multiple regression analyses to evaluate the extent to which the independent variables, singly and in combination, were associated with the dependent variable. Chapter 4 presents the results of these analyses.
CHAPTER FOUR

Findings

Introduction

The overarching research question guiding this study was the following: In consideration of appropriate statistical controls (i.e. school size, district size, teachers’ gender, and teachers’ experience\textsuperscript{8}), to what extent do teachers’ professional training (both pre-service training and in-service professional development), teachers’ attitudes toward ELLs, teachers’ bilingualism, schools’ percent of ELLs, and schools’ resources (both socioeconomic status and per pupil expenditures) singly and in combination predict the research-based strategies that elementary school content area teachers reportedly use with English language learners?

Subsumed under this large question were the following separate research questions:

1. To what extent does their amount of undergraduate training for working with predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

2. To what extent does their amount of professional development for working with ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

\textsuperscript{8} Age was omitted as a variable due to the fact that there were 149 missing responses for this item. Teachers’ years of experience was used as a proxy instead.
3. To what extent does their bilingualism or monolingualism predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

4. To what extent do their attitudes toward ELLs predict elementary school content-area teachers’ reported use of a set of research-based strategies for teaching ELLs?

5. To what extent does the percentage of ELLs in their schools predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

6. To what extent does the SES of the students who attend their schools predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

7. To what extent does their districts’ per pupil spending predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

In order to answer these research questions, my first step was to pilot-test an instrument for measuring the dependent variable—use of research-based strategies for ELLs—as well as for measuring several of the independent variables, including attitudes toward ELLs. I used information from extant databases to supply values for other independent variables of interest as well as for two of the control variables. A brief discussion of findings from the pilot test is included below along with a description of how I used these findings as the basis for modifying the instrument.
Pilot Study

With help from the school principals, I administered the pilot version of the instrument to teachers in the Westerville school district. The principals distributed a total of 259 pilot instruments to K-5 teachers in the district’s 16 elementary schools. A total of 171 teachers returned pilot instruments, for a return rate of 66%. Upon reviewing the questionnaires, I discovered that some of the instruments were incomplete, contained stray marks, or had answer bubbles that were not completely filled in. Before finalizing the data in preparation for analysis, I cleaned the questionnaires by erasing stray marks, completely filling in incompletely marked bubbles, (i.e., if it was obvious that the respondent intended to mark a bubble but the scantron machine could not detect it) and so on.

While preparing the forms to be machine scanned, I noticed that the items that were left blank tended to be ones that pertained to attitude toward ELLs. Also in some cases teachers did not answer the item asking for their age, and occasionally teachers left blank items related to their use of certain research-based strategies. Because of these omissions, I decided to use mean substitution in the case of missing responses for items comprising the instructional strategy and attitude scales (Downey & King, 1998). For the purpose of this study, I used the mean for all responders to an item and replaced that mean for the missing value. This is an option using SPSS, which I used to calculate the statistics for this study. By using this approach, I was able to preserve enough cases in the data set to follow through with the plan to perform certain relevant statistical analyses. Although this approach allowed me to preserve cases, there is a limitation to using this
method. This limitation is that using this method has a tendency to make the responses on
an item look like they are less skewed and appear more normal than they actually might
have been had the responders actually responded to the item.

*Analysis of Pilot Test Data and Revision of the Instrument*

I calculated frequencies, means, and standard deviations for each item on the
strategies and the attitude scales. Means and standard deviations for items on the
research-based strategies scale are presented below in Table 1. Percent frequencies for
items on the attitudes scale are presented in Table 2.
Table 1

*Descriptive Statistics for Instructional Items*

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Teach individual vocabulary words in the context of meaningful sentences</td>
<td>3.77</td>
<td>.422</td>
</tr>
<tr>
<td>2</td>
<td>Give students opportunities to practice new vocabulary in a variety of meaningful ways</td>
<td>3.63</td>
<td>.520</td>
</tr>
<tr>
<td>3</td>
<td>Provide many meaningful examples of the application of new vocabulary words</td>
<td>3.62</td>
<td>.487</td>
</tr>
<tr>
<td>4</td>
<td>Teach content-specific vocabulary</td>
<td>3.61</td>
<td>.513</td>
</tr>
<tr>
<td>5</td>
<td>Replace complex vocabulary with simpler substitutes that still preserve the same meaning</td>
<td>3.57</td>
<td>.531</td>
</tr>
<tr>
<td>6</td>
<td>Use sentence starters as a way to get students to generate sentences using new vocabulary</td>
<td>3.57</td>
<td>.531</td>
</tr>
<tr>
<td>7</td>
<td>Use sentences with blanks for students to fill in as a way to get students to practice using new vocabulary</td>
<td>3.53</td>
<td>.535</td>
</tr>
<tr>
<td>8</td>
<td>Use visual cues to assist students in understanding the meaning of new vocabulary</td>
<td>3.51</td>
<td>.656</td>
</tr>
<tr>
<td>9</td>
<td>Use physical objects to assist students in understanding the meaning of new vocabulary</td>
<td>3.47</td>
<td>.608</td>
</tr>
<tr>
<td>10</td>
<td>Use gestures to assist students in understanding the meaning of new vocabulary</td>
<td>3.39</td>
<td>.566</td>
</tr>
<tr>
<td>11</td>
<td>Purposefully present new vocabulary words to students in teacher directed lessons</td>
<td>3.38</td>
<td>.585</td>
</tr>
<tr>
<td>12</td>
<td>Use simple language when giving directions</td>
<td>3.38</td>
<td>.585</td>
</tr>
<tr>
<td>13</td>
<td>Ask for fill-in-the-blank answer completion rather than generation of lengthy oral responses</td>
<td>3.37</td>
<td>.564</td>
</tr>
<tr>
<td>14</td>
<td>Ask for fill-in-the-blank answer completion rather than generation of lengthy written responses</td>
<td>3.36</td>
<td>.630</td>
</tr>
<tr>
<td>15</td>
<td>Have students choose answers from a list</td>
<td>3.36</td>
<td>.560</td>
</tr>
<tr>
<td>16</td>
<td>Uses multiple choice items on assignments or tests</td>
<td>3.29</td>
<td>.648</td>
</tr>
<tr>
<td>17</td>
<td>Connect new concepts to students’ background knowledge and experience</td>
<td>3.26</td>
<td>.726</td>
</tr>
<tr>
<td>18</td>
<td>Model what you expect students to do on tasks and assignments</td>
<td>3.25</td>
<td>.662</td>
</tr>
<tr>
<td>19</td>
<td>Use gestures when giving directions</td>
<td>3.20</td>
<td>.727</td>
</tr>
<tr>
<td>20</td>
<td>When asking students to complete an assignment, give directions both orally and in writing</td>
<td>3.15</td>
<td>.683</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>$M$</td>
<td>$SD$</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>21</td>
<td>After giving directions for an assignment, ask questions to make sure all students understand the assignment</td>
<td>3.09</td>
<td>.588</td>
</tr>
<tr>
<td>22</td>
<td>Ask students to re-state directions for academic tasks</td>
<td>3.08</td>
<td>.681</td>
</tr>
<tr>
<td>23</td>
<td>Use cooperative learning</td>
<td>3.08</td>
<td>.568</td>
</tr>
<tr>
<td>24</td>
<td>Have students work in pairs when completing assignments</td>
<td>2.94</td>
<td>.622</td>
</tr>
<tr>
<td>25</td>
<td>Keep individual work to a minimum</td>
<td>2.94</td>
<td>.663</td>
</tr>
<tr>
<td>26</td>
<td>Use one-on-one instruction</td>
<td>2.75</td>
<td>.822</td>
</tr>
<tr>
<td>27</td>
<td>Use small group instruction</td>
<td>2.73</td>
<td>.832</td>
</tr>
<tr>
<td>28</td>
<td>Follow structured classroom routines</td>
<td>2.65</td>
<td>.828</td>
</tr>
<tr>
<td>29</td>
<td>Check daily to see that students understand classroom routines</td>
<td>2.63</td>
<td>.832</td>
</tr>
<tr>
<td>30</td>
<td>Give students opportunities to use oral language in daily classroom activities</td>
<td>2.57</td>
<td>.779</td>
</tr>
<tr>
<td>31</td>
<td>Provide opportunities for each student to communicate at his or her level of language proficiency</td>
<td>2.49</td>
<td>.675</td>
</tr>
<tr>
<td>32</td>
<td>Use open ended questioning during classroom discussions</td>
<td>2.47</td>
<td>.795</td>
</tr>
<tr>
<td>33</td>
<td>Use simple language when explaining new concepts to students</td>
<td>2.39</td>
<td>.811</td>
</tr>
</tbody>
</table>

Table 2

*Frequencies of Attitude Items in Percentages*

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Disagree</th>
<th>Agree</th>
<th>Non-Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>English should be the official language of the United States</td>
<td>10.5</td>
<td>81.9</td>
<td>7.6</td>
</tr>
<tr>
<td>42</td>
<td>Regular classroom teachers should be required to receive pre-service or in-service training to be prepared to meet the needs of linguistic minorities</td>
<td>18.1</td>
<td>75.4</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Agree [%]</td>
<td>Disagree [%]</td>
<td>Undecided [%]</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------</td>
<td>-----------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>35</td>
<td>I would support the government spending additional money to provide better programs for linguistic-minority students in public schools</td>
<td>15.8</td>
<td>71.9</td>
<td>12.3</td>
</tr>
<tr>
<td>36</td>
<td>Parents of non-or limited-English-proficient students should be counseled to speak English with their children whenever possible</td>
<td>21.1</td>
<td>71.3</td>
<td>7.6</td>
</tr>
<tr>
<td>37</td>
<td>It is important that people in the U.S. learn a language in addition to English</td>
<td>25.7</td>
<td>66.1</td>
<td>8.2</td>
</tr>
<tr>
<td>44</td>
<td>At school, the learning of the English language by non-or limited-English-proficient children should take precedence over learning subject matter</td>
<td>42.1</td>
<td>49.1</td>
<td>8.8</td>
</tr>
<tr>
<td>34</td>
<td>To be considered American, one should speak English</td>
<td>45.6</td>
<td>46.8</td>
<td>7.6</td>
</tr>
<tr>
<td>38</td>
<td>It is unreasonable to expect a regular classroom teacher to teach a child who does not speak English</td>
<td>53.2</td>
<td>39.8</td>
<td>7.0</td>
</tr>
<tr>
<td>39</td>
<td>The rapid learning of English should be a priority for non-English proficient or limited English proficient students even if it means they lose the ability to speak their native language</td>
<td>52.0</td>
<td>39.2</td>
<td>8.8</td>
</tr>
<tr>
<td>40</td>
<td>Local and state governments should require that all government business (including voting) be conducted only in English</td>
<td>62.0</td>
<td>33.3</td>
<td>4.7</td>
</tr>
<tr>
<td>46</td>
<td>Non- and limited-English proficient students often use unjustified claims of discrimination as an excuse for not doing well in school</td>
<td>71.9</td>
<td>17.0</td>
<td>11.1</td>
</tr>
<tr>
<td>41</td>
<td>Having a non- or limited-English proficient student in the classroom is detrimental to the learning of the other students</td>
<td>89.5</td>
<td>7.0</td>
<td>3.5</td>
</tr>
<tr>
<td>43</td>
<td>Most non- and limited-English proficient children are not motivated to learn English</td>
<td>93.0</td>
<td>4.1</td>
<td>2.9</td>
</tr>
</tbody>
</table>
Revision of items on the strategies scale. Examination of the means and standard deviations for the 33 items on the strategies scale revealed limited variability in teachers’ responses. Teachers tended to choose one of the two middle responses (“infrequently” or “frequently”) out of the four choices given (“not at all,” “infrequently,” “frequently,” and “very frequently”). This tendency was most pronounced for items #4, #5, #7, #9, #14, #15, and #28. In order to reduce the tendency for teachers to choose a middle response, I decided to use somewhat different wording for the response choices on the final instrument. I changed the response choices for the strategies items on the final instrument to “infrequently,” “sometimes,” “frequently,” and “very frequently.” As well, I surmised that randomization of the items (so that like items would not be grouped together) might also help to eliminate the possibility that respondents would choose similar responses (such as the middle response) for similar items.

Despite somewhat limited variability in responses and the tendency of respondents to select response choices in the middle of the four-point range, the reliability of the strategies scale was adequate. I calculated Cronbach’s alpha to estimate the reliability of the scale that included the 33 items relating to research-based strategies. The alpha reliability was .85, indicating fairly robust internal consistency. I also used diagnostics available through SPSS to see if the reliability might be improved by removing some items, but in no case did removal of one or more items result in any increase in the reliability to a coefficient above .85. As a result, I decided to retain all 33 of the original items.
As mentioned above, percentage frequencies of responses to the attitude items are provided in Table 2. These descriptive statistics suggest the possibility that responses may have been distorted by social desirability bias. According to Fisher (1993), respondents to questionnaires “are often unwilling or unable to report accurately on sensitive topics for ego-defensive or impression-management reasons” (p.303). “Social desirability bias” is the term that is used to characterize what Fisher described. In addition, Zerbe and Paulhaus (as cited in King & Bruner, 2000) indicate that self-report measures, such as this pilot survey, tend to increase the possibility of this kind of bias.

Responses to some items on the scale seemed more likely than responses to other items to have been skewed by social desirability bias. I was most concerned about items #35 and #41. Item #35 asked respondents whether or not they would support the government’s spending more money on better programs for English language learners. In response to this item, 71.9% of the respondents indicated agreement. Whereas it is certainly possible that such a large percentage of teachers actually did agree with this statement, the percentage did seem high, especially considering that schools have so many other financial needs.

Item #41 also raised concern about possible social desirability bias. This item states, “Having a non- or limited-English-proficient student in the classroom is detrimental to the learning of the other students.” The analysis indicated that 7% of the respondents agreed with the statement, 89.5% disagreed with it, and 3.5% did not supply an answer. Although it is possible that responses to the item were honest, I had trouble accepting that interpretation. Several researchers (e.g., Cobb, 2004; Gray & Fleishman,
2005; Howard, 2007; Zehler, 1994) had previously reported that teachers often felt frustrated by the requirement that they educate limited English proficient students in their classrooms. The difference between the responses I received and the results of earlier research suggested the possibility that teachers may have responded to my survey in ways that they thought were socially desirable.

I performed a principal components analysis using the items on the strategies scale. This analysis identified 10 factors with Eigenvalues greater than 1. The total variance explained by the analysis was 64%. A scree plot suggested, however, that only three factors, which together explained approximately 34% of the variance, might actually be reliable. The rotated matrix (using Varimax rotation) showed the extent to which each variable loaded on each of these factors (see Appendix G). Although the principal components analysis identified three interpretable subscales, I did not see this finding as incompatible with the possibility that the items might combine to produce one global scale. Indeed, the reliability analysis reported above supports this perspective.

Revision of items on the attitude scale. In addition to the possibility of social desirability bias, I also discovered that the attitude scale had an alpha reliability coefficient of .692, a lower reliability than I had hoped to obtain. The problems I found with the scale suggested that it might be improved if I modified some of the items to be used in the final version of the instrument. I made modifications in two ways. First, I added five items to the original 13 attitude items. These reworded items focused on the same domains as the original items but were stated in somewhat different ways. According to Orne (1969, as cited in King & Bruner, 2000), the phrasing of questionnaire
items may give respondents cues as to the responses that the researcher expects. My goal in rewording some of the original items, then, was to use wording that would be unlikely to point to one or another of the responses as socially desirable. For example, I developed an alternative, and possibly less reactive, item to include along with Item #41. The new item read, “Having a non- or limited-English proficient student in the classroom helps the other students learn better.” Another example of this approach involved item #36 on the pilot. This item stated, “Parents of non- or limited-English proficient students should be counseled to speak English with their children whenever possible.” An additional item was included on the final instrument to parallel in a less reactive way the same issue that was addressed in item #36. The new item read, “Parents of English proficient students should be encouraged to speak with their children in whatever language they find most comfortable.” I also developed re-worded but parallel statements for items #35, #39, and #44. I developed parallel statements for these items because of my uncertainty that responses to the pilot version of the instrument were actually honest reflections of the respondents’ attitudes to ELLs. The original items along with those that I added are included in Appendix C.

My second approach to handling possible social desirability bias was to change the response choices used on the attitude scale. Originally, the instrument offered only two response choices for the items on this scale: “agree” or “disagree.” According to King and Bruner (2000), forced choice responses between two statements that are equally desirable can be one way to control for social desirability in the selection of responses. Feedback obtained from teachers responding to the original instrument, however,
indicated concern that there were too few response choices. Because of this feedback, I suspected that the forced choice between “agree” and “disagree” might have contributed to respondents’ tendency to select responses that they believed were socially desirable. On the final instrument, I included four response choices: “strongly disagree,” “disagree,” “agree,” and “strongly agree.”

Full Study: Data Analysis and Findings

This section of the chapter provides a discussion of the steps leading up to data analysis (e.g., the survey’s return rate, implications of the return rate for generalizability from the sample to the population, and preparation of the data set), and it also presents the results of the data analyses. The discussion reviews descriptive statistics for the dependent, independent, and control variables; reliability estimates for the research-based strategies and attitude scales; bivariate correlations; multiple regression analyses; and intra-class correlations.

Sample Characteristics and Return Rate

The original cluster sample consisted of 100 elementary (i.e., primary or intermediate) schools, each of which was sent 20 questionnaires for teachers to complete. For a variety of reasons (e.g., principals declined to participate, districts would not give approval for the study, and so on), the size of the cluster was reduced to 65 schools. The size of the sample of teachers, moreover, was smaller than originally planned because some schools employed fewer than 20 content area teachers. Altogether, the number of teachers who received questionnaires (via their principals) was 960. Of these 960

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9 Analysis of the final data set revealed similar results on the items showing possible social desirability, indicating that, although more response choices were added for the final instrument, social desirability may still have played a part in how teachers responded to certain items.
teachers, 419 returned the questionnaires, yielding a return rate of 44%. Of the 65 schools that had originally agreed to participate, 47 returned survey instruments, yielding a school return rate of 72%. Table 3 provides descriptive statistics showing the characteristics of the schools that did and did not return questionnaires: percentage of ELL enrollment, percentage of economically disadvantaged students, per pupil expenditure (at the district level), school size, and district size.

Table 3

*Descriptive Statistics for Demographics of Responding and Non-Responding Schools*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Responding Schools Mean</th>
<th>Non-Responding Schools Mean</th>
<th>Responding Schools Standard Deviation</th>
<th>Non-Responding Schools Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage ELL</td>
<td>19.41</td>
<td>18.64</td>
<td>11.53</td>
<td>17.14</td>
</tr>
<tr>
<td>Percentage Free and Reduced Lunch</td>
<td>55.48</td>
<td>51.16</td>
<td>23.47</td>
<td>20.84</td>
</tr>
<tr>
<td>District Per Pupil Expenditure</td>
<td>6383.06</td>
<td>6155.38</td>
<td>962.58</td>
<td>969.52</td>
</tr>
<tr>
<td>School Size</td>
<td>440</td>
<td>323</td>
<td>119.81</td>
<td>135.46</td>
</tr>
<tr>
<td>District Size</td>
<td>12411</td>
<td>6704</td>
<td>13220.79</td>
<td>6411.51</td>
</tr>
</tbody>
</table>

Looking at the means for the responding and non-responding schools in Table 3, one can see differences that seem like they might be meaningful (e.g., the 55.48% versus 51.16% free and reduced lunch rate). Nevertheless, when I used an on-line calculator to
perform tests comparing the means (http://www.dimensionresearch.com/resources/calculator/ttest.html), I found that, although a few of the differences seemed like they might be meaningful, only one of them was statistically significant at the 95% confidence level, the mean difference for school size. Apparently, the schools in the sample whose principals returned the questionnaires were significantly larger in terms of student enrollment than those whose principals did not return the questionnaires. The fact that the other mean differences were not significant, however, might have been an artifact of the small sample size.

The conclusion that responding and non-responding schools had similar characteristics (with the exception of school size) is offered cautiously. Because I did not compare the characteristics of responding and non-responding teachers, moreover, I cannot be certain that the sample of responding teachers actually was representative of the larger population of Ohio elementary teachers who are working in schools with relatively large ELL enrollments. As explained in chapter three, claims about the study’s generalizability may already be questionable because of the nature of the sampling frame from which the sample was drawn. Possible differences between the sample of teachers who were selected to receive questionnaires and the sample of teachers who returned them may further compromise the generalizability of the study’s findings.

Preparation of the Data Set

Prior to running statistical analyses, I did what was necessary to clean the data. Because respondents provided answers on Scantron forms, however, the data set included very few errors. Still, I checked for errors by running frequency analyses to locate
anomalous values, and I replaced these values with the numerical value (i.e., -9) that I had set as the code for missing values. With the clean data, I then used SPSS version 17 to compute descriptive statistics, reliability estimates, and bivariate correlations as well as to run the multiple regression models needed to answer the research questions. In addition, because my data were potentially nested (i.e., teachers within schools), I obtained help from a statistician to compute intra-class correlations. These correlations gave me an empirical basis for determining whether or not the nesting of the data warranted the use of multi-level models. The results of the intra-class correlation analysis indicated that multi-level modeling was not warranted for the model in which reported use of research-based strategies was the dependent variable. Although they also showed that multi-level modeling was appropriate for the model in which teachers’ attitude was the dependent variable (i.e., the ancillary analysis), that type of analysis was beyond the scope of this dissertation study.

**Descriptive Statistics for the Dependent Variables**

For each item on the two scales (i.e., the research-based strategies scale and the attitude scale) I calculated means and standard deviations. I also summed the items on each scale to create a total score. Means and standard deviations for items on the research-based strategies scale are presented in Table 4. Means and standard deviations for items on the attitudes scale are presented in Table 5. Means, medians, modes, ranges, and standard deviations for the two aggregated scales are presented in Table 6.
Table 4

Research-based Strategies Items (1-4 scale), Arranged from Highest to Lowest Rating

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Follow structured classroom routines</td>
<td>2.65</td>
<td>.531</td>
<td>379</td>
</tr>
<tr>
<td>33</td>
<td>Model what you expect students to do on tasks and assignments</td>
<td>2.62</td>
<td>.568</td>
<td>376</td>
</tr>
<tr>
<td>3</td>
<td>After giving directions for an assignment, ask question to make sure all students understand their assignment</td>
<td>2.6</td>
<td>.602</td>
<td>379</td>
</tr>
<tr>
<td>15</td>
<td>Give students opportunities to use oral language in daily classroom instruction</td>
<td>2.54</td>
<td>.564</td>
<td>378</td>
</tr>
<tr>
<td>32</td>
<td>Connect new concepts to students’ background knowledge and experience</td>
<td>2.38</td>
<td>.654</td>
<td>378</td>
</tr>
<tr>
<td>11</td>
<td>Use simple language when giving directions</td>
<td>2.35</td>
<td>.652</td>
<td>378</td>
</tr>
<tr>
<td>8</td>
<td>Use gestures when giving directions</td>
<td>2.32</td>
<td>.737</td>
<td>376</td>
</tr>
<tr>
<td>9</td>
<td>Provide opportunities for each student to communicate at his or her level of language proficiency</td>
<td>2.29</td>
<td>.665</td>
<td>376</td>
</tr>
<tr>
<td>5</td>
<td>Use visual cues to assist students in understanding the meaning of new vocabulary words</td>
<td>2.27</td>
<td>.734</td>
<td>377</td>
</tr>
<tr>
<td>2</td>
<td>Use simple language when explaining new concepts to students</td>
<td>2.26</td>
<td>.688</td>
<td>377</td>
</tr>
<tr>
<td>22</td>
<td>Teach content-specific vocabulary</td>
<td>2.26</td>
<td>.686</td>
<td>374</td>
</tr>
<tr>
<td>26</td>
<td>Use small group instruction</td>
<td>2.25</td>
<td>.783</td>
<td>378</td>
</tr>
</tbody>
</table>
Table 5

*Descriptive Statistics for Attitude Items, (1-4 scale) Arranged from Highest to Lowest*

<table>
<thead>
<tr>
<th>Rating</th>
<th>Item Description</th>
<th>M</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English should be the official language of the United States</td>
<td>2.20</td>
<td>.692</td>
<td>372</td>
</tr>
<tr>
<td>52</td>
<td>I would support the government spending additional money to provide better programs for linguistic-minority students in public schools</td>
<td>2.14</td>
<td>.583</td>
<td>374</td>
</tr>
<tr>
<td>38</td>
<td>Regular classroom teachers should be required to receive pre-service or in-service training to be prepared to meet the needs of linguistic minorities</td>
<td>2.11</td>
<td>.686</td>
<td>376</td>
</tr>
<tr>
<td>48</td>
<td>Parents of English proficient students should be encouraged to speak with their children in whatever language they find most comfortable</td>
<td>1.94</td>
<td>.610</td>
<td>379</td>
</tr>
<tr>
<td>46</td>
<td>It is important that people in the US learn a language in addition to English</td>
<td>1.87</td>
<td>.799</td>
<td>377</td>
</tr>
<tr>
<td>41</td>
<td>Parents of non or limited English proficient students should be counseled to speak English with their children whenever possible</td>
<td>1.80</td>
<td>.814</td>
<td>374</td>
</tr>
<tr>
<td>49</td>
<td>Having a non and limited English proficient student in the classroom helps the other students learn better</td>
<td>1.69</td>
<td>.735</td>
<td>369</td>
</tr>
<tr>
<td>37</td>
<td>To be considered American, one should speak English</td>
<td>1.47</td>
<td>.884</td>
<td>370</td>
</tr>
<tr>
<td>51</td>
<td>At school, the learning of the English language by non or limited English proficient children should take precedence over learning subject matter</td>
<td>1.40</td>
<td>.736</td>
<td>372</td>
</tr>
<tr>
<td>45</td>
<td>Local and state governments should require that all government businesses (including voting) be conducted only in English</td>
<td>1.24</td>
<td>.721</td>
<td>372</td>
</tr>
<tr>
<td>44</td>
<td>The rapid learning of English should be a priority for non-English proficient or limited English proficient students even if it means they lose the ability to speak their</td>
<td>1.17</td>
<td>.703</td>
<td>367</td>
</tr>
</tbody>
</table>
43 People in the United States do not need to learn to speak a second language

53 Non and limited English proficient students often use unjustified claims of discrimination as an excuse for not doing well in school

54 The United States should not have one official language

42 It is unreasonable to expect a regular classroom teacher to teach a child who does not speak English

40 With the many financial needs of schools, the government might need to cut back on its support for programs serving limited English proficient students

47 Having a non or limited English proficient student in the classroom is detrimental to the learning of other students

50 Most non and limited English proficient children are not motivated to learn English

### Table 6

*Descriptive Statistics: Research-based Strategies and Attitude Scales*

<table>
<thead>
<tr>
<th>Scale</th>
<th>$M$</th>
<th>$Mdn$</th>
<th>Mode</th>
<th>Range</th>
<th>$SD$</th>
<th>$N$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategies</td>
<td>66.79</td>
<td>66.5</td>
<td>63</td>
<td>67</td>
<td>11.77</td>
<td>314</td>
</tr>
<tr>
<td>Attitudes</td>
<td>32.26</td>
<td>32.0</td>
<td>31</td>
<td>41</td>
<td>6.52</td>
<td>331</td>
</tr>
</tbody>
</table>
Descriptive Statistics for the Independent and Control Variables

In the section above, I presented descriptive statistics for the items on the attitude scale, which was one of the independent variables included in the models I tested in order to answer the overarching research question and one of the subsidiary questions guiding the study. I included these analyses with the analyses for the other dependent variables (i.e., items on the research-based strategies scale) because the attitude scale was also used as a dependent variable in an ancillary analysis.

The other independent variables of interest in the model included the following: percentage of ELLs in the school, school socio-economic status (i.e., percentage of students receiving free or reduced-price lunches), district per pupil expenditures, bilingualism of the teacher, teachers’ undergraduate preparation for teaching ELLs, and teachers’ in-service professional development for teaching ELLs. In addition, the model included the following control variables: teachers’ years of experience (which served as a proxy for age), teachers’ gender, district size, and school size\textsuperscript{10}. The descriptive statistics for these independent and control variables are presented in two tables below. I present descriptive statistics (including means, standard deviations, and numbers of respondents) for years of teaching, professional development activities, undergraduate preparation for teaching ELLs, school size, district size, school SES (percentage of free and reduced lunch), per pupil expenditure, and percentage of ELL enrollment in Table 7; I present frequency counts and percentages for bilingualism and gender in Table 8.

\textsuperscript{10} Age was omitted as a variable because there were 149 missing responses for this item, equaling almost half of the total number of questionnaire responses.
Table 7

*Descriptive Statistics for Undergraduate Training, Professional Development Activities, Age, Years Teaching*

<table>
<thead>
<tr>
<th>Scale</th>
<th>( M )</th>
<th>( SD )</th>
<th>( N )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate training (number of courses with ELL content)</td>
<td>.52</td>
<td>1.5</td>
<td>271</td>
</tr>
<tr>
<td>Professional Development Activities with ELL Content (number of activities)</td>
<td>4.4</td>
<td>8.97</td>
<td>351</td>
</tr>
<tr>
<td>Teaching Experience (number of years)</td>
<td>15.3</td>
<td>9.6</td>
<td>367</td>
</tr>
<tr>
<td>School Size (number of students)</td>
<td>440</td>
<td>119.8</td>
<td>381</td>
</tr>
<tr>
<td>District Size (number of students)</td>
<td>12,410.65</td>
<td>13,220.79</td>
<td>381</td>
</tr>
<tr>
<td>SES (percentage of students on free or reduced-price lunches)</td>
<td>55.48</td>
<td>23.47</td>
<td>381</td>
</tr>
<tr>
<td>Per Pupil Expenditure (in dollars)</td>
<td>6,383</td>
<td>962.58</td>
<td>381</td>
</tr>
<tr>
<td>Percentage of ELLs in the School</td>
<td>19.46</td>
<td>11.49</td>
<td>381</td>
</tr>
</tbody>
</table>

Table 8

*Frequencies for Bilingualism and Gender*

<table>
<thead>
<tr>
<th>Item</th>
<th>Response Choices</th>
<th>Frequency Count</th>
<th>Percent Frequency</th>
<th>Percent Missing Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speak a second language</td>
<td>Yes</td>
<td>60</td>
<td>15.7%</td>
<td>4.2%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>305</td>
<td>80.1%</td>
<td></td>
</tr>
<tr>
<td>Carry on a conversation in another language</td>
<td>Yes</td>
<td>50</td>
<td>13.1%</td>
<td>5.8%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>309</td>
<td>81.1%</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>22</td>
<td>5.8%</td>
<td>3.4%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>346</td>
<td>90.8%</td>
<td></td>
</tr>
</tbody>
</table>
Reliability Analyses

I computed reliability estimates for the two scales (i.e., the research-based strategies scale and the attitudes scale) using data from teachers in the actual sample. My purpose in doing so was to compare reliability estimates obtained with the data set from the actual survey with those obtained with data from the pilot survey. As noted above, the alpha reliability for the research-based strategies scale that was used in the pilot test was .85. The alpha reliability for the attitude scale used in the pilot survey was .69.

Reliability estimates. Using data from the actual survey, I performed analyses to determine alpha reliability estimates for the research-based strategies scale and the attitude scale. The alpha reliability for the research-based strategies scale was .89, and for the attitude scale alpha reliability was .83.

With respect to the research-based strategies scale, the two reliability estimates (i.e., with the pilot data and the actual data) differed very little. In this case, the reliability obtained for the scale using data from the actual study (i.e., alpha = .89) was slightly higher than the reliability obtained using data from the pilot study (i.e., alpha = .85). The same items had been included on both versions of the instrument, so it did not appear that the slight difference in reliability had anything to do with the items comprising the scale.

With regard to the attitude scale, the reliability estimate using data from the actual study was higher than the reliability estimate using data from the pilot study. Reliability increased from .69 with data from the pilot study to .83 with data from the actual study. The change might have reflected improvements that I made to the scale in response to
information provided by teachers who had participated in the pilot study. For example, five items that had not been included on the instrument used for the pilot study were added to the attitude scale that was used in the actual study. The items that were added to the attitude scale were designed to limit distortions possibly resulting from social desirability bias, and perhaps the addition of these items produced the intended effect. I also expanded the set of choices that respondents could use to respond to each item. On the pilot version of the questionnaire, “agree” and “disagree” were the only response choices. On the final instrument, “strongly agree” and “strongly disagree” were added as choices, perhaps resulting in more honest responses from the teachers who completed and returned questionnaires. Both the addition of items and the addition of response choices may have played some role in improving the reliability of the final version of the attitude scale. Sometimes, of course, reliability estimates increase or decrease from one administration to another administration of the same instrument for no obvious reason (Rudner & Schafer, 2001).

**Bivariate Correlations**

I calculated bivariate correlations between all pairs of dependent, independent, and control variables to determine the strength and significance of the relationships. Bivariate correlations between variables are presented in Table 9 below.
Coefficients in italics indicate Spearman's Rho. All other coefficients are Pearson correlations.

<table>
<thead>
<tr>
<th>Bi/Multi = bilingual/multilingual; PD = professional development; UP = undergraduate preparations</th>
<th>Instructional Strategies</th>
<th>Teacher Attitude</th>
<th>District Size</th>
<th>School Size</th>
<th>PPE</th>
<th>SES</th>
<th>ELL Percentage</th>
<th>Teaching Experience in Years</th>
<th>Age</th>
<th>Undergraduate Preparation</th>
<th>Professional Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi/Multi</td>
<td>1.22</td>
<td>0.06</td>
<td>-0.019</td>
<td>-0.030</td>
<td>0.109*</td>
<td>0.070</td>
<td>0.030</td>
<td>-0.159**</td>
<td>-0.101</td>
<td>0.118</td>
<td>0.106</td>
</tr>
<tr>
<td>PD</td>
<td>-</td>
<td>0.213*</td>
<td>-0.017</td>
<td>0.072</td>
<td>0.011</td>
<td>-0.008</td>
<td>0.097</td>
<td>-0.059</td>
<td>-0.175</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UP</td>
<td>-</td>
<td>-</td>
<td>0.019</td>
<td>-0.235**</td>
<td>0.129*</td>
<td>-0.129*</td>
<td>0.261**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IS</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 9

Independent Variables | Instructional Strategies | Teacher Attitude | District Size | School Size | PPE | SES | ELL Percentage | Teaching Experience in Years | Age | Undergraduate Preparation | Professional Development |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi/Multi</td>
<td>0.183**</td>
<td>0.045</td>
<td>0.017</td>
<td>0.072</td>
<td>0.011</td>
<td>0.047</td>
<td>0.181**</td>
<td>0.033</td>
<td>0.159*</td>
<td>0.091</td>
<td>-</td>
</tr>
<tr>
<td>PD</td>
<td>0.122</td>
<td>-0.016</td>
<td>0.047</td>
<td>0.097</td>
<td>-0.008</td>
<td>-0.236**</td>
<td>-0.175*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UP</td>
<td>-</td>
<td>0.100</td>
<td>0.175</td>
<td>0.303</td>
<td>0.011</td>
<td>-0.065</td>
<td>-0.079</td>
<td>-0.783**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Age</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.017</td>
<td>0.033</td>
<td>-</td>
</tr>
<tr>
<td>TE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.017</td>
<td>0.033</td>
</tr>
<tr>
<td>ELL</td>
<td>0.017</td>
<td>0.033</td>
<td>0.017</td>
<td>0.223**</td>
<td>0.114*</td>
<td>-0.113*</td>
<td>-0.223**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SES</td>
<td>0.011</td>
<td>0.047</td>
<td>0.023</td>
<td>0.080</td>
<td>0.011</td>
<td>0.065</td>
<td>0.079</td>
<td>-0.783**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PPE</td>
<td>-0.026</td>
<td>0.097</td>
<td>0.092</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>SS</td>
<td>0.011</td>
<td>0.047</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DS</td>
<td>0.234**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TA</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Bivariate Correlations between Variables
The bi-variate relationships that were of particular interest in this study were (1) the relationships between each of the independent variables (i.e., attitudes toward ELLs, bilingualism, undergraduate training, professional training, the percent of ELLs enrolled in a school, per-pupil expenditures, and SES) and the dependent variable (i.e., the use of a set of research-based strategies), and (2) the relationships between each of the independent variables (bilingualism, undergraduate training, professional development, percent of ELLs, per-pupil expenditures, and SES) and the dependent variable, attitudes toward ELLs. Based on the calculation of bivariate associations, only a few of these relationships turned out to be significant.

Among these was the relationship between teachers’ attitudes toward ELLs and their reported use of a set of research based strategies \( (r = .243, p \leq .01) \). Another was the relationship between teachers’ bilingualism and their attitudes toward ELLs \( (r = .213, p \leq .01) \). This correlation would seem to indicate that teachers who are bilingual exhibit more positive attitudes toward English language learners than teachers who speak only one language. The relationship between a teacher’s bilingualism and the research-based strategies that he or she reportedly uses also was significant \( (r = .183, p \leq .01) \). Teachers who reported being bilingual scored higher on their use of research-based strategies than teachers who reported that they could not carry on a conversation in another language. These two correlations seemed to indicate that, of all the independent variables associated with the dependent variables, a teacher’s bilingualism had more to do with a teacher’s attitude and use of research-based strategies than the variables that I had originally
expected to be significantly associated, such as professional development and undergraduate training. The relationships between professional development activities and undergraduate training reported by teachers seemingly had little to do with predicting the reported use of research-based strategies with English language learners. Because the bi-variate correlations did not account for the influence of covariates, however, I could not be sure that these apparent patterns of association would actually persist when multiple independent variables were examined altogether in one model. The multiple regression models reported below address this concern.

Although not surprising to the researcher, another interesting relationship was the relationship between the socio-economic status of the school population and the percentage of ELLs enrolled in a school. This significant correlation of .261 (p ≤ .01) indicated that schools with higher free- and reduced-price lunch rates tended to have higher percentages of ELLs.

*Intra-class Correlations (ICCs)*

An outside consultant performed intra-class correlations in order to determine whether or not the teachers’ responses to the questionnaire were “nested” on the basis of the buildings in which the teachers worked. The ICC for the model in which reported use of research based strategies was the dependent variable was 1.89/140.58 or .013. This result indicated that 1.3% of the variance in teachers’ reported use of these strategies was explained by building membership; in other words, teachers’ practices (i.e. the set of research-based strategies reportedly used with ELLs) were not heavily influenced by the building in which they worked. As noted above, the ICC for the model in which teachers’
attitude was the dependent variable did reveal that building membership was associated with attitude. Although beyond the scope of this dissertation, multi-level analysis should be used in constructing a model examining the characteristics of teachers and schools that predict teachers’ attitudes toward ELLs.

*Multiple Regression Analyses*

The overarching research question guiding this study and providing the basis for the most important statistical analysis in the study (i.e., the multiple regression analysis using all relevant variables) was this: In consideration of appropriate statistical controls (i.e. school size, district size, teachers’ gender, and teachers’ experience11), to what extent do teachers’ professional training (i.e. pre-service training and professional development), teachers’ attitudes, teachers’ bilingualism, and school resources (i.e. SES and per pupil expenditures), singly and in combination, predict the research-based strategies that elementary school content area teachers reportedly use with English language learners? In order to answer this research question, I developed a multiple linear regression model with research-based strategies as the dependent variable. To construct the regression model, I entered the independent variables in blocks. The school and district variables (i.e., district size, school size, per pupil expenditure, SES, and percentage ELL) were in Block 1. I included years of teaching experience and gender (i.e., the teacher-level control variables) in Block 2 and attitude toward ELLs, undergraduate coursework, professional development, and bilingualism (i.e., the teacher-level independent variables) in Block 3. A summary of the findings from the full model

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11 Age was omitted as a variable because there were 149 missing responses for this item, equaling almost half of the total number of questionnaire responses. Teachers’ years of experience was used instead as a proxy.
(i.e., with all variables entered from Blocks 1, 2, and 3) is presented in Table 10. In F B, I include output for each step in the construction of the three-block model. The R square statistics were as follows: Block 1 $R^2 = .057$, Block 2 $R^2 = .073$, and Block 3 $R^2 = .193$. This model was significant only when all three blocks of variables were included. I also ran a model in which I organized the variables in blocks based on whether or not they were control variables (Block 1), school-level independent variables (Block 2), or teacher-level independent variables (Block 3). Obviously the results were the same for the full model, but comparisons of the R square statistics reveal some minor differences: Block 1 $R^2 = .023$, Block 2 $R^2 = .073$, and Block 3 $R^2 = .193$. This second approach revealed that the variables I incorporated as control variables actually accounted for very little of the variance in teachers’ reported use of a set of research-based strategies for teaching ELLs. This second approach to organizing the full model is presented in Appendix E.
In the full model, two variables appeared as significant predictors—attitude (with a significant positive Beta weight of .301) and percentage of ELLs (with a significant negative Beta weight of -.183). These findings showed that, all else equal, incremental increases in teachers’ attitudes yielded incremental increases in their reported use of a set of research-based strategies but that incremental increases in schools’ percentage of ELLs yielded incremental decreases in teachers’ reported use of this set of strategies.

Multiple regression analysis relies on certain assumptions. Two of the most important assumptions are the random distribution (i.e., normality) and homoscedacity of the residuals—the values representing error by quantifying the difference between actual responses and predicted responses. The assumption of homoscedacity relates to whether
or not the variance of the error term is the same across all levels of the dependent variable (e.g., high levels of use of reported use of a set of research-based strategies, medium levels of use, and low levels of use) (Osborne & Waters, 2002). And the assumption of normality relates to the overall shape of the distribution of residuals. To test the normality and the homoscedacity of the residuals, I produced a scatter plot with standardized residuals on one axis and the standardized predicted values on the other. The scatter plot was roughly rectangular in shape, providing evidence both of the normality and the homoscedacity of the distribution of residuals. It did, however, also show the presence of a few outliers. The scatterplot is presented in Appendix H.

**Reduced model.** In addition to the full model, I constructed a reduced regression model in order to identify the set of independent variables that yielded the strongest and most clear-cut set of predictors of teachers’ reported use of research-based strategies. To develop the model, I used the stepwise regression method with pairwise exclusion of missing values. Table 11 presents the results of the stepwise regression model, which shows two significant predictors of teachers’ reported use of research-based strategies for teaching ELLs: their attitudes and the amount of professional development in which they had participated. Interestingly, when I used these same variables in a direct-enter model, professional development no longer turned out to be a significant predictor (see Table 12).
Table 11

Summary of Stepwise Regression Analysis (Pairwise Exclusion of Missing Values)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitudes</td>
<td>.243</td>
<td>.000</td>
</tr>
<tr>
<td>Professional Development</td>
<td>.142</td>
<td>.030</td>
</tr>
</tbody>
</table>

R$^2$ = .079

Table 12

Summary of Direct Enter Reduced Regression Analysis (Listwise Exclusion of Missing Values)

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Development</td>
<td>.112</td>
<td>.065</td>
</tr>
<tr>
<td>Attitudes</td>
<td>.218</td>
<td>.000</td>
</tr>
</tbody>
</table>

R$^2$ = .062

After developing the equation using stepwise regression, I compared the results from that equation to those obtained using the full regression equation. The analyses differed slightly: both models included teachers’ attitudes as a significant predictor, and each model included a second significant predictor variable. The second predictors differed, however, across the models. With the full model, schools’ percent of ELLs appeared to be a second significant predictor variable. With the reduced (i.e. stepwise model), which also explained less of the variance than the full model, percent ELL did not appear to be a significant predictor, but amount of professional development that teachers had received did appear to be a significant predictor. Taken together these models provided strong support for the conclusion that teachers’ attitudes were
significantly related to their reported use of research-based strategies. Less compelling was the evidence that either schools’ percent of ELLs, on the one hand, or the amount of relevant professional development that teachers had received, on the other, was a significant predictor of their reported use of research-based strategies.

_Ancillary analysis._ I also constructed a multiple regression model to examine the association of control variables (i.e., teachers’ years of experience, teachers’ gender, school size, and district size), school level independent variables (i.e., per pupil expenditure, SES, and percent ELL), and teacher level independent variables (i.e., undergraduate preparation, professional development, and bilingualism) with teachers’ attitudes toward English language learners. In order to construct this equation, I entered the variables in blocks: the control variables in Block 1, the school-level independent variables in Block 2, and the teacher-level independent variables in Block 3. A summary of the final regression model for variables predicting teachers’ attitudes toward ELLs is presented in Table 13.
As the findings in the table indicate, the regression analysis identified two variables that were significant predictors of teachers’ attitude toward ELLs. These variables were teachers’ bilingualism and district per pupil expenditure. The other variables were not significant predictors. Teachers in districts that spent more money per pupil were more likely than other teachers to have positive attitudes toward ELLs, and teachers who spoke more than one language were also more likely than other teachers to have positive attitudes.

Answers to Subsidiary Research Questions

The discussion of the multiple regression analyses provided answers to the overarching research question and to a synoptic ancillary research question. The dissertation, however, was also designed to address a number of subsidiary research questions. Below I restate each of these questions and explain the answers that the data
analyses supported. In several cases, I performed follow-up analyses to elaborate the findings provided by the bi-variate correlations and multiple regression analyses. These analyses are discussed as part of my consideration of each of the subsidiary research questions.

1. To what extent does their amount of undergraduate training for working with ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

An initial analysis revealed limited variability in the number of undergraduate courses reportedly taken by the respondents (See Table 8). When asked how many undergraduate courses they took in which more than 50% of the course content focused on the instruction of English language learners, teachers reported having taken between 0 and 10 such courses. Because most of the teachers took very few such courses, moreover, I decided to create a derived variable with two values – “none” (meaning 0 courses) and “some” (meaning between 1 to 10 courses). Frequencies and percent frequencies for this derived variable are reported in Table 14.

Table 14

Undergraduate Courses Taken by Teachers

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>222</td>
<td>58.3</td>
</tr>
<tr>
<td>Some</td>
<td>49</td>
<td>12.9</td>
</tr>
<tr>
<td>Missing</td>
<td>110</td>
<td>28.9</td>
</tr>
<tr>
<td>Total</td>
<td>381</td>
<td>100</td>
</tr>
</tbody>
</table>
Using the derived variable, I then performed a one-way analysis of variance to determine the association between undergraduate course-taking and the extent to which teachers reported that they used research-based strategies. The mean difference of 3.8 was small and not statistically significant \((F 1, 220) = 3.85, p = .051\).\(^{12}\) I also calculated a Spearman rank order correlation between the derived course-taking variable and the research-based strategies scores. The resulting correlation of .122 was not significant. These findings suggest that the small association between undergraduate course-taking and reported use of effective research-based strategies is most likely a chance occurrence rather than a systematic effect. This interpretation is supported by the output of the multiple regression equation (reported above) in which the Beta-weight for undergraduate training was both small and non-significant. The limited variability in undergraduate course-taking may have produced a restriction in range sufficient to attenuate its relationship with reported used of a set of research-based strategies. Once undergraduate preparation programs begin to incorporate content about how to teach ELLs, evaluation studies should examine the extent that these offerings predict the use of research-based strategies.

2. To what extent does their amount of professional development for working with ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

A significant Pearson product moment correlation of .152 initially suggested the presence of a small but possibly meaningful relationship between teachers’

\(^{12}\) The mean for teachers who had some undergraduate coursework that considered ELLs was 69.59 and the mean for teachers who had no training of this type was 65.79.
participation in professional development and their reported use of research-based strategies. This interpretation, however, was not supported by the multiple regression analysis (reported above) in which the Beta-weight for professional development turned out to be both small and non-significant. It was, however, supported by findings from the stepwise regression used to produce a reduced model (see above). And it was also supported in a follow up analysis in which attitude was removed as an independent variable, while all other independent variables were retained (see Appendix D). These findings suggest that researchers who conduct follow-up studies (perhaps with larger and more representative samples) as well as educational policy makers and school leaders should be attentive to the possibility that professional development might be associated with the use of a set of research-based strategies for teaching ELLs.

3. To what extent does their bilingualism or monolingualism predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

The instrument included two items pertaining to teachers’ bilingualism. Item #35 asked respondents whether or not they spoke a second language, and item #36 asked respondents whether or not they could carry on a conversation in a second language. The significant bi-variate correlation for the two items was .67 suggesting that the two items were moderately correlated and were probably measuring something similar.

Using Spearman rho rank order correlations, I calculated bi-variate correlations for both of these variables and the scale measuring teachers’ reported use of a set of research-based strategies. Both correlations were small but significant. For item #35 the
The correlation coefficient was .141 (p ≤ .05), and for item #36 the correlation coefficient was .183 (p ≤ .001). Because the two independent variables were moderately correlated and because #36 seemed to work somewhat better as a predictor, I chose #36 rather than #35 for inclusion in the ANOVA (described below) and the multiple regressions (described in the section above). The one-way analysis of variance (ANOVA) comparing the reported use of a set of research-based strategies by teachers who were bilingual with the reported use by teachers who were monolingual also yielded statistically significant associations [(F 2, 294) = 5.17, p = .006]. Although in the full regression model (with research-based strategies as the dependent variable) this relationship did not appear to be significant, in the regression model in which teacher attitudes toward ELLs was the dependent variable, teachers bilingualism did turn out to be a significant predictor (see Table 13).

The fact that teachers’ bilingualism behaved in this way suggested that its prediction of the reported use of a set of research-based strategies may have been indirect (i.e., through its prediction of attitudes). This conjecture was confirmed by the follow-up analysis reported in Appendix D in which attitude was omitted as a predictor of strategies (but all other independent variables were retained). In that analysis the Beta-weight for teachers’ bilingualism was .15 (p = .035).

4. To what extent do their attitudes toward ELLs predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

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13 The Levene statistic revealed homogeneity of variance in this comparison of means.
A significant Pearson product moment correlation of .24 suggested the presence of a strong and meaningful relationship between teachers’ attitudes and their use of research-based strategies for teaching English language learners. This interpretation was supported by the full multiple regression equation (reported above) in which the Beta-weight for attitudes turned out to be significant and relatively large. In a reduced model developed using stepwise regression, teachers’ attitude was, once again, found to be significant. In all of the above-mentioned analyses, teachers’ attitude toward English language learners was repeatedly revealed as a strong predictor of their reported use of research-based strategies.

5. To what extent does the percentage of ELLs in their schools predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

The Pearson product moment correlation coefficient measuring the degree of association between school percentage of ELLs and teachers’ reported use of a set of research-based strategies was not significant. Nevertheless, when covariates were included in a multiple regression model, the percentage of ELLs turned out to be a significant predictor of teachers’ reported use of a set of research-based strategies. Percentage of ELLs was also a significant predictor in the model in which attitude was omitted as an independent variable (see Appendix D), but it was not a significant predictor in the reduced model constructed using either the stepwise or the direct enter method. Taken together, these findings provide limited evidence suggesting that
percentage of ELLs may predict teachers’ use of a set of research-based strategies. Further study is definitely warranted.

Nevertheless, the finding is important and troubling (even if, at this point, ambiguous) because the association turned out (i.e., in the two regression models mentioned above) to be negative. In schools with higher proportions of ELLs, teachers were less likely than their counterparts in schools with lower proportions of ELLs to report using a set of research-based strategies.

8. To what extent does the SES of the students who attend their schools predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

The Pearson product moment correlation coefficient measuring the degree of association between school SES (percentage of students receiving free or reduced price lunches) and teachers’ reported use of a set of research-based strategies was not significant. This finding was supported by the Beta weights observed in the multiple regression equation (reported above) in which the contribution of SES was both small and non-significant. In none of the follow-up analyses, moreover, did SES turn out to be a significant predictor.

9. To what extent does their districts’ per pupil spending predict elementary school content area teachers’ reported use of a set of research-based strategies for teaching ELLs?

The Pearson product moment correlation measuring the degree of association between district per pupil spending and teachers’ reported use of a set of research-based
strategies was not significant. Furthermore, per pupil spending was not a significant
predictor in the full equation in which reported use of a set of research-based strategies
was the dependent variable. Nevertheless, district per pupil expenditure turned out to be a
significant predictor in the regression equation in which teachers’ attitude toward English
language learners was the dependent variable. In higher funded school districts teachers
were more likely than their counterparts in lower funded districts to report having
positive attitudes toward ELLs.

In addition to answers to research questions concerning predictors of teachers’
reported use of a set of research-based strategies, this study also sought to address
ancillary questions relating to predictors of teachers’ attitudes toward ELLs. Answers to
these questions are provided below.

1. To what extent does the amount of undergraduate preparation for working
   with ELLs predict elementary school content area teachers’ attitudes toward
   these students?

   The Pearson product moment correlation coefficient measuring the degree of
   association between teachers’ undergraduate preparation and teacher’s reported attitude
toward ELLs was not significant. This finding was supported by the output of the
multiple regression equation (reported above) in which the Beta-weight for undergraduate
preparation was both small and non-significant.

2. To what extent does the amount of professional development for working with
   ELLs predict elementary school content area teachers’ attitudes toward these
   students?
A non-significant Pearson product moment correlation of .045 suggested that amount of relevant professional development was not associated with teachers’ attitudes toward ELLs. Furthermore, in the regression equation testing predictors of teachers’ attitudes, amount of professional development also turned out not to be a significant predictor.

3. To what extent does elementary content area teachers’ bilingualism or monolingualism predict their attitudes toward ELLs?

A significant Pearson product moment correlation of .21 suggested the presence of a meaningful relationship between a teachers’ bilingualism and his or her reported attitude toward ELLs. This finding was supported by the results of the multiple regression analysis in which the Beta-weight for teachers’ status as bilingual turned out to be a significant predictor of attitude. Both analyses are significant to this study in that they appear to demonstrate that a teacher’s ability to speak more than one language relates positively to his or her attitude toward English language learners; and as discussed above, teachers’ attitude is a relatively strong predictor of their reported use of research-based strategies.

4. To what extent does the combined influence of the amount of undergraduate and professional development in ESL and bilingualism predict teachers’ attitudes toward ELL students?

I constructed a multiple regression equation to determine the extent to which undergraduate training, relevant professional development, and bilingualism combined to predict teachers’ attitude toward ELLs. The equation showed that the combined
association was significant, and that one variable, teachers’ bilingualism, was a significant predictor. The two other variables did not appear to function as significant predictors of teachers’ attitudes.

Summary of Findings

This study used various quantitative methods of data analysis with information obtained from a survey of elementary content-area teachers in Ohio to investigate the association between a set of independent variables—teacher training (pre-service training and in-service professional development), teachers’ attitudes toward ELLs, the percentage of ELLs enrolled in schools, and school resources (per pupil expenditure and school socioeconomic status)—and the research-based strategies that content area teachers reportedly use with English language learners, in consideration of appropriate statistical controls (i.e. school size, district size, teachers’ gender, and teachers’ experience\textsuperscript{14}). The study’s findings supported the claims listed below. Implications of these findings are discussed in Chapter 5.

- Teachers’ attitude appeared to be a relatively strong predictor of teachers’ use of research-based strategies with English language learners.
- The percentage of ELLs enrolled in a school may be a predictor of teachers’ use of a set of research-based strategies with these students. The higher the percentage of ELLs in the school, the lower the reported use of these strategies.

\textsuperscript{14} Age was omitted as a variable due to the fact that there were 149 missing responses for this item. Teachers’ years of experience was used as a proxy instead.
The extent to which teachers have engaged in relevant professional development may be a predictor of their reported use of research-based strategies for teaching ELLs.

School SES (i.e., percentage of students on free and reduced lunch), district per pupil expenditures, teachers’ gender, teachers’ years of experience, teachers’ undergraduate preparation, school size, and district size had no apparent association with teachers’ reported use of a set of research-based strategies.

District per pupil expenditure appeared to be a significant predictor of teachers’ attitude toward ELLs.

Teachers’ bilingualism appeared to be a significant predictor of teachers’ attitude toward ELLs.

Teachers’ level of experience also appeared to be a significant predictor of teachers’ attitude toward ELLs. The longer a respondent had been a teacher, the more negative was his or her attitude toward ELLs.
CHAPTER FIVE
Discussion and Recommendations

Introduction

This chapter interprets the major findings of the study and examines them in light of related literature. It also evaluates the strength of the evidence that the study produced and offers cautions about the study’s limitations. The chapter begins with a brief summary of the study’s findings and concludes with recommendations for further research as well as for practice and policy.

Brief Summary of Findings

The overarching research question guiding this study was the following: In consideration of appropriate statistical controls (i.e. school size, district size, teachers’ gender, and teachers’ experience\(^\text{15}\)), to what extent do professional training (both pre-service training and in-service professional development), teachers’ attitude toward ELLs, teachers’ bilingualism, schools’ percent of ELLs, and schools’ resources (both socioeconomic status and per pupil expenditures), singly and in combination, predict the set of research-based strategies that elementary school content area teachers reportedly use with English language learners?

As discussed in Chapter 4, multiple regression analyses (and associated bi-variate correlations and ANOVAs) led to six major findings:

- Teachers’ attitude appeared to be a relatively strong predictor of teachers’ reported use of research-based strategies with ELLs.

\(^{15}\) Age was omitted as a variable due to the fact that there were 149 missing responses for this item. Teachers’ years of experience was used as a proxy instead.
• The percentage of ELLs enrolled in a school appeared to be a predictor of teachers’ use of a set of research-based strategies with these students. The higher the percentage of ELLs in the school, the lower the reported use of these strategies.

• Some evidence pointed to the possibility that amount of relevant professional development is a predictor of teachers’ reported use of research-based strategies for teaching ELLs.

• The ability to speak more than one language appeared to be a significant predictor of teachers’ attitude toward ELLs.

• District per pupil expenditure appeared to be a significant predictor of teachers’ attitude toward ELLs.

• Teachers’ level of experience appeared to be a significant predictor of teachers’ attitude toward ELLs. The longer a respondent had been a teacher, the more negative was his or her attitude toward ELLs.

• Undergraduate preparation, school socioeconomic status (i.e. percentage of students on free and reduced lunch), district per pupil expenditures, teachers’ gender, teachers’ years of experience, school size, and district size had no apparent association with teachers’ reported use of a set of research-based strategies.

Discussion of Findings in Relationship to the Related Literature

In this section of the chapter, I first discuss the unique contributions of this study to literature on teachers’ work with English language learners. Next I consider how the
associations that were found to be significant in this study match up with associations revealed in earlier studies using similar variables. Finally, I consider why some variables that the literature seemed to suggest might have a relationship to teachers’ attitude toward and practices with ELLs actually did not turn out to be significant predictors in the current study.

Unique Contributions

This section of the chapter focuses on the unique contributions that the study makes to literature on the education of ELLs. Discussed in this section are findings related to (1) the percentage of ELLs enrolled in schools and (2) district per pupil expenditures. This study found significant relationships between both of these independent variables and one of the two dependent variables on which the study focused—teachers’ reported use of a set of research-based strategies and teachers’ attitude toward ELLs. The percentage of ELLs enrolled in schools had a negative association with the reported use of a set of research-based strategies with ELLs, and school districts’ levels of per pupil expenditure had a positive association with teachers’ reported attitude toward ELLs.

Percentage of ELLs. A full regression analysis performed using the data from the study identified a significant negative relationship between the percentage of ELLs in elementary schools and the reported use of a set of research-based strategies by content area teachers. In other words, the higher the percentage of English language learners enrolled in a school the less likely were teachers to report using a set of research-based strategies. This finding seems counter-intuitive. Although common sense might suggest
that large ELL enrollments in a school would result in teachers’ greater likelihood of using strategies that are known to help ELLs, the opposite seemed to be the case.

One possible explanation for this finding might be the limited resources available to some schools with large populations of ELLs. This possibility was supported by one of the findings in this study, namely that schools serving lower socioeconomic status students tended to have higher percentages of ELLs. Nevertheless, as some research shows, schools serving lower-SES students do not always lack resources, particularly when such resources are calculated in conventional terms such as per pupil expenditure (Wenglinsky, 1997). As Kozol (1991) reported, however, such schools often lack the materials and services they need; and numerous researchers report that schools serving this population suffer from organizational dysfunctions such as high turnover rates (e.g., Machtinger, 2007), low teacher morale (e.g., Ingersoll, 2004), and inhospitable cultures (e.g., Rossi & Montgomery, 1994).

Another possible explanation relates to the experience level of teachers in low-SES (and perhaps also high-ELL) schools. Notably, a study conducted by Betts and associates (2003) revealed that teachers in lower-SES schools tended to be less qualified in terms of teaching experience and preparation than teachers in higher-SES schools. Similarly, teachers in schools with higher percentages of ELLs may be less well qualified to teach, or have less experience teaching, than teachers in schools with lower percentages of ELLs (i.e., schools that tend to be more affluent). Findings from the current study, however, did not explicitly reveal such dynamics. Notably, the correlations
between schools’ percentage of ELLs and teachers’ pre-service and in-service professional preparation for teaching ELLs were extremely small and non-significant.

Perhaps, therefore, teachers’ lack of experience and preparation in general, not specifically their lack of experience and preparation for teaching ELLs, might be the reason for their reported tendency to use a set of research-based strategies less often than teachers in schools with fewer ELLs. The small and non-significant correlation between percent ELLs and teaching experience suggests, however, that “years of teaching experience” was not systematically associated with employment in a school either with high or low numbers of ELLs. Nevertheless, teaching experience can be characterized in far more subtle (and perhaps more valid) ways than “years of experience” (e.g., Huang & Moon, 2009). The current study, however, did not use variables that would permit such fine-grained analysis.

Still another possible explanation accounting for the association between schools’ percent of ELLs and teachers’ reported use of a set of research-based strategies might have to do with the construct of “threat rigidity.” This construct relates to teachers’ tendency to revert to more traditional teaching methods when they feel threatened (e.g., by accountability testing or, in this case, by increasing numbers of ELLs) (Daly, 2009). If the dynamics of threat rigidity indeed result from demographic shifts as well as other challenges, then one might expect to see research-based strategies used less often in the schools that, arguably, need them the most.

Perhaps one way to test the influence of increasing numbers of ELLs on the threat rigidity demonstrated by teachers would be to compare the reported strategies used by
teachers in schools with ELLs who have varying levels of English competence (i.e., emergent, beginner, intermediate, and so on). Theoretically, one might expect students who speak little or no English to present greater challenges to teachers than students who have at least beginning levels of English proficiency. If the theory holds, then teachers with the least English-proficient students would show the highest levels of “threat rigidity” as measured by the tendency to prefer traditional approaches to teaching, and those with the most English-proficient students would show the lowest levels of “threat rigidity.” Although my study did not test this claim, doing so in a follow-up study might help illuminate some of the dynamics to which findings from my study pointed.

As this discussion suggests, the negative association between schools’ percentage of ELLs and teachers’ reported use of research-based strategies is difficult to explain on the basis of findings from the current study and other related research. Clearly, additional research would be useful, first either to confirm or disconfirm the association between schools’ percentage of ELLs and teachers’ reported use of research-based strategies and second, if the association persists, to explore possible explanations for such dynamics.

Per-pupil expenditures. Although a full regression analysis using data from this study revealed that districts’ per pupil expenditure had no direct relationship to teachers’ reported use of a set of research-based strategies for working with ELLs, it also revealed that the relationship between per pupil expenditure and teachers’ attitude toward ELLs was positive and significant. Teachers from districts with higher per pupil expenditures were more likely to report positive attitudes toward ELLs than teachers from districts with lower per pupil expenditures. This finding adds new information to the literature
about the education of ELLs. Moreover, it fits with some earlier research on teachers’ attitudes toward other disadvantaged groups (e.g., Ernst & Rogers, 2009; Fradd, 1992).

Perhaps one reason why teachers in districts with higher per pupil spending appear to harbor more positive attitudes toward ELLs is that their districts use their additional resources to help these teachers work with the ELLs enrolled in their classes. For example, such districts may provide teachers with more (or better) training for working with ELLs, or they may purchase more (or better) materials for teachers to use with these students. Perhaps they are able to hire teachers with ESL certification who provide assistance to their colleagues in general education classrooms. In addition, districts with higher per pupil expenditures may be able to attract teachers who are bilingual, whereas districts with lower per pupil expenditures may be unable to attract these teachers. Districts with fewer dollars may also need to concentrate the limited resources they have on absolute necessities such as salaries for personnel, essential building maintenance, and pupil transportation.

*Findings that Appear to Fit with Findings from Earlier Studies*

This section of the chapter examines those findings from the study that appear to align with findings from earlier studies. Included in this section are discussions of the findings related to teachers’ attitude toward ELLs, teachers’ bilingualism, and teachers’ participation in relevant professional development. The study showed that each of these variables was directly or indirectly related to teachers’ reported use of research-based strategies with ELLs or to their reported attitude toward ELLs.
The relationship between attitudes and strategies. Some earlier research suggested that their attitudes toward English language learners might affect how teachers interact and work with this group of students (August & Hakuta 1997; Cummins, 2000; Diaz-Rico, 2000; Gonzalez & Darling-Hammond 2000; Gutierrez, 1991; Karabenick & Clemens Noda, 2004). Similarly, bi-variate correlations and multiple regression analyses computed in the current study revealed a significant relationship between teachers’ attitude toward ELLs and their reported use of a set of research-based strategies with these students. In particular, follow up analyses revealed that attitudes were more highly associated with some recommended strategies than with others. Table 15 provides a list of the significant associations.

Table 15

Associations between Strategies and Teachers’ Attitudes (from Strongest to Weakest)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>R</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>Connect new concepts to students’ background knowledge</td>
<td>.296**</td>
<td>.000</td>
</tr>
<tr>
<td>28</td>
<td>Give students opportunities to practice new vocabulary in a variety of meaningful ways</td>
<td>.262**</td>
<td>.000</td>
</tr>
<tr>
<td>15</td>
<td>Give students the opportunity to use oral language in daily classroom activities</td>
<td>.261**</td>
<td>.000</td>
</tr>
<tr>
<td>20</td>
<td>Use cooperative groups</td>
<td>.257**</td>
<td>.000</td>
</tr>
<tr>
<td>26</td>
<td>Use small group instruction</td>
<td>.203**</td>
<td>.000</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>R</td>
<td>p</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------</td>
<td>-----</td>
</tr>
<tr>
<td>14</td>
<td>Teach individual vocabulary words in the context of meaningful sentences</td>
<td>0.195**</td>
<td>0.000</td>
</tr>
<tr>
<td>5</td>
<td>Use visual cues to assist students in understanding the meaning of new words</td>
<td>0.181**</td>
<td>0.001</td>
</tr>
<tr>
<td>8</td>
<td>Use gestures when giving directions</td>
<td>0.168**</td>
<td>0.002</td>
</tr>
<tr>
<td>19</td>
<td>Use physical objects to assist students in understanding the meaning of new vocabulary</td>
<td>0.167**</td>
<td>0.002</td>
</tr>
<tr>
<td>9</td>
<td>Provide opportunities for each student to communicate at his or her level of language proficiency</td>
<td>0.166**</td>
<td>0.003</td>
</tr>
<tr>
<td>12</td>
<td>Use gestures to assist students in understanding the meaning of new vocabulary</td>
<td>0.155*</td>
<td>0.005</td>
</tr>
<tr>
<td>33</td>
<td>Model what you expect students to do on tasks and assignments</td>
<td>0.138*</td>
<td>0.012</td>
</tr>
<tr>
<td>10</td>
<td>Have students work in pairs when completing assignments</td>
<td>0.136*</td>
<td>0.014</td>
</tr>
<tr>
<td>7</td>
<td>Provide several meaningful examples of the application of new vocabulary words</td>
<td>0.135*</td>
<td>0.015</td>
</tr>
<tr>
<td>30</td>
<td>Replace complex vocabulary with simpler substitutes that still preserve the same meaning</td>
<td>0.123*</td>
<td>0.026</td>
</tr>
<tr>
<td>22</td>
<td>Teach content-specific vocabulary</td>
<td>0.119*</td>
<td>0.032</td>
</tr>
<tr>
<td>1</td>
<td>Keep individual work to a minimum</td>
<td>0.110*</td>
<td>0.048</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01
Most closely associated with teachers’ positive attitude toward English language learners were strategies having to do with vocabulary instruction; classroom organizational arrangements (i.e. cooperative groups, small groups, working in pairs); and the use of gestures, visual cues, or physical objects. Strategies that were not associated with a positive attitude included several related to the use of classroom assignments and tests (see Appendix I). Perhaps this pattern of significant and non-significant associations had something to do with the extensiveness of the changes that the different strategies required. For example, teachers who were positively disposed toward ELLs might have been able to find time to modify their methods of presenting information but perhaps could not find time for the more burdensome tasks required in order to modify assignments and tests in appropriate ways.

Alternately, one might see the association between attitudes and reported use of research-based strategies as representative of a different sequence of causal steps. In particular, the use of such strategies might cause (rather than being caused by) more positive attitudes. Teachers who already use certain student-centered strategies might be more likely than other teachers to experience positive interactions with and witness positive outcomes among ELLs. As a result of such experiences, these teachers might develop a more positive attitude toward ELLs than the attitude held by those of their colleagues who are less inclined to use student-centered approaches. This reasoning fits with earlier research on attitudes in which changes in practice have been shown to precede, rather than to follow, changes in attitude (e.g., Guskey, 2002).
The relationships among bilingualism, attitude, and strategies. The bi-variate correlation and multiple linear relationship between teachers’ bilingualism and their attitude toward ELLs seems to substantiate findings from previous research suggesting that individuals who have the ability to speak another language are more aware of and receptive to the needs of ELLs than those who do not (Lee & Oxelson, 2006). These findings also fit with claims made by the American Council on the Teaching of Foreign Language (n.d.), namely that the experience of being a language learner oneself helps individuals develop positive attitudes towards other languages and the speakers of those other languages.

Theoretical work on “integrativeness” (Gardner, 1983) may help explain why the experience of learning a second (or third) language might lead to greater appreciation of other language learners. According to this theory, individuals who learn a second language do so because they genuinely want to identify psychologically with another culture. By learning the second language, the individuals are able to become integrated with two communities, their community of origin and another language community with which they identify. Having a genuine interest in another culture and in learning the language spoken by members of that culture is most likely a result of the individual’s pre-existing positive attitude toward that other culture. This idea fits with the finding from the current study showing that teachers who are able to speak one or more languages in addition to English tend to report more positive attitudes toward ELLs than teachers who do not speak more than one language. “Integrativeness” theory suggests that the way the causal linkages work is this: positive attitudes toward a culture and its language produce
interest in learning the language, which in turn motivates study of the language, which in turn results in the ability to speak and understand the language. Teachers whose own experience has led them to this type of receptivity to learning another language may be particularly sympathetic and attentive to students who are having a similar experience.

The relationships among professional development, attitude, and strategies.

According to Ballantyne and associates (2008), teachers need specialized training that prepares them to meet the needs of English language learners. These authors suggested that, in order to provide high-quality instruction to ELLs, teachers need to be skilled in the use of a variety of curricular and instructional strategies. Nevertheless, many teachers do not receive professional development designed to provide such training. A study conducted by the National Center for Education Statistics (NCES, 2001) found that, although 86% of the teachers surveyed had participated in staff development activities, only 26% reported having received training that related to the instruction of English language learners.

In the regression models developed with data from the current study, the relationship between the amount of relevant professional development that teachers received and their use of a set of research-based strategies appeared to be indirect (i.e., possibly mediated by attitude)\(^\text{16}\). This finding seems to support many of the claims made in the prescriptive literature related to the instruction of ELLs (e.g., Karabenick & Clemens Noda, 2004; Lee & Oxelson, 2006).

\(^{16}\)Findings from the reduced model based on stepwise regression also lent some support to this interpretation.
It also appears to fit with earlier literature that documented the association between professional development and teachers’ attitudes toward other types of learners with special needs (e.g., Beckman, 2001; Salend, 1984). Literature pertaining to the instruction of students with disabilities, for example, suggested that lack of knowledge about these students, lack of experience teaching them, and limited training in the use of effective strategies for teaching them all contributed to teachers’ negative attitudes toward these students (e.g., Salend, 1984). According to this line of inquiry, when teachers’ skills are improved, their attitudes improve because they are better equipped to handle the challenges associated with teaching students who have special needs (Beckman, 2001). This explanation of how professional development seems to function to produce changes first in instructional practice and then in teachers’ attitudes corresponds closely to the model that Guskey (2002) described. Further study along these lines is needed in order to gain a better understanding of how professional development functions to influence teachers to use more effective strategies for working specifically with ELLs.

Findings in Which Independent Variables Showed Limited Influence

This section includes a discussion of the independent variables in the study that were not significantly associated with the dependent variable (i.e., reported use of research-based strategies for teaching ELLs) despite the fact that previous literature suggested that such associations might be likely. Two variables fit into this category: the undergraduate preparation of teachers and the socioeconomic status of the school population.
**Undergraduate preparation.** Some previous literature relating to teacher education suggested that teachers need to complete programs preparing them for bilingual or ESL certification in order to be effective in meeting the needs of ELLs (Alexander, Heaviside, & Farris, 1999; Karabenick & Clemens Noda, 2004). This perspective certainly fits with (and, indeed, is an example of) the view that, in order for teachers to be effective with ELLs, they need to have specialized training. Also in keeping with this perspective are changes recently made to the Higher Education Opportunity Act (HEOA, 2008). These changes require pre-service programs to provide course work and field experiences that prepare teachers to work with ELLs.

Despite these recommendations from the literature and the new legislative prescriptions, not many teacher preparation programs actually provide such content and experiences. In a 2001 study, for example, researchers found that less than one-sixth of all post-secondary institutions required teacher education candidates to learn content related to the instruction of ELLs (Menken & Antunez, 2001).

Although previous literature suggested the possibility that appropriate undergraduate training would increase teachers’ use of research-based strategies with English language learners, bi-variate correlations between variables in the current study did not reveal the anticipated association. Moreover, undergraduate preparation was not a significant predictor in any of the multiple regression models that this study investigated. These findings suggest the possibility that changes in teacher preparation programs might not yield the results that earlier literature claimed they would.
Nevertheless, this conclusion is obviously premature. After all, the current study revealed that undergraduate programs tended to provide little in the way of content related to the instruction of ELLs. Frequency analyses showed that, in general, respondents took very few courses in which the focus was on the instruction of English language learners. Of the 271 teachers who responded to this item on the questionnaire, 222 (i.e., 82%) indicated that they had taken no courses during their undergraduate preparation in which 50% or more of the content focused on the instruction of ELLs. Only 49 teachers (i.e., 18% of the respondents) indicated that they had taken one or more courses in which at least 50% of the content was focused on the instruction of ELLs. These findings point to the possibility that the non-significant association between relevant undergraduate course work and the use of research-based strategies may have been an artifact of the restriction in the range of this independent variable. This same artifact may also have attenuated the association between relevant undergraduate course work and teachers’ attitude toward ELLs.

**Recommendations for Future Research**

This section includes several recommendations for future research that were supported by findings from this study. It adds to the recommendations already suggested in the interpretative discussion above. My aim in providing these recommendations is to position future inquiry so that it avoids some of the difficulties I encountered while at the same time validating and building on my findings.

The first recommendation is for researchers to follow up on this study by using the same research design to conduct studies in other states and with more representative
samples. Although this study attempted to survey a representative sample of teachers, several circumstances kept it from actually being representative. For instance, of the 100 schools in the original cluster sample, only 65 participated in the study. In one of the largest urban districts in Ohio, only five of the 25 eligible schools participated. As well, in the district with the largest ELL population in Ohio, only one of the three qualifying schools participated in the study. Because the current study was not based on data from a representative sample, its findings are preliminary and somewhat speculative. Future studies with representative samples are needed in order to produce findings that can be generalized.

Of particular interest might be replications of the current study in the states of Arizona, California, Florida, and Illinois, which, according to the National Center for Education Statistics (2009), have the largest populations of ELLs. Repeating the study in the states of Idaho, Nebraska, Arkansas, and Missouri might also be warranted because these are the states where ELL populations may be more normally distributed than they are in other states (NCES, 1999). In the current study, many schools were excluded from the sampling frame because of their extremely low proportions of ELLs. Even so, frequency analyses revealed that the variable, percentage of ELLs, was positively skewed, because many of the participating schools had ELL enrollments of 20% or below.

A second recommendation is that researchers follow up by performing a multi-level analysis to evaluate the influence of independent variables at the teacher and school levels on teachers’ attitude towards ELLs. As reported in Chapter 4, the current study
used both teacher-level and school-level independent variables, but the analyses conducted in order to answer the research questions involved single-level regression equations only. The intra-class correlations calculated for the model in which attitude was the dependent variable, however, suggested the presence of a school-membership effect. This finding warrants further analysis using hierarchical linear modeling.

In addition, researchers might want to conduct validity studies to further refine the instructional strategies scale that I developed for use in the current study. Although I did perform an exploratory factor analysis, follow up studies would be useful in order to confirm the factor structure that I identified. In addition, studies of the scale’s construct validity would justify its use by other researchers who are interested in learning about teachers’ adoption of research-based strategies for teaching ELLs.

Another idea for expanding on the current study would be to survey teachers at school levels other than elementary (i.e. middle or high school) to compare the research-based strategies that teachers report they are using with ELLs of different ages. Similarly, one might compare the approaches used by teachers in the United States with those used by teachers in other countries, particularly countries in which bilingualism is the norm rather than the exception.

Exploring systematically the indirect influences on teachers’ reported use of research-based strategies that the current study revealed is another recommendation. Researchers, perhaps, could incorporate the same variables as I used but instead of analyzing them using multiple regression equations only, they might use path analysis or structural equation modeling. These approaches not only would clarify the indirect and
direct influences of the independent variables, but they also might begin to point to the possibility of certain causal connections.

Also recommended is additional research to confirm the apparent linkage between teachers’ bilingualism and their attitude toward English language learners. For example, comparing the attitudes of teachers who are native speakers of a second language with those of teachers who acquired their second language in school might give researchers and policy-makers insight into the extent to which requiring pre-service teachers to learn a foreign language might be an effective way to cultivate appropriate dispositions for working with ELLs.

Furthermore, I believe additional research is needed to determine the conditions under which the use of research-based strategies is more and less prevalent. For example, researchers might make comparisons by studying the use of such strategies in schools where ELLs mostly speak the same native language and in schools where ELLs speak many different native languages. Teachers who work with groups of ELLs most of whom speak the same native language (e.g., Spanish) may find that interacting with these students become easier and easier over time. Their growing familiarity with the language and culture of their students may therefore result in a positive attitude toward ELLs and increased likelihood of using research-based strategies. Teachers in schools where ELLs speak many different native languages, by contrast, may not be as familiar with the native languages and cultures of their students because of the diversity of the backgrounds of these students. These teachers may be uncomfortable with the experience of working with ELLs, perhaps resulting in a more negative attitude toward and less frequent use of
research-based strategies with these students. Follow-up studies along these lines might provide better understanding of this study’s somewhat troubling finding about the negative association between the proportion of ELLs in a school and the reported use of the set of research-based instructional strategies.

I also recommend that researchers conduct studies on the impact of teacher education programs that incorporate preparation for working with ELLs. Such studies are particularly important now that the Higher Education Opportunity Act (2008) has mandated that such programs incorporate preparation for working with ELLs. Moreover, once the mandated changes have been put into place and teachers have received what universities believe to be appropriate preparation for teaching English language learners, researchers will be able to study the impact of this training on the strategies that teachers use with the ELLs in their classrooms.

Another recommendation is to study the impact of intense preparation related to the instruction of ELLs on the strategies that teachers use with these students. For higher education institutions that currently provide intense preparation for working with ELLs (i.e. coursework relating to the instruction of ELLs), further research might include surveys of teachers who have attended these colleges and universities to discover the frequency of their use of research-based strategies with English language learners. Along with research pertaining to teachers’ reported use of research-based strategies with ELLs, further research may also be warranted to study the impact of teacher preparation programs on new teachers’ attitudes toward ELLs.
Although efficacy studies of initial teacher preparation programs will be difficult to design and conduct, rigorous efficacy studies of professional development programs for in-service teachers are feasible. These studies might make use of experimental designs to evaluate the kinds of professional development activities that are most likely to produce positive attitudes among teachers toward ELLs and to encourage their use of research-based strategies with this group of learners. For instance, an efficacy study using random assignment to treatment and control groups might assess the impact of several different types of professional development (e.g., training in the use of a set of research-based strategies, cultural sensitivity training) on teachers’ attitudes toward ELLs and their use of research-based strategies with these students.

This discussion suggested that follow-up studies might involve additional work with the data set collected for the current study. Other follow-up studies might deploy the same research design but with different samples of teachers. Eventually, if researchers want to gain definitive evidence about how to improve teachers’ attitudes toward ELLs and to increase teachers’ use of research-based instructional strategies, they will need to conduct efficacy studies that make use of experimental or quasi-experimental designs.

Recommendations for Practice

This study showed—although rather tentatively—that the extent of teachers’ participation in relevant professional development was a predictor of their reported use of research-based strategies for teaching ELLs. A recommendation for future practice, then, is that schools and school districts with large populations of ELLs provide training to teachers who are charged with the responsibility of teaching these students. Because it is,
as yet, unclear what types of professional development activities would be most beneficial, a reasonable recommendation to districts is that they provide training that focuses both on the use of a set of research-based strategies that are effective with ELLs and on cultural responsiveness in general.

This recommendation also responds to findings from an NCES study on teacher preparedness and professional development, which showed that teachers were uncomfortable with their lack of knowledge about how to teach ELLs (National Center for Education Statistics, 2001). Providing teachers with training in the instruction of ELLs perhaps would result in their feeling more comfortable with having ELLs in their classrooms. Moreover, teachers’ increased comfort—which is closely tied to their self-efficacy (Beckman, 2001)—is likely to have a positive influence on their attitudes and practices.

While the literature suggests that certain research-based strategies appear to be effective with English language learners, this study found that not all teachers are using these strategies. A further recommendation related to professional development, then, would be to provide training that demonstrates how to use these research-based strategies, especially the ones that teachers seem to be using least frequently (e.g., teaching content-specific vocabulary and using simple language when explaining new concepts to students).

Because teachers’ attitude was found to be a significant predictor of their reported use of research-based strategies with ELLs, moreover, I believe that cultural sensitivity and diversity training need to be provided both to pre-service teachers and to educators
who are currently working with ELLs. This recommendation is based on evidence from the current study showing the variability in the responses to the scales measuring teachers’ attitude toward ELLs and their use of research-based instructional strategies with this group of students. Such variability suggests that not all teachers may hold sufficiently positive attitudes and that not all teachers may be using research-based strategies.

Recommendations for Policy

Based on the findings of this study, certain recommendations for changes in policy in school districts and in teacher preparation programs should be considered. These changes primarily relate to the finding showing the significant association between teachers’ bilingualism and their attitude toward ELLs.

Although this study found that teachers’ bilingualism was a significant predictor of their attitude toward ELLs, it also provided some evidence suggesting that bilingualism may relate indirectly to teachers’ use of research-based strategies. A previous study, conducted by Lee and Oxelson (2006), also showed that a connection seemed to exist between teachers’ bilingualism and their attitude toward ELLs. These findings warrant the recommendation that school districts at least offer foreign language instruction (if not going so far as to require enrollment in foreign language classes) to teachers who are assigned to work with ELLs.

These findings also support the recommendation that teacher preparation programs incorporate some kind of foreign-language fluency requirement into their pre-service programs. In addition to the likelihood that teachers’ bilingualism influences their
attitude toward ELLs and in turn the strategies they use with these students, Lee and Oxelson (2006) also found that teachers who had personal experiences with languages other than English had greater sensitivity than other teachers to issues of diversity. These researchers also found that the greater cultural sensitivity shown by these teachers resulted in a greater interest in addressing the needs of ELLs. Requiring pre-service teachers to acquire some level of foreign language fluency, then, might result in new teachers who come into classrooms with positive attitudes toward ELLs, including the disposition to use research-based strategies with these learners.

Furthermore, because the ability to speak another language has been found to be associated with positive attitudes toward speakers of other languages, school districts might wish to consider certain changes in their curriculum policies. In particular, they might want to consider including some level of fluency in a second language among the requirements for high school graduation. Moreover, school districts might find that such policies are easier to enforce if instruction in the second language starts early in students’ schooling, involves some degree of immersion, and builds on the obvious logical connection between foreign language instruction for native-born Americans and English-language instruction for students from other countries (i.e. Coltrane, 2003; Cummins, 2000; Thomas & Collier, 1997).

Limitations

This section of the chapter discusses the limitations of the study and evaluates the strength of the evidence it presents in light of these limitations. In general, it advises caution in interpreting any of the study’s findings as definitive.
One obvious limitation of this study was its reliance on self-report data from the teachers who responded to the survey. For self-report data to provide a valid measure of individuals’ attitudes or practices, those who supply it must be both honest and accurate. Nevertheless, some research shows that teachers tend to overestimate the extent to which they use effective practices (Gilovich, Kruger, & Medvec, 2002). Although attitudes cannot be observed, practices can. An alternative—and perhaps preferable—method of studying teachers’ use of research-based strategies, therefore, might entail direct observation in classrooms.

Another limitation was the potential for social desirability bias in teachers’ responses to items on the two scales, but especially in their responses to the scale measuring their attitude toward ELLs. Because the analysis from the pilot study indicated that social desirability bias might have influenced teachers’ responses to certain items on the attitude scale, I added several new items and re-worded other items when I developed the final instrument. I added these items in order to address, and hopefully, eliminate the impact of such bias in the data obtained using the final version of the instrument.

Nevertheless, as it turned out, the items that seemed to elicit socially desirable responses on the pilot version of the instrument also seemed to elicit socially desirable responses on the final version of the instrument. The extent to which such bias interfered with the apparent associations that the data analyses revealed is unknown. Further research might seek ways to elicit information about teachers’ attitudes toward ELLs that do not trigger teachers’ tendency to second-guess the researcher. Perhaps less direct measures of
attitude, such as a scale comprised of projective items, might be used in an effort to limit social desirability bias (Fisher, 1993).

One possible explanation for social desirability bias in the responses of teachers may be that I relied on principals to distribute and collect the questionnaires. Teachers perhaps assumed that their principals would read their responses, and therefore they may have produced responses that they believed would be acceptable to their principals.

The method I used for distributing and collecting the questionnaires also may have given principals too much latitude in administering the questionnaire to teachers and explaining its purpose to them. In the absence of a prescriptive set of steps for explaining, distributing, and collecting the questionnaire, principals undoubtedly varied in the approaches they used. Some principals may have required teachers to complete the questionnaire during a staff meeting, others may have asked them to complete the questionnaire at home, and some may have allowed them to complete the questionnaire during their planning periods. Such differences in the way the instrument was administered may have had an influence on the responses that teachers supplied (e.g., Kitchenham & Pfleeger, 2002; Peterson, 2005). With the benefit of hindsight, I now believe I might have improved the internal validity of the study by providing principals with a scripted set of steps to guide their explanation of the study as well as their procedures for distributing the questionnaire to teachers and collecting completed questionnaires from them.

The sample from which I collected data also introduced a serious limitation with implications for the external validity of the study. First, the sampling frame did not
include all of the elementary schools in the state, but only those where data about percentage of ELLs was available. Moreover, no private or charter schools were included in the sample although there may be such schools in the state of Ohio with ELL percentages of 8.9% or higher. Finally, not all schools returned survey packets and not all teachers in the schools that did return survey packets responded to the survey. In consideration of these circumstances, I must acknowledge the fact that the sample was far from random and therefore did not represent any discrete population of teachers. Although I did not set out to use a convenience sample, in the end that is the type of sample that I obtained. As a consequence, the associations revealed via my analyses of the data from the sample of teachers who responded to the survey do not necessarily reflect those that might be found using data gathered from a different group of elementary-school teachers. As noted above, follow-up studies with random samples of teachers are needed in order to produce generalizable findings.

Summary

This chapter included a summary of the major findings of the study. The discussion focused on findings that made unique contributions to existing literature as well as on findings that coincided with associations brought to light in previous related studies. Finally, the chapter included a summary of the findings in which independent variables demonstrated limited associations with teachers’ attitude toward ELLs and the set of research-based strategies that they reportedly use with these students.

The chapter discussed two findings that made unique contributions to the literature on the education of ELLs:
The percentage of ELLs enrolled in schools was associated negatively with the extent to which teachers reported that they used research-based strategies with these students. In other words, the greater the ELL enrollment in the school, the less likely were teachers to report using a set of research-based strategies for instructing ELLs.

District per pupil expenditure was positively associated with teachers’ attitude toward ELLs but not to the extent to which teachers reported using research-based strategies for teaching ELLs.

The chapter also considered three findings that fit with outcomes reported in the body of related empirical literature, and it interpreted these findings in light of findings from the earlier studies:

- Teachers’ attitude toward ELLs was positively associated with the strategies that they reportedly used with these students.
- The ability to speak more than one language was positively associated with teachers’ attitude toward ELLs.
- Some evidence pointed to the possibility that the amount of relevant professional development that teachers had received might be a predictor of their reported use of research-based strategies for teaching ELLs.

Finally, the chapter discussed two findings in which predictor variables that previous research suggested might be associated with teachers’ attitude toward ELLs or their use of a set of research-based strategies with these learners actually turned out to have no such associations:
- Undergraduate preparation had no relationship to teachers’ reported use of research-based strategies for teaching ELLs or with their attitude toward ELLs.
- School socioeconomic status (i.e., percentage of students on free and reduced lunch) had no relationship to teachers’ reported use of research-based strategies for teaching ELLs or with their attitude toward ELLs.

Based on the results of the study and on similar findings from previous related research, I then offered recommendations for future research. I suggested that the following studies, among others, might be useful: (1) a study replicating the current study in states that have the largest populations of ELLs (e.g., Florida, Arizona); (2) a study replicating the current study in states that have more normally distributed populations of ELLs (e.g., Nebraska, Arkansas); (3) a study of the strategies for teaching ELLs used by teachers at grade levels other than those typically served by elementary schools; and (4) a multi-level (HLM) study of the influence of teachers’ years of experience, the amount of relevant professional development they had received, their bilingualism, schools’ percentage of ELLs, and districts’ per pupil expenditures on teachers’ attitude toward ELLs.

The chapter also offered recommendations for practice and for policy. In terms of practice, the study supported the provision of focused professional development to all teachers responsible for teaching English language learners. In terms of policy, the study supported changes that would enable (or even require) teachers and pre-service candidates to acquire some level of fluency in a foreign language.
The chapter concluded with an evaluation of the strength of the evidence that the study presented in consideration of several serious threats to its internal and external validity. This discussion pointed to alternative approaches that might have strengthened the study’s validity. Adopting these approaches will improve the validity of future studies in which researchers explore similar research questions or use a similar research design.
References


Howard, G. (2007). As diversity grows, so must we. Educational Leadership 64(6), 16-22.


Appendix A
Pilot Survey Instrument

Pilot Question Survey

Directions

Instructions: Mark only one (1) response. If you feel the statement is not applicable, leave it blank.
Please answer carefully and thoughtfully.

To what extent do you:

1. Teach individual vocabulary words in the context of meaningful sentences.
2. Give students opportunities to practice new vocabulary in a variety of meaningful ways.
3. Provide many meaningful examples of the application of new vocabulary words.
4. Teach content-specific vocabulary.
5. Replace complex vocabulary with simpler substitutes that still preserve the same meaning.
6. Use sentence starters as a way to get students to generate sentences using new vocabulary.
7. Use sentences with blanks for students to fill in as a way to get students to practice using new vocabulary.
8. Use visual cues to assist students in understanding the meaning of new vocabulary.
9. Use physical objects to assist students in understanding the meaning of new vocabulary.
10. Use gestures to assist students in understanding the meaning of new vocabulary.
11. Purposefully present new vocabulary words to students in teacher directed lessons.
12. Use simple language when giving directions.
15. Have students choose answers from a list.
16. Uses multiple choice items on assignments or tests.
17. Connect new concepts to students' background knowledge and experiences.
18. Model what you expect students to do on tasks and assignments.
19. Use gestures when giving directions.
20. When asking students to complete an assignment give directions both orally and in writing.
21. After giving directions for an assignment, ask questions to make sure all students understand the assignment.
22. Ask students to re-state directions for academic tasks.
23. Use cooperative learning.
24. Have students work in pairs when completing assignments.
25. Keep individual work to a minimum.
26. Use one-on-one instruction.
27. Use small group instruction.
28. Follow structured classroom routines.
29. Check daily to see that students understand classroom routines.
30. Give students opportunities to use oral language in daily classroom activities.
31. Provide opportunities for each student to communicate at his or her level of language proficiency.
32. Use open-ended questioning during classroom discussions.
33. Use simple language when explaining new concepts to students.

-Over-
For the following items, please indicate if you agree or disagree:

34. To be considered American, one should speak English.
35. I would support the government spending additional money to provide better programs for linguistic-minority students in public schools.
36. Parents of non- or limited-English proficient students should be counseled to speak English with their children whenever possible.
37. It is important that people in the US learn a language in addition to English.
38. It is unreasonable to expect a regular classroom teacher to teach a child who does not speak English.
39. The rapid learning of English should be a priority for non-English proficient or limited English proficient students even if it means they lose the ability to speak their native language.
40. Local and state governments should require that all government business (including voting) be conducted only in English.
41. Having a non- or limited-English proficient student in the classroom is detrimental to the learning of the other students.
42. Regular classroom teachers should be required to receive pre-service or in-service training to be prepared to meet the needs of linguistic minorities.
43. Most non- and limited-English proficient children are not motivated to learn English.
44. At school, the learning of the English language by non- or limited-English proficient children should take precedence over learning subject matter.
45. English should be the official language of the United States.
46. Non- and limited-English proficient students often use unjustified claims of discrimination as an excuse for not doing well in school.

Please specify your age in years.

As an undergraduate student, how many courses were you required to take in which more than 50% of the course content focused on English language learners or English as a Second Language instruction?

As a graduate student, how many courses have you taken in which more than 50% of the course content focused on English language learners or English as a Second Language instruction?

How many professional development activities in which you have participated were primarily devoted to the teaching of English language learners?

Please indicate your gender.

Do you speak a language?

Do you speak more than two languages?
Appendix B
Permission for the use of LATS

Dear Lucy Rader-Brown,

Permission is granted to use and adapt items from the LATS. I hope your research goes well.

Warm Regards,

--

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School of Teacher Education and Leadership
Utah State University
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435-797-0396
Deborah.byrnes@usu.edu
Appendix C
Attitude Items

Original Attitude Items

34. To be considered American, one should speak English.
35. I would support the government spending additional money to provide better programs for linguistic-minority students in public schools.
36. Parents of non-or-limited-English proficient students should be counseled to speak English with their children whenever possible.
37. It is important that people in the US learn a language in addition to English.
38. It is unreasonable to expect a regular classroom teacher to teach a child who does not speak English.
39. The rapid learning of English should be a priority for non-English-proficient or limited-English-proficient students even if it means they lose the ability to speak their native language.
40. Local and state governments should require that all government business (including voting) be conducted only in English.
41. Having a non-or limited-English proficient student in the classroom is detrimental to the learning of the other students.
42. Regular classroom teachers should be required to receive pre-service or in-service training to be prepared to meet the needs of linguistic minorities.
43. Most non-and limited English proficient children are not motivated to learn English.
44. At school the learning of the English language by non-or limited English proficient children should take precedence over learning subject matter.
45. English should be the official language of the United States.
46. Non-and limited English proficient students often use unjustified claims of discrimination as an excuse for not doing well in school.

Added items:

- With the many financial needs of schools, the government might need to cut back on its support for programs serving limited English proficient students.
- People in the US do not need to learn to speak a second language.
- Parents of non-English proficient students should be encouraged to speak with their children in whatever language they feel most comfortable.
- Having a non-or limited English proficient student in the classroom helps the other students learn better.
- The United States should not have one official language.
Appendix D
Regression with Attitude Omitted

Model Summary

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a. Predictors: (Constant), 34. Please indicate your gender., SES, 56. As an undergraduate student, how many courses were you required to take in which more than 50% of the course content focused on English language learners or English as a Second Language instruction?, 58. How many professional development activities in which you have participated were primarily devoted to the teaching of English language learners?, Districtsize, 59. How many year have you been teaching?, 36. Can you carry on a conversation in a second language?, ELL Percentages, Bldgsize, PPExpend

ANOVA\(b\)

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a. Predictors: (Constant), 34. Please indicate your gender., SES, 56. As an undergraduate student, how many courses were you required to take in which more than 50% of the course content focused on English language learners or English as a Second Language instruction?, 58. How many professional development activities in which you have participated were primarily devoted to the teaching of English language learners?, Districtsize, 59. How many year have you been teaching?, 36. Can you carry on a conversation in a second language?, ELL Percentages, Bldgsize, PPExpend

b. Dependent Variable: practices
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<td></td>
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<td></td>
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<td>36. Can you carry on a conversation in a second language?</td>
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<td>59. How many years have you been teaching?</td>
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<td>58. How many professional development activities in which you have participated were primarily devoted to the teaching of English language learners?</td>
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<td>34. Please indicate your gender.</td>
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Appendix E  
Second Approach to Full Regression Model

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$R^2 = .023$

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<td></td>
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$R^2 = .073$

Model 3

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<tr>
<td>Undergraduate Coursework</td>
<td>.087</td>
<td>.233</td>
</tr>
<tr>
<td>Teacher Attitude</td>
<td>.301</td>
<td>.000</td>
</tr>
<tr>
<td>Bilingual/Multilingual</td>
<td>.062</td>
<td>.407</td>
</tr>
</tbody>
</table>

$R^2 = .193$
Appendix F
Instrument Items Identified with Strategies

Strategies Specific to ELLs

1. Keep individual work to a minimum.
2. Use simple language when explaining new concepts to students.
3. Use visual cues to assist student in understanding the meaning of new vocabulary.
4. Use one-on-one instruction.
5. Use gestures when giving directions.
6. Provide opportunities for each student to communicate at his or her level of language proficiency.
7. Have students work in pairs when completing assignments.
8. Use simple language when giving directions.
9. Use gestures to assist students in understanding the meaning of new vocabulary.
11. Give students opportunities to use oral language in daily classroom activities.
12. Use multiple-choice items on assignments or tests.
14. Replace complex vocabulary with simpler substitutes that still preserve the same meaning.
15. Have students choose answers from a list.
16. Model what you expect students to do on tasks and assignments.

General Teaching Strategies also Effective with ELLs

6. After giving directions for an assignment, ask questions to make sure all students understand the assignment.
7. Use open ended questioning during classroom discussions.
8. Use visual cues to assist students in understanding the meaning of new vocabulary.
9. Provide several meaningful examples of the application of new vocabulary words.
10. Teach individual vocabulary words in the context of meaningful sentences.
11. When asking students to complete an assignment, give directions both orally and in writing.
12. Ask students to re-state directions for academic tasks.
13. Purposefully present new vocabulary words to students in teacher directed lessons.
14. Use physical objects to assist students in understanding the meaning of new vocabulary.
15. Use cooperative learning.
16. Teach content-specific vocabulary.
17. Follow structured classroom routines.
24. Use sentences with blanks to fill in as a way to get students to practice using new vocabulary.
25. Use sentence starters as a way to get students to generate sentences using new vocabulary.
26. Use small group instruction.
27. Check daily to see that students understand classroom routines.
28. Give students opportunities to practice new vocabulary in a variety of meaningful ways.
32. Connect new concepts to students’ background knowledge and experience.
33. Model what you expect students to do on tasks and assignments.
Appendix G
Principal Components Analysis

The principal components analysis identified ten factors with Eigenvalues greater than 1. The total variance explained by the analysis was 64%. The rotated matrix revealed the factors that were loaded on each component. Nevertheless, the point of inflection on the scree plot suggested that only three of the factors might actually be reliable. The three factors explained 34% of the overall variance. With respect to these three factors, six variables had factor loadings of .4 or greater on the first, seven had similarly high factor loadings on the second, and four had similarly high loadings on the third. Table J-1 shows the variables that load on each factor, with the higher-loading variables noted in boldface.

Table J-1
Variables Loaded on Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Component 1 Loading</th>
<th>Component 2 Loading</th>
<th>Component 3 Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide several meaningful examples of the application of new vocabulary words</td>
<td>.160</td>
<td>-.092</td>
<td>.192</td>
</tr>
<tr>
<td>Teach individual vocabulary words in the context of meaningful sentences</td>
<td>-.029</td>
<td>.169</td>
<td>-.085</td>
</tr>
<tr>
<td>Purposefully present new vocabulary words to students in teacher directed lessons</td>
<td>.173</td>
<td>.091</td>
<td>.001</td>
</tr>
<tr>
<td>Teach content-specific vocabulary</td>
<td>.156</td>
<td>.009</td>
<td>.128</td>
</tr>
<tr>
<td>Use sentence starters as a way to get students to generate sentences using new vocabulary</td>
<td><strong>.450</strong></td>
<td>.351</td>
<td>.202</td>
</tr>
<tr>
<td>Give students opportunities to practice new vocabulary in a variety of meaningful ways</td>
<td>.047</td>
<td>.038</td>
<td>.100</td>
</tr>
<tr>
<td>Keep individual work to a minimum</td>
<td>.177</td>
<td>.107</td>
<td>-.030</td>
</tr>
<tr>
<td>Use simple language when explaining new concepts to students</td>
<td>.111</td>
<td>.127</td>
<td>.093</td>
</tr>
<tr>
<td>After giving directions for an assignment, ask questions to make sure all students understand their assignment</td>
<td>.077</td>
<td>.149</td>
<td>.025</td>
</tr>
<tr>
<td>Use open ended questioning during classroom discussions</td>
<td>-.014</td>
<td>.187</td>
<td>-.187</td>
</tr>
<tr>
<td>Use one-on-one instruction</td>
<td>.027</td>
<td>-.035</td>
<td>.072</td>
</tr>
<tr>
<td>Variable</td>
<td>Component 1 Loading</td>
<td>Component 2 Loading</td>
<td>Component 3 Loading</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Use small group instruction</td>
<td>.151</td>
<td>.201</td>
<td>.276</td>
</tr>
<tr>
<td>Check daily to see that students understand classroom routines</td>
<td>.106</td>
<td>.467</td>
<td>-.039</td>
</tr>
<tr>
<td>Use gestures when giving directions</td>
<td>-.023</td>
<td>.550</td>
<td>.507</td>
</tr>
<tr>
<td>Provide opportunities for each student to communicate at his or her level of language proficiency</td>
<td>-.061</td>
<td>-.046</td>
<td>.166</td>
</tr>
<tr>
<td>Have students work in pairs when completing assignments</td>
<td>.175</td>
<td>.158</td>
<td>.077</td>
</tr>
<tr>
<td>Use simple language when giving directions</td>
<td>.165</td>
<td>.102</td>
<td>.232</td>
</tr>
<tr>
<td>Use gestures to assist students in understanding the meaning of new vocabulary</td>
<td>.044</td>
<td>.097</td>
<td>.714</td>
</tr>
<tr>
<td>Ask for fill-in the blank answer completion rather than generation of lengthy written responses</td>
<td>.765</td>
<td>.018</td>
<td>.001</td>
</tr>
<tr>
<td>Replace complex vocabulary with simpler substitutes that still preserve the same meaning</td>
<td>.046</td>
<td>-.007</td>
<td>.160</td>
</tr>
<tr>
<td>Use multiple choice items on assignments and tests</td>
<td>.737</td>
<td>.109</td>
<td>-.103</td>
</tr>
<tr>
<td>Use sentences with blanks for students to fill in as a way to get students to practice using new vocabulary</td>
<td>.586</td>
<td>.167</td>
<td>.168</td>
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<tr>
<td>Have students choose answers from a list</td>
<td>.761</td>
<td>.094</td>
<td>-.011</td>
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<tr>
<td>Use visual cues to assist students in understanding the meaning of new vocabulary</td>
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<td>-.025</td>
<td>.731</td>
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<tr>
<td>Use physical objects to assist students in understanding the meaning of new vocabulary</td>
<td>-.019</td>
<td>-.040</td>
<td>.816</td>
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<tr>
<td>Give students opportunities to use oral language in daily classroom instruction</td>
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<td>.191</td>
<td>.068</td>
</tr>
<tr>
<td>When asking students to complete an assignment, give directions both orally and in writing</td>
<td>.269</td>
<td>.528</td>
<td>-.265</td>
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<tr>
<td>Ask students to re-state directions for</td>
<td>.128</td>
<td>.712</td>
<td>.096</td>
</tr>
<tr>
<td>Variable</td>
<td>Component 1 Loading</td>
<td>Component 2 Loading</td>
<td>Component 3 Loading</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>academic tasks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use cooperative learning</td>
<td>.098</td>
<td>.119</td>
<td>.176</td>
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<tr>
<td>Follow structured classroom routines</td>
<td>.147</td>
<td><strong>.509</strong></td>
<td>-.044</td>
</tr>
<tr>
<td>Connect new concepts to students’ background knowledge and experience</td>
<td>.070</td>
<td><strong>.479</strong></td>
<td>-.047</td>
</tr>
<tr>
<td>Model what you expect students to do on tasks and assignments</td>
<td>-.055</td>
<td><strong>.456</strong></td>
<td>.160</td>
</tr>
<tr>
<td>Ask for fill-in-the-blank answer completion rather than generation of lengthy oral responses</td>
<td><strong>.772</strong></td>
<td>-.065</td>
<td>-.053</td>
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Appendix H
Scatterplot

Dependent Variable: practices
Appendix I
Strategies not Associated with a Positive Attitude

<table>
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<tr>
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<th>Description</th>
<th>R</th>
<th>p</th>
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<td>2</td>
<td>Use simple language when explaining new concepts to students</td>
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<td>.076</td>
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<td>3</td>
<td>After giving directions for an assignment, ask questions to make sure all students understand the assignment</td>
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<td>.307</td>
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<tr>
<td>4</td>
<td>Use open ended questioning during classroom discussions</td>
<td>.023</td>
<td>.684</td>
</tr>
<tr>
<td>6</td>
<td>Use on-on-one instruction</td>
<td>.095</td>
<td>.087</td>
</tr>
<tr>
<td>11</td>
<td>Use simple language when giving directions</td>
<td>.060</td>
<td>.276</td>
</tr>
<tr>
<td>13</td>
<td>Ask for fill-in-the-blank answer completion rather than generation of lengthy written responses</td>
<td>.044</td>
<td>.433</td>
</tr>
<tr>
<td>16</td>
<td>When asking students to complete an assignment, give directions both orally and in writing</td>
<td>.083</td>
<td>.134</td>
</tr>
<tr>
<td>17</td>
<td>Ask students to re-state directions for academic tasks</td>
<td>.064</td>
<td>.248</td>
</tr>
<tr>
<td>18</td>
<td>Purposefully present new vocabulary words to students in teacher directed lessons</td>
<td>.108</td>
<td>.051</td>
</tr>
<tr>
<td>21</td>
<td>Use multiple choice items on assignments or tests</td>
<td>.019</td>
<td>.735</td>
</tr>
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<td>23</td>
<td>Follow structured classroom routines</td>
<td>.060</td>
<td>.277</td>
</tr>
<tr>
<td>24</td>
<td>Use sentences with blanks for students to fill in as a way to get students to practice new vocabulary</td>
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<td>.933</td>
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<td>25</td>
<td>Use sentence starters as a way to get students to generate sentences using new vocabulary</td>
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<td>.056</td>
</tr>
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<td>27</td>
<td>Check daily to see that students understand classroom routines</td>
<td>.099</td>
<td>.073</td>
</tr>
<tr>
<td>29</td>
<td>Ask for fill-in-the-blank answer completion rather than generation of lengthy oral responses</td>
<td>.023</td>
<td>.675</td>
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<tr>
<td>31</td>
<td>Have students choose answers from a list</td>
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<td>.140</td>
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</table>
Appendix J
Final Instrument

English Language Learner Questionnaire

Consider your use of the following instructional strategies.
To what extent do you:

1. Keep individual work to a minimum.
2. Use simple language when explaining new concepts to students.
3. After giving directions for an assignment, ask questions to make sure all students understand the assignment.
4. Use open-ended questioning during classroom discussions.
5. Use visual cues to assist students in understanding the meaning of new vocabulary.
6. Use one-on-one instruction.
7. Provide several meaningful examples of the application of new vocabulary words.
8. Use gestures when giving directions.
9. Provide opportunities for each student to communicate at his or her level of language proficiency.
10. Have students work in pairs when completing assignments.
11. Use simple language when giving directions.
12. Use gestures to assist students in understanding the meaning of new vocabulary.
14. Teach individual vocabulary words in the context of meaningful sentences.
15. Give students opportunities to use oral language in daily classroom activities.
16. When asking students to complete an assignment, give directions both orally and in writing.
17. Ask students to re-state directions for academic tasks.
18. Purposefully present new vocabulary words to students in teacher-directed lessons.
19. Use physical objects to assist students in understanding the meaning of new vocabulary.
20. Use cooperative learning.
21. Use multiple-choice items on assignments or tests.
22. Teach content-specific vocabulary.
23. Follow structured classroom routines.
24. Use sentences with blanks for students to fill in as a way to get students to practice using new vocabulary.
25. Use sentence starters as a way to get students to generate sentences using new vocabulary.
26. Use small group instruction.
27. Check daily to see that students understand classroom routines.
28. Give students opportunities to practice new vocabulary in a variety of meaningful ways.
30. Replace complex vocabulary with simpler substitutes that still preserve the same meaning.
31. Have students choose answers from a list.
32. Connect new concepts to students’ background knowledge and experience.
33. Model what you expect students to do on tasks and assignments.
34. Please indicate your gender:
   - Male
   - Female
35. Do you speak a second language?
   - Yes
   - No
36. Can you carry on a conversation in a second language?
   - Yes
   - No

Over
Please indicate your agreement with the following items:

<table>
<thead>
<tr>
<th>Item</th>
<th>SD</th>
<th>D</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. To be considered American, one should speak English.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>38. I would support the government spending additional money to provide better programs for linguistic-minority students in public schools.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. Parents of non- or limited-English-proficient students should be counseled to speak English with their children whenever possible.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>40. With the many financial needs of schools, the government might need to cut back on its support for programs serving limited English proficient students.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>41. It is important that people in the US learn a language in addition to English.</td>
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</tr>
<tr>
<td>42. It is unreasonable to expect a regular classroom teacher to teach a child who does not speak English.</td>
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</tr>
<tr>
<td>43. People in the United States do not need to learn to speak a second language.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>44. The rapid learning of English should be a priority for non-English proficient or limited English proficient students even if it means they lose the ability to speak their native language.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45. Local and state governments should require that all government business (including voting) be conducted only in English.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>46. Parents of English proficient students should be encouraged to speak with their children in whatever language they find most comfortable.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47. Having a non- or limited-English proficient student in the classroom is detrimental to the learning of the other students.</td>
<td></td>
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</tr>
<tr>
<td>48. Regular classroom teachers should be required to receive pre-service or in-service training to be prepared to meet the needs of linguistic minorities.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>49. Having a non or limited English proficient student in the classroom helps the other students learn better.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50. Most non- and limited-English proficient children are not motivated to learn English.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51. At school, the learning of the English language by non- or limited-English-proficient children should take precedence over learning subject matter.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52. English should be the official language of the United States.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>53. Non- and limited-English proficient students often use unjustified claims of discrimination as an excuse for not doing well in school.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>54. The United States should not have one official language.</td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Please answer the following questions. For example, if your answer is "5" please bubble in "05" or if your answer is "50" bubble in "50".

<table>
<thead>
<tr>
<th>Question</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>55. Please specify your age in years.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>56. As an undergraduate student, how many courses were you required to take in which more than 60% of the course content focused on English language learners or English as a Second Language instruction?</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>57. As a graduate student, how many courses have you taken in which more than 50% of the course content focused on English language learners or English as a Second Language instruction?</td>
<td></td>
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</tr>
<tr>
<td>58. How many professional development activities in which you have participated were primarily devoted to the teaching of English language learners?</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>59. How many years have you been teaching?</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix K

IRB Approval

Lucy Rader-Brown,

Your IRB submission titled, "To What Extent Do Professional Training, School Demographics, Teacher Bilingualism or Multilingualism, and Teacher Attitude Predict the Instructional Practices that Elementary School Teachers Purport to Use with English Language Learners?", has been reviewed in the Office of Research Compliance and determined to qualify for Exemption, Category 2. Attached is the approval form with stipulations for the protocol. That means that this study is approved with the stipulation that you submit an amendment later, after the pilot phase, for any changes you need to make to the study. Please retain a copy of this email and the attached approval form with your records, and do not initiate ANY changes without prior approval. Any changes to this approved protocol whatsoever, from this point forward, must be submitted as an amendment and approved by the IRB prior to implementation. This includes even minor changes, such as adding a new investigator, changing the study site, or increasing enrollment. Additionally you are required to immediately report any adverse events, problems, or unanticipated occurrences to the IRB. Our website has guidance on the reporting requirements for such events. The Amendment Form and the Adverse Event Reporting Form can be found on our website at www.research.ohiou.edu/compliance.

Please note: Signed consent forms must be retained by a member of the research team for the period of three years following the completion of the project. If you are a student researcher, your academic advisor should retain the consent form in a secure location for the required amount of time.

If you need this approval to activate a grant/sponsored program account, please contact our office with the unit term number (UT number) from ORSP.

Best wishes with your research!
Mrs. Robin Stack, CIP
Human Subjects Research Coordinator
Office of Research Compliance