ORAL ENGLISH DEVELOPMENT AND ITS IMPACT ON EMERGENT READING

ACHIEVEMENT: A COMPARATIVE STUDY OF TRANSITIONAL BILINGUAL

AND STRUCTURED ENGLISH IMMERSION MODELS

A Dissertation

by

FUHUI TONG

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2006

Major Subject: Educational Psychology

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ABSTRACT

Oral English Development and Its Impact on Emergent Reading Achievement: A

Comparative Study of Transitional Bilingual and Structured English Immersion Models.

(December 2006)

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This quantitative study derived from an on-going federal experimental research project targeting Spanish-speaking English language learners (ELLs) receiving services in four program models: control/experimental transitional bilingual education (TBE) and control/experimental structured English immersion (SEI). The purpose of my study was (a) to capture the growth trajectory and rate of oral English acquisition, (b) to investigate the role of oral English development in acquiring English reading skills, and (c) to compare program models in order to identify practices that promote ELLs' English oral and reading competency at the early elementary level. Structural equation modeling was utilized. Participants consisted of 534 Spanish-speaking ELLs who started at kindergarten and continued through first grade in their respective models.

Striking similarities were found among the four instructional models that English oral proficiency improved significantly ($p < .05$) in a linear fashion over two years. However, the magnitude differed in that the experimental TBE demonstrated a steeper

growth ($p < .025$) than that of the control group that started at the same level. Even though experimental SEI group started at a much lower level in oral English, they progressed at a rate significantly higher ($p < .05$) than that of the control group.

In relation to English reading comprehension, for experimental SEI groups, the initial level of English oral proficiency is of great concern in reading achievement ($p < .05$). For both TBE groups, effective intervention is desired because the growth of English oral proficiency strongly impacts reading achievement ($p < .05$), and, in addition, initial level strongly predicts reading comprehension.

The intervention was successfully implemented so that students advanced to a substantial amount in academic English oray. It is also evident that first language (L1) instruction did not impede the learning of a second language. On the contrary, for those students receiving a larger proportion of L1 instruction, alterations in program models are needed to nurture English oracy at a faster rate of growth, which in turn facilitates English literacy acquisition. Findings also indicate that without effective English intervention, students placed in control TBE classrooms remain below all the students in oral English proficiency.

DEDICATION

To my beloved Grandma

ACKNOWLEDGMENTS

First, I would like to thank my chair, Dr. Lara-Alecio, for his ever-lasting support and encouragement during my degree pursuit process. He is more than an academic advisor. In fact, he has led me to a whole new world full of challenges and opportunities. It is in this world that I finally find myself joyful and peaceful. I would also like to thank Dr. Irby, my committee member, who has guided me in generating ideas and scholarly writing. Her professional insights and keen perception have inspired my career advancement. I will never forget the weekend that they went through my entire study page by page. I am blessed by these two great professors.

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Third, thanks to my colleagues in the Bilingual Education Program, Texas A&M University: Sandra, Polly, Ana, Cindy, Janie, and Rosy, who make me feel at home while it is thousands of miles away.

Last, I am grateful to my dear parents who are always on my side in times of difficulty and who are always ready to give as much as they can. Appreciation also goes to Luohan, a wonderful person with endless enthusiasm and caring. Al, is another special person I am thankful to, with whom I see my dreams blossom.

Life is full of opportunities as well as challenges. There are always moments when I stand at an intersection not knowing which road to take. It is with these people that I am brave enough to take the one less traveled, and it is with these people that I am

able to have accomplished at this stage to see the beautiful scenes. You are assets in my

life. Thank you all!

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CHAPTER I

INTRODUCTION

The influx of Spanish-speaking immigrants during the past several decades, and their generation thereafter, has posed a challenge to the U.S public school system more pressing than ever in its history. Throughout the last decade of the 20th Century the immigrant population grew by 11.3 million, with Spanish speakers from Mexico and Latin America accounting for the largest percentage of that number, approximately 30% (Camarota & McArdle, 2003). At the school level, in Texas alone, around 631,534 students were served in English language learner (ELL) programs in 2004-2005, accounting for almost 14% (14.4%) of the school population (Texas Education Agency, 2005a) with 94% Spanish speakers and 87% of those economically disadvantaged (Texas Education Agency, 2005b).

The enrollment of elementary and secondary schools in Texas also experienced an increase of 45.3% from 1980 to 2000, and it is projected that by the year 2040, 66.3% of those enrolled in elementary and secondary schools will be Hispanic (Murdock et al., 2002). Moreover, the percentages change of enrollment in bilingual education and English as a second language (ESL) and of ELLs are expected to be 166.8% and 188.1% respectively. Evidently, Hispanic students constitute the largest group of ELLs.

This dissertation follows the style of *Journal of Educational Psychology*.

Lack of English proficiency is an obstacle for ELLs not only in terms of academic survival, but also social relations and inclusion (Brittain, 2002; Cummins, 1989). With the rapid growth of advanced technology and an increasingly global economy, a much higher level of English language proficiency and literacy are critical for those students to improve their social and economic conditions (Lara-Alecio, Irby, & Mathes, 2003).

The challenge that schools face, in the new millennium, is facilitating a native-like English proficiency in Spanish-speaking ELLs in order for them to be able to participate competitively in academic and social events. The No Child Left Behind (NCLB) Act (2002) has required that students receive quality education regardless of their ethnic, linguistic, and cultural backgrounds, as well as their social economic status (SES) (Ovando, Combs, & Collier, 2006; Saracho & Spodek, 2004). NCLB's mandatory accountability based in rigorous research-based programs has posed another challenge for the school districts to establish scientific criteria that can be used to evaluate all students' (including ELLs) adequate yearly progress (AYP) through empirically derived evidence. Practitioners have been proactively seeking research-based programs that best support ELLs in their pursuit of academic success. For younger learners, emphases in such programs have been placed on their mastery of first language (L1) and second language (L2) proficiency and literacy skills.

Definition of Terms

L1

L1 refers to native language. In my study, L1 is Spanish.

L2

L2 refers to second language. In my study, L2 is English.

Language-minority Students

Language-minority students are those who come to the "schooling process without the language skills through which that process is communicated" (García, 1999, p. 38).

English Language Learners

English language learners are those who are beginning to learn English or who have not demonstrated proficiency in English (Padrón & Waxman, 1999).

Typical Transitional Bilingual Education (TBE-T) Model

It is a model established by school district from K-4 that "students' first language and English are used in some combination for instruction, and the first language serves as a temporary bridge to instruction in English" (Lara-Alecio, Irby, & Meyer, 2001, p. 82). In my study "students' first language" refers to Spanish. It is used to promote concept development while English instruction increases as the students' grade levels progress, for the purpose of full mastery of English language and literacy skills.

Typical Structured English Immersion (SEI-T) Model

It is a model established by school district from k-4 that "instruction should be provided in the child's home language, but the second language, English, is not used at all until students have acquired a mastery of the first language commensurate with their

age and extent of formal schooling"(Lara-Alecio, Irby, & Meyer, 2001, p. 84). It is implemented in a self-contained classroom with "highly structured materials that carry students through a step-by-step learning process" (p. 84).

Enhanced Transitional Bilingual Education (TBE-E) Model

It is an alternative model implemented by the present project in the school district from K-3 that encompasses instruction in ELLs' native language (Spanish for the purpose of this study) for concept development while English instruction increases as students' grade levels progress, for the purpose of full mastery of English language and literacy skills among Spanish-speaking ELLs. This model requires additional time spent in ESL strategies, innovated curriculum, classroom observation, professional development, and parental training (Lara-Alecio, Irby, & Mathes, 2003).

Enhanced Structured English Immersion (SEI-E) Model

It is an alternative model implemented by the presented project in school district from K-3 that uses English instruction with little Spanish clarification for the purpose of full mastery of English language and literacy skills among Spanish-speaking ELLs. This model requires additional time spent in ESL strategies, innovated curriculum, classroom observation, professional development, and parental training (Lara-Alecio, Irby, & Mathes, 2003).

Structural Equation Modeling (SEM)

It is a modeling framework within which the analysis of longitudinal data has been conducted. It is an influential statistical methodology for developmental and behaviors researchers (Duncan & Duncan, 2004).

Latent Growth Modeling (LGM)

It is a procedure of structural equation modeling that provides a means of modeling growth trajectories including initial level and rate of change among individuals. It is also applicable when multiple groups are involved (Duncan & Duncan, 2004).

Statement of the Problem

English oral language proficiency has been considered a critical part of a larger repertoire of language skills that are necessary for ELLs' academic attainment (Saunders & O'Brien, 2006). Currently in Texas, oral language levels is used either solely or in combination with other assessments to determine program placement for any student whose home language is a language other than English (Texas Education Agency, 2006). The importance of English oral proficiency, therefore, is self-evident.

Researchers have addressed native English speakers' oral language acquisition and proficiency in certain domains such as pragmatics and vocabulary (Stahl & Fairbanks, 1986). Krashen (1982) via this natural order hypothesis has suggested similar stages in second language acquisition. An exploration of the existing literature regarding L2 (English language for ELLs) oral development has yielded two specific domains of interest: question formation and vocabulary (Saunders & O'Brien, 2006). Researchers

have found that the higher the level of L2 oral proficiency, the more sophisticated the question form in that second language learners tend to use (Lindholm, 1987; Rodriguez-Brown, 1987). They also found that regardless of what the second language is, at least alphabetic languages, learners demonstrate the same developmental pattern of question forms. With vocabulary, the higher L2 vocabulary, the higher oral proficiency is. In fact, Snow, Cancino, Gonzalez and Scriberg (1987) determined that L2 learners define words more formally as they become more proficient in the second language.

Younger second language learners with little systemic schooling in L1 are more likely to develop oral competency in the second language prior to the mastery of reading and writing (Fradd & McGee, 1994). This finding may lead one to hypothesize that L2 reading performance is dependent on at least a minimum of L2 oral proficiency. There is some evidence that vocabulary knowledge, and listening comprehension skills in a second language are prominent predictors of reading comprehension in the second language (August, 2003).

To accommodate ELLs' linguistic and cultural needs to acquire English language and literacy, schools have been endeavoring to deliver appropriate and effective instruction. Bilingual education (which utilizes ELLs' first language for instruction with a combination of English) and Structured English Immersion (SEI, which utilizes English as the sole language of instruction) are the two most popular program types that provide ELLs comprehensive input and/or exposure to the English language. Passionate debates are still going on regarding the effect of primary language instruction versus English-only instruction (Crawford, 2000). In addition, due to the variation of classroom

characteristics in each program type, observational evidence of teachers' instructional pattern, which carries an influential impact on students' outcomes, especially for ELLs (Foorman, Goldenberg, Carlson, Saunders, & Pollard-Durodola, 2004), is crucial.

However, there is only a limited body of research studies addressing ELLs' L2 oral language acquisition. Instead, a large number of studies have demonstrated considerable interest in within-language transfer, particularly L1 vocabulary acquisition on L1 reading; and cross-alphabetic language transfer such as metalinguistic awareness in L1 linking to L2 reading and L1 literacy to L2 literacy (Cisero & Royer, 1995; Lindsey, Manis, & Bailey, 2003; Manis, Lindsey, & Bailey, 2004; Proctor, August, Carlo, & Snow, 2006). Saunders and O'Brien's (2006) synthesis over the past two decades has identified only six studies (Hakuta, Butler, & Witt, 2000; Howard, Christian, & Genesee, 2003; Lindholm-Leary, 2001; Medina & Escamilla, 1992; Thomas & Collier, 2002; Weslander & Stephany, 1983) reporting L2 oral progression. As a result, there has been a lack of empirically-derived evidence on the pattern and rate of native Spanish-speaking ELLs' oral English development.

Moreover, investigating the relationship between L2 oral language and L2 literacy is much more complex than that between L1 oral language and L1 literacy because of the confounding factors of L1 influences on L2 acquisition (August, 2003). A few studies (August, Calderon, & Carlo, 2001; Reese, Garnier, Gallimore, & Goldenberg, 2000) have been conducted to examine such relationships; however, they have yielded inconsistent results. Garcia (2000) indicated that controversy as well as little data exists regarding the relationship of L2 oral language and L2 literacy at the pre-school level.

Even less research is targeted at the interplay between the developmental continuity and reading attainment in L2.

A close investigation of the studies on the relationship between L2 oral language and reading shows that few researches have addressed the classroom instruction at pre- and early-school levels, during which period a program model is very likely to influence ELLs' language acquisition and long-term attainment (Garcia, 2000). Saunders and O'Brien (2006) noted for second language learners, "there is virtually no U.S. research on how classroom instruction might best promote more academic aspects of oral language development…" (p. 19). Although researchers, to a large extent, favor one program model over another (see Lindholm-Leary, 2001; Thomas & Collier, 2002), others also bring a cautionary note in the implementation (Valdes, 1998). What is critical to take into consideration is the specific context in the local area where a certain type of program may be most appropriate and effective, and the best practices to educate the younger generation (Rennie, 1993).

Therefore, the present study aims to investigate the rate and pattern of L2 oral language progression and the predictive power that such progression exerts on emergent reading achievement with developmental data, within the classroom context where two program models being implemented to serve a young Spanish-speaking population.

Purpose of the Study

My quantitative study derives from an on-going five-year federal experimental research project entitled English and Literacy Acquisition (ELLA) (R305P030032) targeting at approximately 800 Spanish-speaking ELLs receiving services in four

program models: (a) typical/control transitional bilingual education (TBE), which represents the typical practice in the school district; (b) enhanced/experimental TBE, which represents the intervention of the project; (c) typical/control structure English immersion (SEI), and (d) enhanced/experimental SEI programs. The purpose of the present study was (a) to capture the growth trajectory and rate of oral English acquisition among these ELLs who started in kindergarten and continued through 1st grade. These students were tested in the beginning and end of kindergarten, and at the end of first grade, respectively; therefore, three time points of data were analyzed; (b) to investigate the role of oral English development in acquiring English reading skills, and (c) to compare instructional models (experimental and control TBE and SEI) to identify the effectiveness of various program types that promote young ELLs' L2 language and literacy acquisition at early elementary level.

Research Questions

Four researches questions have guided the present study:

1. What is the respective growth trajectory and rate of oral English development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

2. Is there any significant difference in the trajectory and rate of oral English development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

3. Can students' initial level and rate of development in oral English

proficiency predict English reading outcome among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

    4. Is there any significant difference in terms of the prediction of English oral proficiency upon English reading achievement among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

<div align="center">Significance of the Study</div>

My study is of significance for four reasons. First, as outlined in the statement of the problem, oral language proficiency, especially academic oral language proficiency, is of critical importance for English language learners; however, such a field has been neglected. The empirically derived results from my study should contribute to the limited body of existing literature on L2 oral language development. As previously indicated, only six studies have reported L2 oray cross grade levels, the description of the developmental continuum on ELLs' L2 oral language progression should also provide a base for considering an ELL's annual growth in L2. This may assist school districts in establishing adequate yearly progress (AYP) criteria enforced by NCLB.

Second, one of the objectives of my study was to examine the predictive power of L2 oral proficiency on L2 reading achievement. Besides the investigation of the initial oracy level, the results from my study should provide additional data as to whether ELLs' emergent literacy skills can be facilitated if more focus is placed on their oral language development at early elementary grade level.

Third, quality pre-schooling and intensive early intervention are required to ensure success for all students (Slavin, Madden, Karweit, Dolan, & Wasik, 1994), particularly for English language learners who are likely to encounter more obstacles during the course of acquiring a second language and content area knowledge. My study compared Spanish-speaking ELLs' L2 outcomes across four instructional practices. Accordingly, results may be able to inform a school district in which similar intervention practices are being implemented as to whether or not a certain program type can better serve this population at early elementary grades. It may also be practical for future implementation and replication of the specific interventions.

Last, the present quantitative study established latent growth models (LGM) and applied multiple group comparison techniques which are appropriate in studies with multi-sample panel data (Duncan & Duncan, 2004). As Chapter II will reveal, most of the studies have used cross-sectional (Miller et al., 2006) or cohort data (Reese, Garnier, Gallimore, & Goldenberg, 2000), with pre- and post-test measures, therefore, a developmental study was much needed. To date, no study has attempted to document the growth trajectory of ELLs' oral English development. Due to the reality of high attrition rate of students, it may be very difficult to track students' growth over one year. However, the present study is able to capture and analyze a large sample size of the same participants longitudinally over a two-year period with multiple sets of data collected consecutively, this study embodies a methodologically sound research design, and therefore should provide reliable and valid results for decision making purposes.

Delimitations

Although four or five panel data with additional measures are more desirable so that a much more detailed and accurate trajectory of participants' language development can be described, my study involved a limited number of time points (three), and each time point consists of two measures of English oracy. Such delimitation is associated with the fact that scores are available for the first two years of assessment at early grades. According to Beollen and Curran (2006), three time points are acceptable to identify a non-linear developmental trajectory. Furthermore, the first two years of intervention have been emphasized on oral language development, while literacy instruction took place at the second half of 1st grade. Accordingly, rather than comparing the reading achievement among program models, the present study intends to investigate the relationship between L2 oral and reading. In addition, the study is quasi-experimental, due to the fact that in the state where the project is being implemented, random selection on the basis of individual students is prohibited by law (Texas Education Code, 1995). The last note is that the present study compared across the program models as a whole instead of individually for the sole purpose of identifying program effectiveness.

Organization of the Study

Chapter I of my study included definition of terms, a statement of the problem, the purpose of the study, research questions, the significance of the study, and delimitations.

Chapter II of my study will include an introduction, L2 oral language development, the relationship between L2 oral language and L2 reading comprehension, effectiveness of program type and classroom instruction, and a summary.

Chapter III of my study will include an introduction, sample, setting, research design, instrumentation, intervention procedure, data collection, data analysis, and a summary.

Chapter IV of my study will report the data analysis and summary.

Chapter V of my study will present a discussion of findings, limitations, recommendations, implications and conclusions.

CHAPTER II

REVIEW OF THE LITERATURE

In this chapter, an extensive review of literature is presented in the area of oral English development, its connection to English reading comprehension, and various program models that promote English language and literacy development. It should be noted that since the present study involves only Spanish-speaking ELLs, the literature reviewed here are closely related to the issue pertinent to this particular population.

L2 Oral Language Development

English oral language proficiency has been considered to be a critical part of a larger repertoire of language skills among ELLs deemed necessary for their school attainment (Peregoy & Boyle, 2001; Saunders & O'Brien, 2006). More importantly, it is a rigorous criterion by the school district to determine if a student with a home language other than English needs special services (Fradd, 1987; Pang & Kamil, 2004). The acquisition of oral language skills in any language usually precedes reading and writing. This is especially advocated for young ELLs by Lapp and Flood (1986), "students should learn to listen, understand, and speak English in a natural way before they learn to read and write" (p. 320). However, there are complex components of oral language, or speech, including: phonology, grammar, syntax, vocabulary, intonation, semantics, pragmatics, and rhyme, etc. (Gottlieb, 2006; Smith & Ellis, 2003). Therefore, oral communicative skills are the prerequisite for subsequent literacy development especially

during the early years. As Snow (2000) put it, "For young children, it's through the talk that learning goes on" (p. 46).

Theoretical Foundation of L2 Oral Acquisition

Cummins (1979, 1980a, 1980b, 1984) proposed two premises of language proficiency for second language acquisition, commonly known as basic interpersonal communicative skills (BICS) which normally takes a second language learner 2-4 years to acquire; and cognitive academic language proficiency (CALP), which normally takes 5-7 years to acquire. This postulation has been questioned by some researchers for the isolation of social and cognitive factors (Genesee, 1984) and for the overgeneralization of the complex concept of language proficiency (Edelsky, 1996; Wiley, 1996). The core of the controversy, therefore, is whether oral proficiency of a second language should be simply defined as conversational skills in social language. Cummins (1981a) further refined his theory by offering a four quadrants continuum. Within this framework, a sequential and interactive perspective of language proficiency is then envisioned from context-laden and cognitively undemanding to context-reduced and cognitively demanding level.

Cummins (2000) also argued that the "academic language proficiency is the ability to make complex meanings explicit in either oral or written modalities by means of *language itself* rather than by means of contextual or paralinguistic cues" (p. 69). Similarly, Roberts and Neal (2004) defined English oral proficiency as the ability to understand and communicate effectively in an English academic setting.

Krashen's (1981, 1985) natural order hypothesis suggests that oral language acquisition takes place before second language learners begin to read and write. Regardless of ELLs' ages, normally they experience the four stages of the predicable order of grammatical structures: pre-production, during which they understand meaning of words and phrases; early-production, during which they utter simple words and phrases and sometimes broken sentences in an attempt to communicate; speech emergence, wherein they produce longer words and phrases; intermediate fluency, wherein they use complex phrases and sentences and demonstrate a good comprehension of L2.

Due to the fact that English oral language proficiency tests are so widely adopted by states to determine the eligibility of program placement and exit for ELLs, Schrank et al. (1996) advocated that it should be academic-oriented in nature. Consequently, if the attempt is to situate oral proficiency within classroom-bounded and academic/literacy-related context, where a higher level of thinking is demanded, a strong correlation with subsequent academic outcome is expected to emerge for younger second language learners. As Collier (1987) suggested, "Language proficiency required for school tasks can incorporate the whole range of skills in [Cummins's] four quadrants, but it is especially in school that students need to develop context-reduced and cognitively demanding aspects of language in order to function successfully in the classroom"(pp. 618-619).

Discrete Aspects of Oral Proficiency

According to August (2003), vocabulary, grammar, and listening comprehension are three significant factors of oral language proficiency, while coding/decoding, word recognition, and reading comprehension are of those English reading skills.

Children's vocabulary knowledge plays a decisive role upon their communication and reading comprehension (Becker, 1977). Poor readers usually fail to identify either the surface or implied meaning of the words during reading due to insufficient vocabulary knowledge. Younger learners first acquire oral vocabulary and most of that vocabulary is receptive so that they can familiarize oral vocabulary knowledge with what is read to them (letter-sound correspondence) (Kamil, 2004; Snow, Burns, & Griffin, 1998). They will not understand what is read to them if they do not know the meaning of the word; neither will they be able to recognize the print when they start transiting from oral to written forms. Therefore the amount of vocabulary can be a determinant of how well they comprehend either verbal or written texts. As Kamil (2004) asserted "vocabulary seems to occupy an important middle ground in learning to read" (p. 215). In his summary of the work of the National Reading Panel (NRP) (National Institute of Child Health and Human Development [NICHD], 2002) on reading comprehension instruction, Kamil (2004) emphasized that direct vocabulary instruction underscores better performance in semantic tasks and comprehension gains.

Researchers have concurred that listening comprehension skills are strong indicators of oral skills among monolinguals (Becker, 1977; Freebody & Anderson, 1983; Hedrick & Cunningham, 1995; Snow, 1997; Snow, Burns, & Griffin, 1998).

Current approaches of communicative language teaching to speakers of a language other than English emphasize the skills of broader communication in speaking and listening (Gottlieb, 2006; Madsen, 1983). Hence, listening comprehension in L2 also is an important representation of L2 oral proficiency. In an early-elementary classroom setting, for example kindergarten, there are very few written texts involved. Language learners are usually presented a story read by teachers to grasp the meaning and then participate in oral discussion. Consequently, aural proficiency is necessary for successful communication in social and academic settings (Gottlieb, 2006).

Measures of L2 Oral Proficiency

Previously conducted research described bilingual students' oral language development in L1 (Spanish) and L2 (English) by means of standardized measures, teacher rating and ethnographic observation in the classroom, on the playground, and at home (Hoover, 1981; Mace-Matluck, 1985). Data from these two-year and five-year course studies indicated that oral language development was individualistic in nature, and valid assessment required multiple measures of oral language. Cummins (1981a) warned that an adequate mastery of L2 proficiency means not only the BICS, but also CALP, which underlies L2 literacy skills. Therefore, those language proficiency measurements which focus on natural communication such as Basic Inventory of Natural Language (BINL) or Bilingual Syntax Measure (BSM) should not be used to determine a student's bilingual program exit status.

According to a synthesis of a limited body of longitudinal and cross-sectional researches on L2 oral language development by Saunders and O'Brien (2006), most of

the studies reported that ELLs reached native-like proficiency in L2 oral language (including vocabulary and listening comprehension) by the end of 5th grade (Thomas & Collier, 2002); while the findings from Hakuta, Bulter, and Witt (2000, sample B) contradictorily showed that the gap between native-English speakers and ELLs continued to widen from 1st to 5th grade. Saunders and O'Brien (2006) suggested that such discrepancy might have resulted from the various measures of oral proficiency implemented by these studies. They further question the validity of criterion-referenced test and teachers' ratings that are popular among school districts. Schrank et al. (1996) investigated the concurrent validity of three oral language proficiency tests (IPT, Pre-LAS ad WLPB-R) with a school district teacher rating called Language Rating Scale (LRS) among ELLs. The sample was composed of 77 Spanish bilingual kindergarten students, and 119 bilingual 2nd graders. The LRS was reported to be more academic-oriented which assessed students' cognitive and academic language proficiency rather than social and communicative language proficiency in English. They found that for the kindergarten sample, WLPB-R was more correlated to LRS for academic measures (CALP) (.80), compared to a 74% percent correlation between IPT and LRS. Consistently, for the grade 2 sample, WLPB-R turned out to be most strongly correlated with LRS (.80), compared to the correlation of LAS-O (.76) and IPT (.68). Both of the two subtests were considered to be more academic-oriented as opposed to other measures assessing ELLs' L2 oral language proficiency and, therefore, appeared to offer a more holistic picture of ELLs' academic oral language proficiency, as it naturally

developed with a norm of native English speakers as a reference for comparison (Hakuta, Butler, & Witt, 2000) .

Rates and Patterns of L2 Oral Language Development

Saunders and O'Brien (2006) concluded in their synthesis, "no U.S. study published within the last twenty years has explicitly addressed the rates of oral English language proficiency attainment" (p. 23). However, they were able to identify six studies that reported oral language outcome after years of instruction and schooling. They further converted the results to a five-point scale for the purpose of comparison across studies. According to them, these longitudinal and cross-sectional studies on either Spanish ELLs only or both Spanish ELLs and native English younger learners have indicated (1) that native-like competency in English and/or Spanish does not appear until 3rd grade or even until 5th grade (Collier, 1987; Lindholm-Leary, 2001); (2) that ELLs with lower levels of L2 oral language proficiency tend to develop faster in early grades (K-2); and (3) that there is an approximately equal gain each year in terms of English oral proficiency among Spanish-speaking ELLs, regardless of program type, namely two-way immersion, ESL, or English-only (Hakuta, Butler, & Witt, 2000 sample A; Lindholm-Leary, 2001; Medina & Escamilla, 1992; Thomas & Collier, 2002). For the two-way immersion program, per year gains were strikingly consistent across the studies among Spanish-speaking students tested in English. The same holds for intensive ESL programs and even English-only programs. Saunders and O'Brien then hypothesized that on average, L2 oral language development proceeds at a constant rate in all programs,

and school contexts exert a "constant or homogenizing effect on oral language development" (p. 26).

The last point is confirmed in two studies. Miller et al.'s (2006) examined within- and cross-language transfer among ELLs from kindergarten to third grade by measuring oral and literacy skills, and identified a positive linear trend of L2 oral language development. Hakuta, Butler and Witt (2000) found that for ELLs with high poverty level, oral proficiency measured by WLPB-R increased at a constant rate at least from kindergarten to grade four.

Relationship Between L2 Oral Language Skills and L2 Reading Comprehension

From a theoretical view, there exists a general language proficiency which underlies oral and written language that can be applied to second language acquisition (Peregoy & Boyle, 1991). Even though the four domains of language proficiency, namely, speaking, reading, listening and writing can possibly be measured separately. Some experts argue that the core of linguistic knowledge espouses common features from the lexical, syntactic, and semantic systems of the language in such a way that these four processes occur naturally integrated. In a communication-dominated classroom, students switch between oral and written language (Peregoy & Boyle, 2001). Furthermore, for younger second language learners with little systemic schooling in L1, oral competency is likely to be reached prior to the mastery of reading and writing (Fradd & McGee, 1994), which also demonstrates that L2 reading performance is dependent on at least a minimum of L2 oral proficiency. As many researchers have suggested, the level of L2 oral communicative competence functions as a precursory to

subsequent literacy development (Smith & Ellis, 2003; Snow, 1983), and a higher level of academic oral language proficiency appears to be more associated with reading achievement in English (Genesee, 1999; Riches & Genesee, 2006).

The fact is, however, that investigating the relationship between L2 oral language and L2 literacy is much more complex than is investigating the relationship between L1 oral language and L1 literacy. This section reviews two bodies of empirical studies seeking evidence of the impact of L2 oral language proficiency upon L2 reading comprehension among Spanish-speaking ELLs.

Empirical Studies Indicating Little Impact

According to a longitudinal study by August, Calderon, and Carlo (2001), Spanish-speaking students' level of English oral proficiency did not contribute to any effect of Spanish literacy on English literacy. In other words, the literacy transfer from Spanish to English was independent from English oral proficiency. Manis, Lindsey, and Bailey (2004) also reported that the expressive language skills as measured by vocabulary and story repetition tasks did not account for the variance in Spanish ELLs' reading outcome in English by the end of 2nd grade, however, metaliguistic skills, such as phonological awareness and rapid automatic naming did.

Another study identifying powerful variables other than L2 oral proficiency was performed by Durgunoglu, Nagy, and Hancin-Bhatt (1993). The participants were 27 first grade Spanish-speaking beginning non-fluent readers from transitional bilingual educational (TBE) programs in two school districts, with the major objective to transition students at the end of their 2nd or 3rd grade years. In 1st grade, students were

taught in Spanish, and English instruction emphasized on oral language development. The authors used multiple regression and interpreted that students' performance on L2 word recognition tasks was strongly influenced by the level of their L1 decoding skills (as measured by phonological awareness) and L1 word recognition without association with L2 oral proficiency as measured by pre-LAS. But the authors also noted that since there are multiple components to assess oral and reading skills, different or even contradictory results can be expected regarding this relationship.

Nor did August and Hakuta (1997) find sufficient evidence that ELLs' L2 oral language is a prominent predictor of L2 reading. From their review, L1 oral proficiency is a more reliable prerequisite for L2 literacy acquisition. However, the mixed findings also reflect a variation of oral language measures, as well as the component of reading skills. In addition, they claimed that for elder learners who had background knowledge in L1 literacy, less dependence was needed on L2 oral language, while those ELLs who started their initial literacy instruction were more dependent on the level of L2 oral production.

Empirical Studies Indicating Strong Impact

Researchers have argued that vocabulary knowledge and listening skills are of critical importance on reading comprehension (Biemiller, 2003; Snow, Burns, & Griffin, 1998) among monolingual learners. Such findings are also applicable to L2 oral language and reading, especially for Spanish-speaking ELLs.

Roberts and Neal (2004) followed a 16-week small group instruction intervention among Spanish- and Hmong-speaking ELL preschool children. They found that pre-test

English oral proficiency, measured by IPT test on vocabulary, syntax and pragmatics, was a significant predictor on post-test scores measuring pre-literacy skills including vocabulary, print concepts, event sequencing, and letter recognition. However little correlation existed between oral proficiency and decoding skills in L2.

A longitudinal study (Reese, Garnier, Gallimore, & Goldenberg, 2000) investigated the relationship among home-literacy environment, family SES, oral English proficiency at kindergarten level and English reading outcome at 7th grade among Spanish/English bilingual students. They used structural equation modeling to test their hypothesis that home environment directly influences Spanish literacy and English oral proficiency, which then directly influences later achievement in English. The path analysis reported that controlling for other factors, oral English proficiency as measured by BSM or IPT accounted for the largest amount of variance (with a .43 path coefficient) in reading achievement at grade 7.

Other studies with concurrent data among young Spanish-speaking ELLs revealed corresponding results. For instance, with a much larger number of participants (1,500 Spanish-English bilingual children) from kindergarten to third grade, Miller et al. (2006) examined the correlation of oral and reading proficiency within- and cross-Spanish and English. Not surprisingly, the measures of oral language proficiency in L2 accounted for 22% of the variance in L2 reading achievement measured by Passage Comprehension in WLPB-R. These findings supported their prediction that oral language is more closely associated with reading comprehension because both focus on the processing of meaning.

Working with Spanish-speaking ELLs, Carlisel, Beeman, Davis and Spharim (1999) found that vocabulary knowledge in L2, as well as phonological awareness independently and significantly contribute to L2 reading achievement among 1st, 2nd, and 3rd graders. Royer and Carlo (1991) concluded that 5th grade Spanish-speaking ELLs who had higher L2 listening comprehension skills become more proficient L2 readers in English in their 6th grade year. Earlier studies that underpined strong prediction of vocabulary knowledge and listening comprehension on reading achievement for Spanish-speaking ELLs can be found in Peregoy and Boyle (1991), Hoover and Gough (1990) and Saville-Trokie (1984).

A more recent study by Proctor, Carlo, August and Snow (2005) addressed the lack of a specific L2-comprehension model among Spanish-speaking ELLs and hence designed a "research-based structural equation model of L2 reading" (p. 246) involving 4th graders. Their model highlighted the critical role of L2 oral language skills as measured by vocabulary knowledge and listening comprehension upon English reading comprehension, the prediction of which was much stronger than that of decoding skills.

Vaughn et al. (2006) implemented a reading intervention among at-risk Spanish-speaking beginning readers. Vocabulary and oral language development in English were included as supplementary components 10 minutes per day. Results showed that students in intervention group outperformed control group in pre-literacy skills such as letter-sound identification, decoding and word reading efficiency.

Effectiveness of Program Type and Classroom Instruction

Researchers and practitioners have been endeavoring to explore effective programs that meet the needs of ELLs' to acquire competent English language and literacy skills. Probably the central issue of educating language minority students is the language of instruction in the classroom. Passionate debates are still going on regarding the effectiveness of ELLs' primary language instruction versus English instruction (Crawford, 2000). Generally speaking, there are three types of programs widely implemented at the elementary levels in the United States: the maintenance model which aims to promote minority students' first languages (L1) while they acquire academic English proficiency; the transitional model which aims to develop quickly minority students' English language proficiency so as to rapidly mainstream these students into English-only classrooms; and the English as a second language (ESL) model which instructs language minority students in English through content (Fradd, 1987). Proponents for the English-only model assert that instruction in ELLs' primary language does not accelerate their learning process in terms of language, reading and math (Rossell & Baker, 1996); whereas, proponents for primary instruction argue that L1 language and literacy provides a link to content learning and can be transferred to L2 for long-term academic success (Cummins, 2000; Thomas & Collier, 2003).

States Initiative: Texas

Considering the fact that the present study was conducted in the state of Texas, I felt it imperative to provide a snapshot historical review of the state legislation meeting the needs of a rapidly growing population of predominantly Spanish-speaking ELLs.

There is a prevalent belief that political and social forces are more influential than any of the other factors that have shaped the nation's attitude toward the education of language minorities in the US, as Crawford (2000) pointed out, "it is politics, not pedagogy, that determines how children are taught" (p. 3). The Civil Rights Movement in 1964 aroused a major change in people's perception of ethnic minorities, which contributed to the rebirth of bilingual education. These efforts, together with the wave of ethnic nationalism yielded to the passage of Bilingual Education Act of 1968, which provides bilingual education for economically disadvantaged language minorities students. During this period, programs can be classified as structured immersion programs, in which students are given specialized ESL instruction; partial immersion programs providing ESL; transitional bilingual and two-way immersion (Ovando, 2003).

The federal initiatives accelerated the slow pace in Texas. History witnessed the most exciting and productive period in bilingual education between 1960s and 1980s. In compliance with the Federal law, in 1969 the Texas Legislature passed its first bilingual education law in history. Four years after this permissive version of bilingual education, the Bilingual Education and Training Act, a mandatory version received the approval of both the Houses and Senate (Vega, 1981). It required that any school district that has 20 or more limited English proficient (LEP) students at the same grade level must provide a bilingual program. In 1996, the Subchapter BB of Texas Administrative Code, Chapter 89 was issued under the Texas Education Code Chapter 29. It is stated that a student with a home language other than English who is identified as LEP should have the full opportunity to participate either in a bilingual program or in English as a Second

Language (ESL) (Lara-Alecio, Galloway, Irby, Rodriguez, & Gomez, 2004). The

passage of the No Child Left Behind Act in 2002 advocates for the equal opportunity of

all children to be educated regardless of their diverse background (Garcia, 2005). Under

the influence of NCLB, Texas ELLs are given an oral language proficiency test upon

enrollment and thereafter annually. All ELLs, grades 3-12 are also administered the

Reading Proficiency Test in English (RPTE) to provide information on current reading

levels and annual growth in English reading skills (Texas Education Agency, 2004).

Comparatively speaking, the history of ESL did not enjoy as much debate as

bilingual education. People from higher and lower social economic status received ESL

as they need (Lara-Alecio, Irby, & Meyer, 2001). The proactive legislation has led to the

prevalent attitudes of supporting language minority students in Texas. Among the

population of ELLs, 49% of them are placed in TBE programs and 38% in ESL

programs (Alanis, 2000).

In short, being one of six homes to the nation's two thirds of language minority

students, Texas has had a supportive history of embracing language minority students,

"preparing Texas citizens for economic competitiveness in the international arena and

capitalizing on the cultural and linguistic richness that exists in the state…" (Thomas &

Collier, 2002, p. 118).

Implementation

In Texas, there are four programs commonly offered for ELLs at elementary

levels: ESL, English immersion, TBE, and two-way immersion or dual-language(Lara-

Alecio, Galloway, Irby, Rodriguez, & Gomez, 2004). Due to the fact that in Texas, the

percentage change of enrollment in bilingual education and ESL programs and of ELLs

is expected to be 166.8% and 188.1%, respectively (Texas State Data Center 2002),

more concerns and attention should be drawn on how these programs can best serve our

ELL population. Since TBE and SEI are of primary concern in the present study,

definitions will be provided for these two program models.

Two Most Popular Models

Transitional Bilingual Education (TBE) model. One of the two language models of

concern in the present study is Transitional Bilingual Education (TBE) model, in which

all students are of the same linguistic background (Spanish in the study) other than

English. It is one of the various forms of bilingual education programs. The goal of TBE

is to instruct language minority students in their native language as a short-term bridge

to learn English and finally mainstream them into English-only classrooms. Students'

L1s are used at the early stage of instruction; however, as students approach higher grade,

the use of L1 declines (Lara-Alecio, Irby, & Meyer, 2001).

A review of program descriptions has not revealed a single definition for TBE. In

their eight-year longitudinal project, Ramirez, Yuen, Ramey and Pasta (1991) reviewed

the long-term achievement of three program models that serve ELLs nation-wide. They

categorized both early-exit and late-exit into TBE program types. According to their

operational definition, ELLs in early-exit transitional program were instructed in their

native language for initial readings and clarifications, however, the rest of the time was

spent in an English-only learning environment. Typically by the end of 2nd grade

students were expected to exit to an English-only classroom. In contrast, students in late-

exit TBE were instructed a minimum of 40% in their native language in language arts, reading, math, etc. and were not exited until 6th grade, regardless of their reclassification status.

Medina and Escamilla (1992) distinguished the TBE model from the MBE (maintenance bilingual education) model by showing that the former aimed to assimilate language minority students who were forced to exit to mainstream classrooms within a 2-3 year without sufficient mastery of either L1 or L2 while MBE aimed to maintain students' L1 while learning L2 and students would remain in the program from K through 6th grade without exiting. A similar TBE definition corresponded in the report by Genesee (1999) who also indicated that students starting their kindergarten year in TBE were usually placed in English-only classrooms at the beginning of 3rd grade. According to these two studies, TBE was synonymous to early-exit.

Thomas and Collier (2002) compared the program practice by four representative urban school districts all over the U.S and identified several types including two TBE models: 50-50 and 90-10. In 50-50 TBE model, instruction is spent half in English and half in minority language for 3-4 years before students are mainstreamed; while in 90-10 TBE, instruction is in minority language from K-2 with the gradual increase of English instruction until 5th grade when students are mainstreamed. Ovando, Combs and Collier (2006) defined TBE as an early-exit bilingual model, a subtractive and remedial program that exits ELLs to mainstream class with a maximum 2-3 years of L1 instruction in all subject areas. It is the most common model with L1 support in the United States.

Structured English Immersion (SEI) model. The other model of concern in this study is structured English immersion (SEI) model under a broader category of ESL. The definition of SEI is much simpler and consistent across studies. In this self-contained classroom, English is used for all subjects with very few L1 clarifications, and ELLs are expected to master grade-level academic English skills within 2 to 3 years (Ovando, Combs, & Collier, 2006; Ramirez, Yuen, Ramey, & Pasta, 1991). Unlike the TBE student composition, students in SEI do not necessarily share the same linguistic background. In the state of Texas, it is an alternative either due to parental denial of enrollment in a bilingual program or an insufficient number of students with the same native language (fewer than 20) (Lara-Alecio, Galloway, Irby, Rodriguez, & Gomez, 2004). The term *immersion* is derived from Canadian immersion in which majority (French-speaking) students are immersed with minority (English-speaking) students; however, English-only proponents have mistakenly used this name and ruled out L1 instruction. It has become the dominant special service provided to ELLs in those states that prohibit bilingual education (California, Arizona, Massachusetts) (Garcia, 2005).

No matter what the description is, both TBE and SEI aim to foster language minority students' English proficiency in order to succeed academically in English-only classroom.

TBE and SEI: Response to Academic and Linguistic Needs of ELLs

Debate on language of instruction largely results from the question of which program is more favorable for ELLs. Evaluations of SEI, early-exit and late-exit models revealed that after two years in their respective program, i. e. by the end of 1st grade,

Spanish-speaking ELLs perform equally well across three programs in English reading and math; while after another two years, ELLs in early-exit TBE perform slightly but not significantly better than those in SEI in terms of their rate of growth in English language and math. It is also found that students placed in late-exit TBE demonstrated a significantly faster growth rate than students in other two models in the area of English language and math and have caught up with the norms (Ramirez, Yuen, Ramey, & Pasta, 1991). The synthesis within a decade span addressing long-term effects of two-way immersion, SEI, early-exit and late-exit bilingual education confirmed the previous study. Two-way immersion (TWI) in which both language majority and minority groups learn together in the classroom, as well as late-exit model seem to be very promising, an though the early-exit model has also provided some positive evidence on academic achievement for ELLs, evidence is not yet not as powerful as from the other two (Collier, 1992). SEI is the least-effective model for long-term academic performance. The well-known large-scale study conducted by Thomas and Collier (2002) focusing on academic achievement has illustrated that 90-10 and 50-50 TWI and one-way dual language programs most effectively closed the gap for ELLs' to reach the 50th percentile in all areas. In general, previously bilingually-schooled children scored higher than monolingually-schooled peers in middle school and high school. Thomas and Collier then called for the policy makers to be aware of the importance of a minimum of 4 years in L1 instruction for an ELL to reach grade-level performance in L2.

Interestingly, as well as understandably, studies pertaining to short-term effects yielded different results. Comparing the English oral proficiency development among

ELLs placed in the Transitional Bilingual Education (TBE) model and in the

Maintenance Bilingual Education (MBE) model from kindergarten to 2nd grade, Medina

and Escamilla (1992) found that in addition to the significant gains by all three

subgroups (limited in L2, near fluent in L1 and fluent in L1) in both models have made,

subgroups in TBE outperformed MBE; whereas students in TBE suffered a great loss in

their L1 oral proficiency.

A more recent comparative investigation between TBE and SEI involved a

matched example of 25 Spanish-speaking participants who remained in the same

program since kindergarten to 3rd grade. The four-year intervention has produced no

difference in students' performances on the listening and speaking portions of an

English-language proficiency test, nor on the reading and math portions of an English

achievement test (Hofstetter, 2004).

In light of the relationship between English oral proficiency and English reading

comprehension on standardized tests, Garcia-Vazquez, Vazquez, Lopez and Ward (1997)

reported a significant correlation among a randomly selected 100 Hispanic students from

grades six through twelve. The researchers implied that their study indirectly

demonstrated the benefit of late-exit bilingual programs that can enhance their

participants' performances.

However, in the review from the earliest period until the most recent literature in

evaluating TBE against other program alternatives, Rossell and Baker (1996) asserted

that among 12 methodologically sound studies, not a single one has evidenced the

advantage of TBE over SEI when the outcome is reading, language and math in English

standardized tests. Conversely, 83% of the studies selected showed an inferiority of TBE compared with SEI in terms of English reading achievement.

Instructional Practices

Regarding the variation of classroom characteristics, it is crucial to gather observational evidence as teachers' instructional pattern carries an influential impact on students' outcomes, especially ELLs. Concerned with language instruction and instructional content, Foorman, Goldenberg, Carlson, Saunders and Pollard-Durodola (2004) described comprehensive and reliable classroom observations in three representational models during reading/language arts and English language development (ELD) instruction: late-exit bilingual; two-way dual language; and English immersion (SEI). Their study totaled 105 classrooms from the Texas and California borders and urban sites with 848 students in kindergarten through second grade. It was observed that teachers in California SEI classrooms instructed exclusively in English, while teachers in Texas SEI classrooms instructed primarily in English with a small portion of Spanish. Irrespective of program model, teachers from California sites allocated more time than their Texas peers in oral language instruction, including oral language/discussion, English language strategies, Spanish language strategies, and vocabulary. With regard to late-exit model, Texas kindergarten teachers were observed to spend 26% of class time in English instruction, which resembled an early-exit rather than late-exit program model. Moreover, at kindergarten level teachers consistently spent a higher percentage of time in word work such as book and print awareness, alphabet letter recognition and reproduction, phonemic awareness, etc. As grade level progresses an increased

proportion of time was devoted to reading comprehension (including discussions of predictable text, previewing to prepare for reading, etc.) in all sites. The authors concluded that it was still unknown as whether student academic outcome can be explained by allocation of time and instructional content, and it will be very interesting to investigate the trade-off of building oral language skills through vocabulary instruction or decoding emphasis. Evidently, it will be problematic if only students' performances are investigated without taking into consideration the discrepancy between program labeling and real classroom implementation.

Summary

This chapter reviews the theoretical framework as well as empirical studies regarding English oral language development, its connection to English reading, and instructional programs meeting the needs of language minority students in their language and academic attainment. The review has also identified the following issues:

First, there is only a limited body of research studies that documented ELLs' L2 language acquisition (Carlisle, Beeman, Davis, & Spharim, 1999; Lindholm, 1987; Rodriguez-Brown, 1987), while a much greater number of studies have demonstrated considerable interest in (a) within-language transfer, particularly L2 vocabulary acquisition on L2 reading (Coady, 1997; Laufer, 2003; Proctor, August, Carlo, & Snow, 2006); and (b) cross-alphabetic language transfer such as metalinguistic awareness in L1 linking to L2 reading including phonological/phonemic sensitivity (Cisero & Royer, 1995; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Lindsey, Manis, & Bailey, 2003) and L1 literacy to L2 literacy (August, Calderon, & Carlo, 2001; Azua, 1998; Junge, 2004;

Manis, Lindsey, & Bailey, 2004; Proctor, August, Carlo, & Snow, 2006; Royer & Carlo, 1991). Saunders and O'Brien's (2006) synthesis over the past two decades has identified only six studies reporting L2 oral progression. Evidently, there is a lack of empirical-derived evidence regarding the nature of native Spanish-speaking ELLs' English oral development.

Second, in spite of the various depictions, the operational definition within a specific school district or even campus is not easy to achieve. The types of programs reviewed in this section are typical in that they illustrated the considerable variety from state to state, and district to district. As Ramirez, Yuen, Ramey and Pasta (1991) have implied in their study, students remained longer in SEI and early-exit programs than the stated objectives of these programs. In fact, there are a number of factors that heavily influence the implementation of various forms of bilingual or ESL, including local community, classroom instruction, teacher/personnel qualification, curriculum design, composition of students, district recourses, parental perspective, family economic status, etc. (Garcia, 2005). Although the large-scale studies have favored one program model over another, it is critical to take into consideration the specific condition in the local area where a certain type of program may be most appropriate and effective (Rennie, 1993). Moreover, in a review of the practices that best support language and literacy development for ELLs, August (2003) summarized that many of the quantitative studies did not provide a full array of description on the instructional programs, (for instance, the language distribution in the classroom, the duration of treatment, the instructional content, and the language proficiency of teachers), which has obscured the interpretation

of findings. A simple label of either TBE or SEI without ample specification does not prove to be a carefully controlled study.

Third, from a methodological perspective, there is a paucity of experimental and quasi-experimental longitudinal study coupled with random selection or random treatment addressing the same group of participants from a developmental point of view (Miller et al., 2006). Research studies reviewed in Chapter II are largely descriptive or case studies. Others have been plagued by the flaw that questions the validity of the study itself. Ramirez et al. (1991) were challenged that their investigation was led by a bad theory (Baker, 1992). The meta-analysis by Rossell and Baker (1996) was criticized by the inclusion of methodologically poor studies as evidence of their conclusion (see Green, 1997). Within the limited body of such studies, statistical analysis using pre-post test, correlation, analysis of variance (ANOVA), and multiple regression with a small sample size has dominated. A study with much larger sample size using growth modeling is therefore much needed. Being aware of these problems, the present study utilizes structural equation modeling (SEM) and applies rigorous quasi-experimental methods controlling for the problematic confounding variables so as to better transform the typical program with feasible interventions that schools can easily and effectively implement.

Finally, based on the studies conducted which investigated the relationship between L2 oral proficiency and L2 literacy, few of those studies have addressed the classroom instruction at pre- and early-school level that is very likely to influence ELLs' language acquisition and long-term attainment. In a research synthesis of quantitative

studies conducted from 1980 to 1998, Norris and Ortega (2000) were not able to find a reasonable size of experimental and quasi-experimental investigations (only 1 out of 77 reports) in light of the effectiveness of L2 instruction at elementary level. As Saunders and O'Brien (2006) noted, "there is virtually no U.S. research on how classroom instruction might best promote more academic aspects of oral language development…" (p. 19). Garcia (2000) has also indicated that controversy as well as little data exists regarding the relationship of L2 oral language and L2 literacy at pre-school level. In addition, it is also very important to clearly define the various components of oral proficiency and literacy skills when examining such relationship.

Early childhood education, according to Kostelnik, Soderman and Whiren (1999), shapes young learners' disposition and attitudes toward learning in the subsequent years. It is the responsibility of educators, practitioners, administrators and teachers to optimize and equalize our ELLs' learning experience for them to stand in competitiveness in this global society.

CHAPTER III

METHODOLOGY

The purpose of the present study was (a) to capture the growth trajectory and rate of oral English acquisition among these ELLs who started in kindergarten and continued through 1st grade. These students were tested in the beginning and end of kindergarten, and at the end of first grade, respectively; therefore, three time points of data were analyzed; (b) to investigate the role of oral English development in acquiring English reading skills, and (c) to compare instructional models (experimental and control TBE and SEI) to identify effectiveness of various program types that promote young ELLs' L2 language and literacy acquisition at early elementary level.

This chapter outlines the methodological design of my study. It includes sampling, research design, context of the study, instrumentation, intervention procedures, classroom observation, data collection and data analysis.

Sampling

The present study was derived from English Language and Literacy Acquisition (ELLA) (R305P030032)[1], an on-going five-year federal project targeting approximately 800 native Spanish-speaking ELLs in an urban school district in the state of Texas. The purpose of this large-scale project has been to implement a rigorous, longitudinal evaluation of alternative instructional modes for native Spanish-speaking students in

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[1] Data for this dissertation were pulled from a bank of data sets provided under the U.S. Department of Education, Institution of Education Sciences federal grant, Project ELLA, R305P030032.

acquiring English language and literacy. All students participating in Project ELLA were identified by state criteria as being limited English proficient and had a Home Language Survey indicating that Spanish is the primary language spoken at home. There are two factors that must be taken into caution regarding the sampling strategy of the project. In compliance with the Texas's state law (Texas Education Code, 1995), which prohibit random selection on the basis of individual students, the project randomly selected schools within the target school district. Another factor rests on the rights of ELLs' parents to waive bilingual education and to choose alterative programs, such as SEI. To avoid this problem, students were placed in either Structured English Immersion (SEI) or Transitional Bilingual Education (TBE) program types by their respective schools, which were randomly assigned as either control (typical) or experimental (enhanced) setting. However, students in each program type were attending the same school and living in the same neighborhoods. Hence, Project ELLA is in nature both experimental and quasi-experimental, and nested design, with students nested within classrooms, and classrooms nested within schools. Power analysis (Lipsey) was conducted to determine the number of classrooms and students so that the sample size would allow for the detection of educationally relevant, but relatively small effect size differences between groups.

<div style="text-align:center">Research Design</div>

Twenty-four elementary schools receiving either SEI or TBE or both resulted from the initial random selection. New students were added at the beginning of 2005 school year to augment the sample size after a high attrition rate at the end of 2004

school year when participants were ready to move to the first grade. In order to ensure

the validity of the present study, rather than include all students, I decided to include

only those students who have been enrolled continuously and remained in the same

program as their initial placement since kindergarten till the end of first grade (2004 and

2005 school year). Therefore, the total number of students who met this designated

criteria was 534. Table 1 depicts the break-downs of students, as well as classrooms in

each program intervention.

Table 1

Break-downs of Four Intervention Groups

	SEI		TBE		Total n	
Enhanced	Classrooms:	12	Classrooms:	17	Classrooms:	29
(11 schools total)	Students:	88	Students:	210	Students:	298
Typical Practice	Classrooms:	16	Classrooms:	11	Classrooms:	27
(12 schools total)	Students:	125	Students:	111	Students:	236
Total	Classrooms:	28	Classrooms:	28	Classrooms:	56
	Students:	213	Students:	321	Students:	534

Of the 12 schools receiving an enhanced treatment, ten schools received both

enhanced SEI and TBE, while the remaining two schools received either enhanced SEI

or TBE. Of the 12 schools receiving the typical practice treatment, nine schools

received both typical practice SEI and TBE, while the remaining three schools received

only SEI.

Context of the Study

The present study took place in a large urban school district in the state of Texas. The district provides services to over 45% of students whose first language is Spanish. The majority of students in this school district are at a low social economic status (SES) level; therefore, they are provided free or reduced lunches. At the time of the study, the district had three types of programs for ELLs: structured English immersion, transitional bilingual program, and two-way immersion program. The district was chosen because of its long-standing reputation and experiences working with ELLs, its consistency in program philosophy and implementation, and access to SEI and TBE programs within the district.

Instrumentation

The Wookcock Language Proficiency Battery-Revised (WLPB-R) (Woodcock, 1991) was used to measure young Spanish-speaking learners' English vocabulary knowledge, listening comprehension, and reading comprehension. The English version of WLPB-R assesses a broad English language proficiency in oral, language, reading, and written language.

L2 Oral Proficiency

For the purpose of my study, scores from Picture Vocabulary and Listening Comprehension were selected as a measure of participants' oral English proficiency.

Picture Vocabulary. Picture Vocabulary requires test-takers to name familiar and unfamiliar pictured objects. It is an expressive semantic task on a single word-level

which accesses test-takers' familiarity with vocabulary. The internal consistency of this subtest among participants aged 6 is .773. It has a concurrent validity of .513 for the aged 3 group with Kaufman Assessment Battery for Children (K-ABC, Kaufman & Kaufman, 1983) – Expressive Vocabulary; .456 with Peabody Picture Vocabulary Test – Revised (PPVT-R, Dunn & Dunn, 1981); and .489 with Standford-Binet Intelligence Scale – Fourth Edition (SB- IV, Thorndike, Hagen, & Sattler, 1986) – Vocabulary (Woodcock, 1991). Each item is coded either correct or incorrect, with 1 point for correct and 0 for incorrect. The total possible raw score for Picture Vocabulary is 58.

Listening Comprehension. In the Listening Comprehension subtest, test-takers are presented with a passage auditorily and are required to supply the single word missing at the end of the passage. The test focuses upon a number of semantic operations. The test begins with simple verbal analogies and associates and progresses to a higher level of comprehension involving the ability to discern implications. This subtest is reported to have an internal consistency of .826 at the norm of six years old, and a test-retest reliability of .863 (Woodcock, 1991). Each item is coded either correct or incorrect, with 1 point for correct and 0 for incorrect. The total possible raw score for Listening Comprehension is 38.

L2 Reading Comprehension

The subtest of WLPB-R, Passage comprehension, was administered to assess participants' reading comprehension skills. Passage Comprehension consists of multiple-choice questions that require test-takers to point to the picture represented by a phrase. The remaining tasks measure test-takers' skill in reading a short passage and identifying

a missing key word. In this subtest, test takers must exercise a variety of vocabulary skills and comprehension. The internal consistency reaches as high as .948 among the norm of age six. The test-retest reliability of .90 is reported (Woodcock, 1991). The concurrent validity for the Grade 3 group is .803 with Peabody Individual Achievement Test (PIAT, Dun & Markwardt, 1970) in total reading, and .692 with Wechsler Intelligence Scale for Children – Revised (WISC-R, Wechsler, 1974) in verbal scale (Woodcock, 1991). Each item is coded either correct or incorrect, with 1 point for correct and 0 for incorrect. The total possible raw score for Passage Comprehension is 43.

<p align="center">Intervention Procedures</p>

Transitional Bilingual Education – Typical (TBE-T)

The typical practice of TBE in the school district where the present study takes place is a program that begins with an 80% (Spanish) / 20% (English) model in Kindergarten (K) and moves to a 50/50 model in grade 3. Kindergarten focuses on oral language development in English and moves to content instruction in Science and Social Studies by third grade. There is a 45-minute ESL component with no support from research team of Project ELLA.

Transitional Bilingual Education – Enhanced (TBE-E)

The enhanced practice of TBE in the school district where the present study took place is a program that begins with a 70% (Spanish)/ 30% (English) model in K and moves to a 40/60 model in grade 3. Kindergarten focuses on oral language development

in English and moves to content instruction in Science and Social Studies by third grade. The practice of kindergarten and first grade of the present study had the following characteristics:

For Kindergarten and First grade, the practice had 70% Spanish component with language arts and content area in Spanish. When students moved on to first grade, the Spanish component included Spanish reading and language arts, math, and science.

For kindergarten, the 75 minute ESL component consisted of 50 minutes of daily tutorials in Intensive English (Ventriglia & González, 2000) program; fifteen minutes for story telling and retelling activities for English language and literacy acquisition (which selects authentic literature from children's background and uses Bloom's Taxonomy for leveled questions) (Irby, Lara-Alecio, Mathes, Rodriguez, Quiros, & Durodola, 2004); and 10 minutes for teacher-conducted Daily Oral Language using *Question of the Day* (Lakeshore, 1997).

When students moved to first grade, ESL intervention was increased to 90 minutes with 40 minutes of Santillana Intensive English / Interactive Writing (Ventriglia & Gonzalez, 1999), 40 minutes of Story Telling for English Language and Literacy Acquisition [STELLA] (Irby, Lara-Alecio, Mathes, Rodriguez, Quiros, & Durodola, 2004); and 10 minutes of Science-based Oral Language Development. The low-performing students were allowed an additional 10 minutes for oracy and vocabulary development with a teaching assistant, using additional strategies in the Intensive English program. Additionally, teachers and staff were provided with bi-monthly professional development workshops. Teachers kept professional portfolios and reflected

on practice weekly. Parent training sessions were offered during the week and on Saturdays. Each classroom was provided with books with take-home literacy activities for parents and children. Teachers and teacher aides were trained twice a month to use the following ESL strategies in their classroom: visual scaffolding; realia strategies; flexible grouping; shared reading; leveled questions; manipulatives; modeled talk; vocabulary word dramatization; word walls; story reenactment; language experience approach, and free voluntary reading.

It should be noted that the enhanced transitional bilingual education program is in effect a one-way dual language program because of the following characteristics: (a) subject matter is taught in the first and/or second language; (b) literacy is developed in the first and second language; and (c) comprehensible input is provided in English and the second language (Kolak Group Inc, 2005).

Structured English Immersion – Typical (SEI-T)

The typical practice of SEI in the school district where the present study took place for kindergarten and first grade is a program that was currently taught in the school district with all subjects taught in English; rarely are clarifications from Spanish made. There is a 45-minute ESL component with no support from research team of Project ELLA.

Structured English Immersion – Enhanced (SEI-E)

For Kindergarten and first grade, the enhanced practice of SEI in the school district where the present study took place had the following characteristics:

All subjects including content areas were taught using total physical response, visual aids, gestures, and other appropriate strategies used in classes for ELL students. Language development strategies were included in the content subject. Spanish was used to clarify only when or if needed.

For kindergarten, the 75 minute ESL component consisted of 50 minutes of daily tutorials in Intensive English (Ventriglia & González, 2000) program; fifteen minutes for story telling and retelling activities for English language and literacy acquisition (which selects authentic literature from children's background and uses Bloom's Taxonomy for leveled questions) (Irby, Lara-Alecio, Mathes, Rodriguez, Quiros, & Durodola, 2004); and 10 minutes for teacher-conducted Daily Oral Language using *Question of the Day* (Lakeshore, 1997).

When students moved to first grade, ESL intervention was increased to 90 minutes with 40 minutes of Santillana Intensive English / Interactive Writing (Ventriglia & Gonzalez, 1999), 40 minutes of Story Telling for English Language and Literacy Acquisition [STELLA] (Irby, Lara-Alecio, Mathes, Rodriguez, Quiros, & Durodola, 2004); and 10 minutes of Science-based Oral Language Development. The low-performing students were allowed an additional 10 minutes for oracy and vocabulary development with a teaching assistant, using additional strategies in the Intensive English program. Additionally, teachers and staff were provided with bi-monthly professional development workshops. Teachers kept professional portfolios and reflected on practice weekly. Parent training sessions were offered during the week and on Saturdays. Each classroom was provided with books with take-home literacy activities

for parents and children. Teachers and teacher aides were trained twice a month to use the following ESL strategies in their classroom: visual scaffolding; realia strategies; flexible grouping; shared reading; leveled questions; manipulatives; modeled talk; vocabulary word dramatization; word walls; story reenactment; language experience approach, and free voluntary reading.

<div align="center">Classroom Observation</div>

To ensure the validity of project implementation, Bilingual/ESL coordinators were trained in classroom observation. They observed classrooms to provide the teachers with feedback on their instructional practices for all four conditions. Classroom observation was completed using the Transitional Bilingual Observation Protocol (TBOP) Instrument (Lara-Alecio & Parker, 1994). This protocol has been validated and applied successfully to evaluate research not only in transitional bilingual classrooms (Breunig, 1998; Meyer, 2000), but also in dual language and structured English immersion classrooms. Sixty times of observation was conducted and each time was composed of 20 seconds. For the entire school year there were four cycles of such observation. The TBOP instrument consists of four dimensions: (a) Language Content, (b) Language of Instruction, (c) Communication Mode, and (d) Activity Structures. Figure 1 presents the four domains which will allow this project to assess the occurrences of language of instruction, language of response in relations to communication mode, cognitive response level, and instructional activity structures within the classroom.
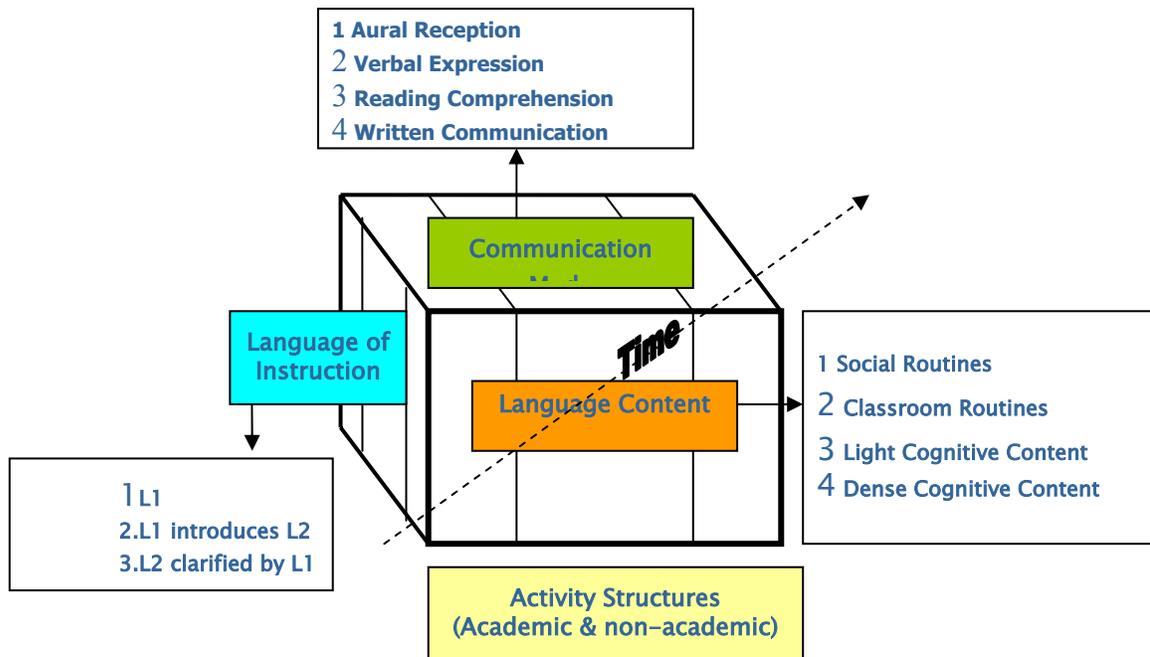
Figure 1. Transitional Bilingual Observation Protocol (Lara-Alecio & Parker, 1994).

A .90 inter-rater reliability was established among on-site coordinators and observers before the data collection. In order to better understand whether classroom instruction can direct oral development and reading comprehension, a brief examination of the results from classroom observation (K-1 combined) within each program model has been summarized.

In terms of language of instruction, the experimental teachers, SEI-E (.26%) and TBE-E (.14%) were observed less frequently speaking in L1 (Spanish) during the ESL teaching time than the SEI-T (6.64%) and TBE-T (15.80%) teachers. The SEI-E (95.42%) and the TBE-E (97.72%) teachers were observed speaking in L2 (English) at a higher rate during their ESL instructional time than were the SEI-T (87.26%) and the TBE-T (74.50%) teachers.

In terms of Communication Mode, although with low frequencies, writing and reading were observed more often in typical practice classrooms (5.12% in SEI-T; 7.73% in TBE-T) than in enhanced classrooms (.82% in SEI-E; .49% in TBE-E). Listening was observed more frequently in typical practice classrooms (47.34%) than in enhanced classrooms (34.54%), while verbal activities were observed more often in enhanced classrooms (49.83%) than in typical practice classrooms (29.47%). The most frequent combination of modes observed was Aural-Verbal with it being more frequently observed in the enhanced classrooms (97.09%) as opposed to the typical practice classrooms (70.47%). Any mode that was inclusive of reading, though with minimum occurrences, was more frequently observed in typical practice classrooms as opposed to enhanced classrooms.

In terms of Language Content, dense cognitive content was observed more often in enhanced practice classrooms (13% in SEI-E; 19% in TBE-E) as opposed in typical practice classrooms (7% in SEI-T; 12% in TBE-T). In addition, more academic content was observed in enhanced classrooms (40% in SEI-E; 32% in TBE-E) than in typical practice classrooms (27% in SEI-T; 21% in TBE-T). It has also been reported that students' language of use mirrored teachers' instructional practice. That is to say, if teachers use more Spanish, then students respond in the same fashion (Lara-Alecio, Irby, & Mathes, 2006).

<div align="center">Research Questions</div>

Four research questions have guided this study:

Four researches questions have guided the present study:

1. What is the respective growth trajectory and rate of oral English development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

2. Is there any significant difference in the trajectory and rate of oral English development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

3. Can students' initial level and rate of development in oral English proficiency predict English reading outcome among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

4. Is there any significant difference in terms of the prediction of English oral proficiency upon English reading achievement among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

<div align="center">Data Collection</div>

Scores of WLPB-R were collected in beginning of kindergarten (Fall 2004), end of kindergarten (Spring 2005), and end of first grade (Spring 2006). Since no intervention continued during the Summer of 2005, the three time points can be considered with approximately equal interval. Trained paraprofessionals or testers administered each of the tests. Data capture was completed by Tele-form software which allows for hand printed as well as a variety of limited entry and bubbled data fields that

eliminate the need for manual entry of data. It greatly facilitates building the databases for a large sample size. The researcher participated in the data entry, cleaning and analysis for the entire project.

Data Analysis

Researchers have favored the use of structural equation modeling (SEM), and latent growth model (LGM) in particular, to study longitudinal data (Duncan & Duncan, 2004; Kline, 1998). One of the goals of trajectory modeling is to capture the unobserved growth trajectory by utilizing repeated measures observed (Bollen & Curran, 2006). Therefore, the present study has applied SEM techniques by using a statistical software, LISREL (Jöreskog & Sörbom, 2005) version 8.72 to test and evaluate hypothetic models. To meet the requirement of applying SEM strategy (Duncan & Duncan, 2004), raw data were analyzed.

Descriptive statistics of WLPB-R raw scores are presented within respective program type. Normality testing and correlations among observed variables are also reported.

Hypothetic Model 1: Linear Trajectory LGM

Two steps of analysis have been conducted to answer research question 1: What is the respective growth trajectory and rate of oral English development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types? The hypothesis was: there is a linear trend of participants' oral language development in L2. The first step involved

the establishment of a measurement model. This model had three time points as latent

factors, and each factor was loaded on two observed variables of English oral

proficiency scores. The next step was to investigate the correlation between observed

variables. If statistically significant correlation is present among two observed variables

within each time point, as well as among the same observed variable across the time

points and if the ratio of parameters to the number of observed variables is too limited,

then a simplified latent growth model with composite scores should be adopted to test

the mean structure of growth trajectory across time (Bentler & Chou, 1987; Marsh &

Hau, 1999). In order to ensure an objective and comprehensive model testing, Kline

(1998) suggested an examination of at least three categories of fit indices in structural

equation modeling, including chi-square; goodess-of-fit index (GFI), normed fit index

(NFI), or comparative fit index (CFI); non-normed fit index (NNFI); and standardized

root mean square residual (SRMR). Some researchers have also recommended the use of

root mean square error of approximation (RMSEA) and CFI which are less sensitive to

sample size (Fan, Thompson, & Wang, 1999). Due to the fact that each group had a

sample size equal or smaller than 200, I have decided to evaluate the models based on

four indices: chi-square, CFI, RMSEA, and SRMR. The criteria for a good model fit was:

CFI > .95; RMSEA < .1; SRMR < .08 (Kline, 1998). The significance level was set at

$\alpha = .05$. According to Thompson (2000), reporting the effect size is essential for good

research and in the context of structural equation modeling, goodness of fit indices can

be considered as effect size.

To answer research question 2: Is there any significant difference in the trajectory and rate of oral English development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types? The null hypothesis was: there is no statistically significant difference among students in four program types regarding the rate of L2 oral language growth. Latent means structures were investigated and compared among four program models. This step involved a chi-square difference test which was performed to explore any difference of mean structure of initial level and growth trajectory across the four instructional practices.

Hypothetic Model 2: Prediction of L2 Oracy on L2 Reading

To answer research question 3: Can students' initial level and rate of development in oral English proficiency predict English reading outcome among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types? A structural path model was conceptualized based on the latent growth model established earlier with a directional path free to estimate from initial level and rate of growth to the latent variable of reading achievement as an observed variable. Respective factor loading (path coefficient) was investigated in each model. Cohen's (1988) d was referred to determine the effect size of each path coefficient.

To answer research question 4: Is there any significant difference in terms of the prediction of English oral proficiency upon English reading achievement among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical

transitional bilingual and structured English immersion program types? The null hypothesis was: there is no statistically significant difference among students in four program types regarding the path coefficient of intercept and slope loaded on reading comprehension. Chi-square different test was again utilized in this path model to compare the respective magnitude of factor loadings of oral language intercept and rate on reading comprehension across four program models.

Summary

Chapter III of my study has presented a detailed description of the research design. This chapter has also presented data collection and analysis methods. Scores from standardized tests were collected at three time points.

The next chapter will cover the presentation and analysis of data.

CHAPTER IV

DATA ANALYSIS

For the convenience of description, this chapter presents the results of model investigation from respective program type, i.e. structured English immersion-enhanced/experimental (SEI-E), structured English immersion – typical/control (SEI-T), transitional bilingual English- enhanced/experimental (TBE-E), and transitional bilingual English- enhanced/control (TBE-T), and model comparison. Descriptive statistics of raw data, model specification, trimming, fit indices, as well as chi-square difference test of group comparison will be reported accordingly.

Individual Groups

Structured English Immersion – Enhanced (SEI-E)

Descriptive statistics of WLPB-R scores collected in the beginning of kindergarten (Fall 2004), end of kindergarten (Spring 2005), and end of first grade (Spring 2006) are listed in Table 2.

Table 2

Descriptive Statistics for Three Time Points (SEI-E)

	N	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PV1	88	16.3750	4.55190	-.223	.257	.799	.508
LC1	88	5.7955	4.35008	.516	.257	-.860	.508
PV2	88	22.3750	3.02219	-.233	.257	.704	.508
LC2	88	9.3295	4.84168	-.198	.257	-.872	.508
PV3	88	24.3409	2.96294	.074	.257	-.505	.508
LC3	88	14.2273	4.39626	-.849	.257	.929	.508
PC	88	13.5000	3.74166	-.436	.257	1.045	.508

Note. N = 88. PV = Picture Vocabulary. LC = Listening Comprehension. 1 = data collected in Fall 2004. 2 = data collected in Spring 2005. 3 = data collected in Spring 2006. PC = Passage Comprehension collected in summer 2006.

There were in total 88 students tested at all three time points. An examination of Table 2 indicates that the absolute values of skewness and kurtosis statistics are less than 2 and 7, respectively. This means that data are normally distributed. The statistics also demonstrate that as time changed, the mean of both tests increased accordingly, with the variation remaining same in Listening Comprehension and decreasing in Picture Vocabulary. A correlation matrix (Table 3) was calculated before I could establish a model.

Table 3

Correlations Among Structural Equation Model Variables (SEI-E)

Variable	1	2	3	4	5	6	7
1. PV1	---						
2. LC1	.40***	---					
3. PV2	.26*	.28***	---				
4. LC2	.26*	.42***	.57***	---			
5. PV3	.07	-.05	.28***	.16	---		
6. LC3	.28***	.35***	.38***	.57***	.22***	---	
7. PC	.03	.04	.22*	.28***	.10	.15	---

Note. $N = 88$. * $p < .05$. *** $p < .001$.

A measurement model with three time points as latent factors and the six observed variables as indicators was then established (see Figure 2). Each time point was loaded on two observed variables as a latent structure of oral language proficiency. The score of Picture Vocabulary was set as a marker variable. Model evaluation is conducted according to chi-square, comparative fit indices (CFI: Bentler, 1990), root mean square error of approximation (RMSEA: Fan, Thompson, & Wang, 1999) and standardized root mean square residual (SRMR: Kline, 1998)
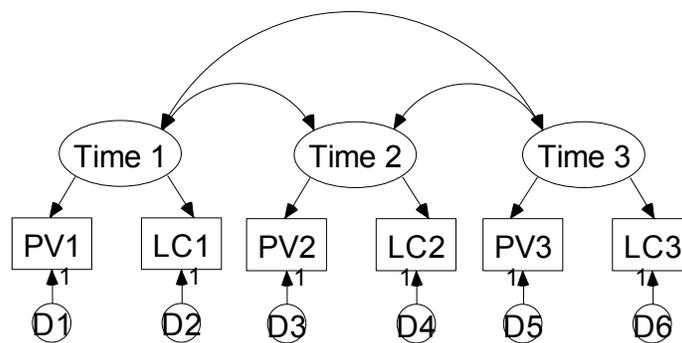
Figure 2. Measurement model of second language (L2) oral development (SEI-E). Each time point represents latent factor of L2 oral proficiency as a construct.

The indices of maximum likelihood estimation by LISREL program indicated a

good model fit with $\chi^2 = 3.078(4, N = 88), p = .545$, RMSEA = .00, CFI = 1.000,

SRMR = .03. Based on these results and the fact that oral English develops at a constant

rate over time at grade levels (Miller et al., 2006; Saunders & O'Brien, 2006), a latent

growth model with linear trajectory was then conceptualized (Figure 3). In the proposed

model, the factor loading of the slope on each time point was fixed to 0.0, 1.0, and 2.0

respectively, indicating a linear growth trajectory.
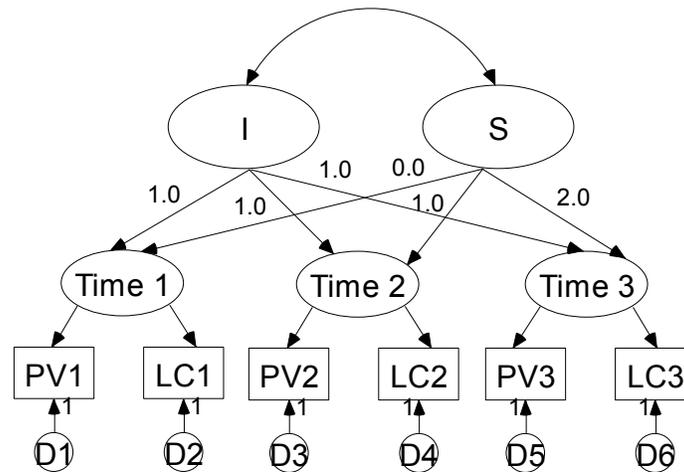
Figure 3. Hypothetic model 1: Linear trajectory latent growth model of second language

(L2) oral development (SEI-E). I= intercept; S = slope. Each time point represents latent

factor of L2 oral proficiency as a construct.

Further analysis of the data as a second-order growth model resulted in a low

observations/parameters ratio. According to Bentler and Chou (1987), for an identified

model with sufficient degrees of freedom, the ratio of observations to parameters should

be at least five for normally distributed data and 10 for non-normal data. Therefore, to

reduce the complexity of the model, I decided to compute a composite score as an observed variable for each time point. Since the possible maximum score was 58 for picture vocabulary and 38 for listening comprehension, problems would arise if the two scores with different scaling were averaged. To avoid that problem, the raw data were then converted into percentage scores. An investigation of the matrix in Table 3 reveals statistically significant correlations between PV1 and LC1 ($p < .001$), PV2 and LC2 ($p < .001$), PV3 and LC3 ($p < .001$), PV1, PV2, and PV3 ($p < .001$) , and LC1, LC2 and LC3 ($p < .001$) with a magnitude of .2 or larger. In addition, researchers have agreed that knowledge of vocabulary and listening skills are two strong indicators of oral language proficiency (Becker, 1977; Freebody & Anderson, 1983; Hedrick & Cunningham, 1995; Snow, 1997; Snow, Burns, & Griffin, 1998). Hence, the two percentage scores collected at the same time were averaged as a composite score indicating each time point. For example, the percentage scores of picture vocabulary and listening comprehension collected in fall 2004 of each participant was averaged as one observed variable. By this means the second order model was simplified into the following model (Figure 4):
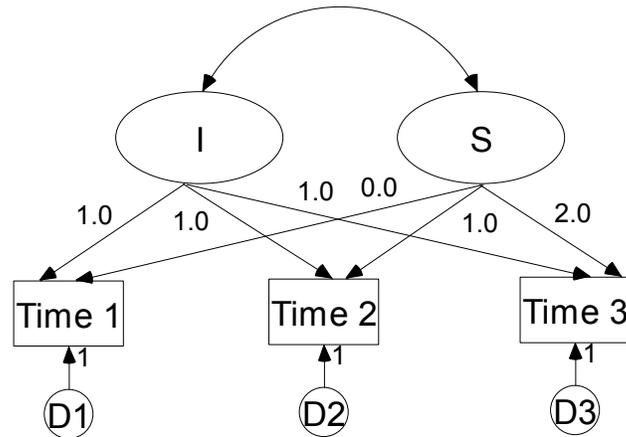
*Figure 4.* Hypothetic model 1 adapted: Simplified linear trajectory latent growth model of second language (L2) oral development (SEI-E). Each time point represents L2 oral proficiency as a construct.

This hypothetic model has the following fit indices: $\chi^2(1, N = 88) = 1.562$, $p = .511$, RMSEA = .079, CFI = .989, SRMR = .00, This implied that there is no statistically significant difference between model derived variance-covariance matrix and observed variance-covariance matrix, suggesting a good fit to the data with a linear trajectory of growth over time.

The parameter estimation of latent mean as well as variance of intercept and slope is also listed in Table 4.

Table 4

Mean and Variance Estimation by LGM (SEI-E)

	Mean	z-value	variance	z-value
Intercept	.220	26.180***	.004	3.059*
Slope	.089	19.362***	.001	2.301*
Intercept * Slope			-.001	-1.614

*Note. N = 88. *** p < .001. * p < .05.*

Data from Table 4 imply a significant variation among students placed in SEI-E, whose initial level of English oral proficiency differed statistically. The same applied to the slope variance which is also statistically significant at $\alpha = .05$ level, suggesting that the students were heterogeneous in their growth rate of oral language proficiency. The absence of a significant correlation between the initial status and rate of change factors means that students' levels of oral proficiency at the beginning of kindergarten did not predict their rates of subsequent change. The mean of the slope was estimated as .089, indicating an 8.9% increase per year of the percentage composite score. This can be illustrated as

$$\hat{Y}_{composite} = .220 + .089 * Time_i .$$

A second hypothetic model of oral language growth on reading comprehension was then established and estimated. Goodness-of-fit indices for this proposed model are: $\chi^2(2, N = 88) = 7.74$, $p = .02$, RMSEA = .169, CFI = .902, SRMR = .079. Obviously the overall indices have suggested a bad model fit. By considering a

possibility of the presence of unique variances in observed variables (English oral

proficiency) that may not be captured by a latent growth model, I decided to modify this

prediction model by adding a residual variance of each time point as a latent factor

loaded on reading comprehension. The modified model has the following fit

indices: $\chi^2(1, N = 88) = .041$, $p = .702$, RMSEA = .0, CFI = 1.000, SRMR = .015. The

prediction model was improved to a large extent, indicating a satisfactory model fit. The

standardized solution is presented in Figure 5. An investigation of the parameter

estimation has identified the residual variances of the construct measured (English oral

proficiency) not captured by the growth model statistically significant predictor on

reading achievement ($z = 5.172$, $p < .05$). The factor loading of the slope on reading

comprehension is statistically significant ($z = 2.049$, $p < .05$), whereas the factor

loading of the intercept on reading is not statistically significant ($z = -1.539$, $p = .12$).

This can be interpreted to indicate that the amount of oral English acquisition over the

two years of intervention can statistically and positively influence reading

comprehension at the end of first grade. Moreover, the construct of English oral

proficiency indicated a stronger positive contribution toward reading outcome, even

though the discrete factors were unknown. The standardized solution is presented in
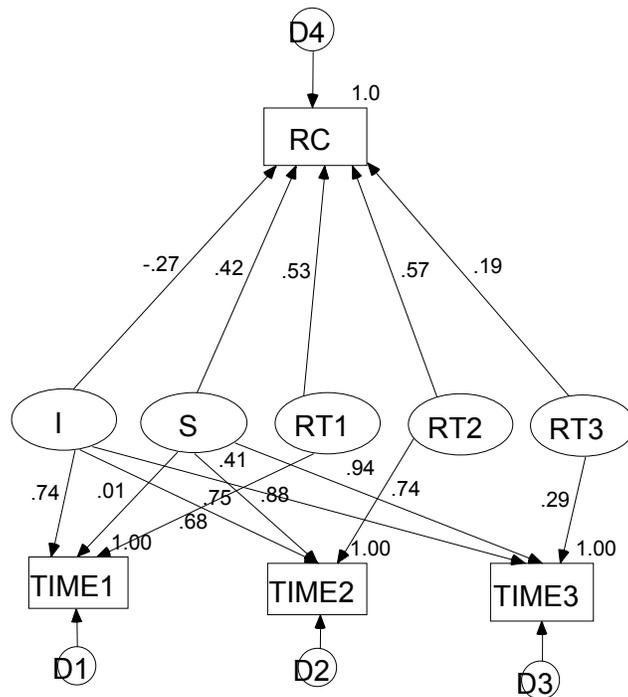
Figure 5.

Figure 5. LISREL-derived structural equation model of prediction on reading

comprehension with standardized regression (SEI-E).

Structured English Immersion – Typical (SEI-T)

Due to a low return rate from parental survey of Project ELLA, only 75 students

in this group started at the beginning of kindergarten. Therefore, to augment the sample

size, another 100 students were added in the Winter of 2004 (Lara-Alecio, Irby, &

Mathes, 2006). Independent sample t-tests (Table 5) were conducted to explore the

difference in their English oral proficiency both at the beginning and end of kindergarten

on Picture Vocabulary and Listening Comprehension. Levene's test of homogeneity was

used in testing for possible violation of homogeneity of variance. No statistical

significant difference was detected between the original group and the added group,

indicating that no learning-over effect had resulted in statistical difference and as a result,

the two groups were incorporated as one single group of SEI-T.

Table 5

Independent Sample T-test for Original and Added Students (SEI-T)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower	Upper
PV2	Equal variance assumed	7.8	.006	1.417	173	.158	.6367	.44945	-.25045	1.52378
	Equal variance not assumed			1.370	136.9	.173	.6367	.46472	-.28229	1.55563
PV1	Equal variance assumed	.074	.786	-.819	173	.414	-.643	.78595	-2.19463	.90796
	Equal variance not assumed			-.804	147.7	.423	-.643	.80038	-2.22501	.93834
LC2	Equal variance assumed	.188	.665	-.835	173	.405	-.630	.75460	-2.11941	.85941
	Equal variance not assumed			-.824	151.0	.411	-.630	.76477	-2.14104	.88104
LC1	Equal variance assumed	2.0	.163	-.103	173	.918	-.073	.71189	-1.47845	1.33178
	Equal variance not assumed			-.101	147.5	.920	-.073	.72526	-1.50659	1.35992

Descriptive statistics of WLPB-R scores collected in the beginning of

kindergarten (Fall 2004), end of kindergarten (Spring 2005), and end of first grade

(Spring 2006) are listed in Table 6.

Table 6

Descriptive Statistics for Three Time Points (SEI-T)

	N	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PV1	125	18.4880	5.05074	-.205	.217	-.037	.430
LC1	125	6.7280	4.43842	.407	.217	-.512	.430
PV2	125	22.8960	2.74398	.308	.217	-.195	.430
LC2	125	9.5360	4.73413	-.007	.217	-.162	.430
PV3	125	24.1760	5.05464	-2.781	.217	11.263	.430
LC3	125	14.3840	4.54331	-.814	.217	1.339	.430
PC	125	14.5360	4.17856	-.999	.217	2.094	.430

Note. $N = 125$. PV = Picture Vocabulary. LC = Listening Comprehension. 1 = data collected in fall 2004. 2 = data collected in Spring 2005. 3 = data collected in Spring 2006. PC = Passage Comprehension collected in Spring 2006.

There were in total 125 students tested at all three time points. An examination of Table 6 indicates that except for the variable of Picture Vocabulary collected in Spring 2006, the absolute values of skewness and kurtosis statistics are less than 2 and 7, respectively. This means that data for this specific variable is not normally distributed, which violated normal distribution assumption in SEM. The statistics also demonstrate that as time progressed, the mean of both tests increased accordingly. The variation of scores in the test of Picture Vocabulary fluctuated while the variation in Listening Comprehension remained constant. Therefore, nonnormality adjustments were applied using Prelis in LISREL (Kline, 2005).

A correlation matrix (Table 7) was then calculated before I could establish a model.

Table 7

Correlations Among Structural Equation Model Variables (SEI-T)

Variable	1	2	3	4	5	6	7
1. PV1	---						
2. LC1	.52***	---					
3. PV2	.43***	.45***	---				
4. LC2	.47***	.64***	.43***	---			
5. PV3	.32***	.26***	.27***	.18*	---		
6. LC3	.54***	.61***	.46***	.55***	.44***	---	
7. PC	.35***	.35***	.24***	.21*	.49***	.49***	---

Note. N = 125. *** *p* < .001.

Statistically significant correlations were identified between PV1 and LC1

(*p* < .001), PV2 and LC2 (*p* < .001), PV3 and LC3 (*p* < .001), PV1, PV2, and PV3

(*p* < .001) , and LC1, LC2 and LC3 (*p* < .001) with a magnitude of .43 or larger.

Accordingly, the same steps were followed as in analyzing data from SEI-E. The

variance of the slope factor is very small, and I fixed it to zero. The measurement model

was found to be a good fit with measurement errors correlated with each other for the

marker variable Picture Vocabulary: $\chi^2(3, N = 125) = 4.287$, $p = .232$, RMSEA = .059,

CFI = .977, SRMR = .028. The adapted latent growth model fit indices

are $\chi^2(2, N = 125) = 2.108$, $p = .349$, RMSEA = .028, CFI = .999, SRMR = .055,

indicating that there is no statistically significant difference between model implied

variance-covariance matrix and observed variance-covariance matrix.

Table 8

Mean and Variance Estimation by LGM (SEI-T)

Parameter	Mean	z-value	Variance	z-value
Intercept	.248	31.921***	.006	6.143***
Slope	.075	20.869***	0	
Intercept * Slope			-.001	-2.572*

Note. $N = 121$. * $p < .05$. *** $p < .001$.

Data from Table 8 imply a significant variation among students placed in SEI-T, whose initial level of English oral proficiency statistically differed from each other. Because the variance of slope was estimated to be very small, I then fixed it to zero. This finding suggests that oral language growth rate is homogeneous among students in this particular group. There is a negative while statistically significant correlation between initial status and rate of change which means that the students' level of oral proficiency at the beginning of kindergarten negatively predicted their rate of subsequent change. The mean of slope was estimated as .075, indicating a 7.5% increase per year of the percentage composite score. This can be illustrated as

$$\hat{Y}_{composite} = .248 + .075 * Time_i.$$

The second hypothetic model of oral language growth on reading comprehension was then established and estimated. Goodness-of-fit indices for this proposed model are: $\chi^2(3, N = 125) = 31.264$, $p = .00$, RMSEA = .27, CFI = .86, SRMR = .1. Obviously all the indices have suggested a bad model fit. By considering a possibility of the presence of unique variances in observed variables that may not be captured by a

latent growth model, I decided to modify this prediction model by adding a residual

variance of each time point as a latent factor loaded on reading comprehension. The

modified model has the following fit indices: $\chi^2 (3, N = 125) = 8.242$, $p = .04$, RMSEA

= .11, CFI = .97, SRMR = .08. The prediction model was improved to a large extent.

The *p*-value of chi-square is very close to .05, and the value of RMSEA is smaller than

that in previous model. Researchers have cautioned that sole reliance on fit indices of

cut-off values may obscure the understanding of a model (Browne, MacCallum, Kim,

Andersen, & Glaser, 2002; Fan & Sivo, 2005). Therefore, this revised prediction model

is accepted as a mediocre to marginal fit. An investigation of the parameter estimation

has identified the residual variances of the construct measured (English oral proficiency)

not captured by the growth model statistically significant predictor on reading

achievement ($z = 2.79, p < .05$), whereas neither the initial status nor the slope were

found to predict reading achievement. This can be interpreted to indicate that the oral

English proficiency can statistically and positively influence reading comprehension.

The standardized solution is presented in Figure 6.
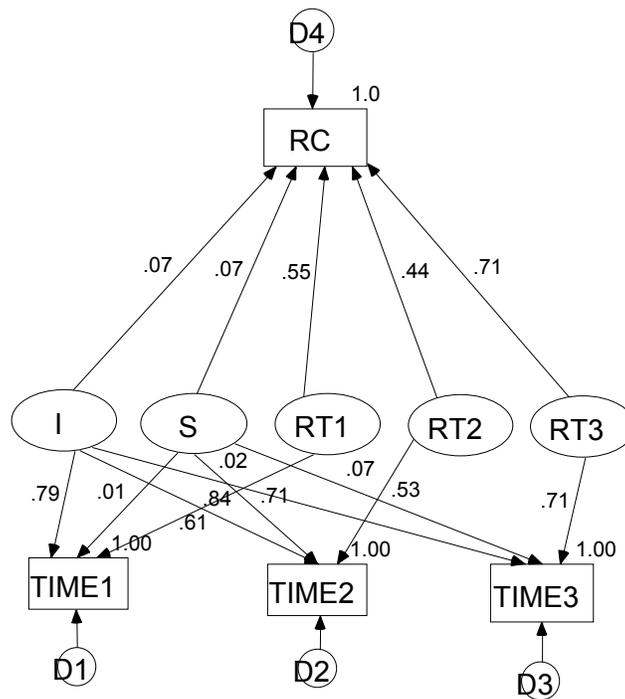
Figure 6. LISREL-derived structural equation model of prediction on reading comprehension with standardized regression (SEI-T).

Transitional Bilingual Education – Enhanced (TBE-E)

Descriptive statistics of WLPB-R scores collected in the beginning of kindergarten (Fall 2004), end of kindergarten (Spring 2005), and end of first grade (Spring 2006) are listed in Table 9.

Table 9

Descriptive Statistics for Three Time Points (TBE-E)

	N	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PV1	210	12.3238	4.71990	-.147	.168	-.367	.334
LC1	210	2.1238	2.89925	1.631	.168	1.940	.334
PV2	210	18.0238	2.99512	.040	.168	-.035	.334
LC2	210	4.2810	3.93270	.745	.168	-.474	.334
PV3	210	20.5238	3.46575	.401	.168	-.459	.334
LC3	210	9.0714	4.63497	.119	.168	-.749	.334
PC	210	11.2048	3.68898	.004	.168	-.044	.334

Note. N = 210. PV = Picture Vocabulary. LC = Listening Comprehension. 1 = data collected in Fall 2004. 2 = data collected in Spring 2005. 3 = data collected in Spring 2006. PC = Passage Comprehension collected in Spring 2006.

There were in total 210 students tested at all three time points. An examination of Table 9 indicates that the absolute values of skewness and kurtosis statistics are less than 2 and 7, respectively. This means that data are normally distributed. The statistics also demonstrate that as time changed, the mean of both tests increased accordingly. The variation of scores in both of the tests fluctuated slightly. A correlation matrix (Table 10) was calculated before I could establish a model.

Table 10

Correlations Among Structural Equation Model Variables (TBE-E)

Variable	1	2	3	4	5	6	7
1. PV1	---						
2. LC1	.52***	---					
3. PV2	.52***	.53***	---				
4. LC2	.37***	.54***	.50***	---			
5. PV3	.47***	.47***	.69***	.49***	---		
6. LC3	.42***	.50***	.60***	.55***	.62***	---	
7. PC	.34***	.45*	.48***	.41***	.58***	.57***	---

Note. N = 210. *** *p* < .001.

Statistically significant correlations were identified between PV1 and LC1 (*p* < .001), PV2 and LC2 (*p* < .001), PV3 and LC3 (*p* < .001), PV1, PV2, and PV3 (*p* < .001) , and LC1, LC2 and LC3 (*p* < .001) with a magnitude of .50 or larger. Accordingly, same steps were followed as in analyzing data from SEI-E. Since the chi-square test is largely influenced by sample size, this measurement model is found to be a satisfactory fit with measurement errors correlated with each other for the marker variable Picture Vocabulary: $\chi^2(3, N = 210) = 2.433$, $p = .488$, RMSEA = .00, CFI = 1.000, SRMR = .01. The adapted latent growth model fit indices are $\chi^2(2, N = 210) = 2.950$, $p = .229$, RMSEA = .048, CFI = .996, SRMR = .036, indicating that there is no statistically significant difference between the observed variance-covariance matrix and the model implied variance-covariance matrix.

Table 11

Mean and Variance Estimation by LGM (TBE-E)

Parameter	mean	z-value	Variance	z-value
Intercept	.133	28.837***	.003	7.920***
Slope	.081	32.566***	.000	2.591*

Note. N = 121. * *p* <.05. *** *p* < .001.

Data from Table 11 imply a significant variation among students placed in TBE-E, whose initial level of English oral proficiency differed statistically. Similarly, the slope variance found was also statistically significant at $\alpha = .05$ level. This finding suggests that the oral language growth rate varies among students in this particular group. The absence of a significant correlation between initial status and rate of change means that the students' level of oral proficiency at the beginning of kindergarten did not predict their rates of subsequent change. The mean of the slope was estimated as .081, indicating an 8.1% increase each year of the percentage composite score. This can be illustrated as

$$\hat{Y}_{composite} = .133 + .081 * Time_i .$$

The second hypothetic model of oral language growth on reading comprehension was then established and estimated. Goodness-of-fit indices for this proposed model are: $\chi^2(2, N = 210) = 5.905.$, $p = .05$, RMSEA = .097, CFI = .991, SRMR = .05. The fit indices have suggested a good model fit. The squared multiple correlation of passage comprehension is .47, indicating that approximately 47% of the variance of this variable can be accounted for by the revised model of prediction. Based on the rules of thumb (Cohen, 1988), an r larger than .5 or r^2 larger than .25 will be considered a fairly large

effect size. An investigation of the parameter estimation identified that both the intercept

and the slope were statistically significant factors predicting reading achievement ($z =$

7.855 and 3.943, $p < .001$). This can be interpreted to indicate that the higher level of

English oracy students held at the beginning of kindergarten, and the more rapidly

students develop in their L2 oral language during kindergarten and first grade, the higher

reading scores they may obtain at the end of first grade. The standardized solution is

presented in Figure 7.
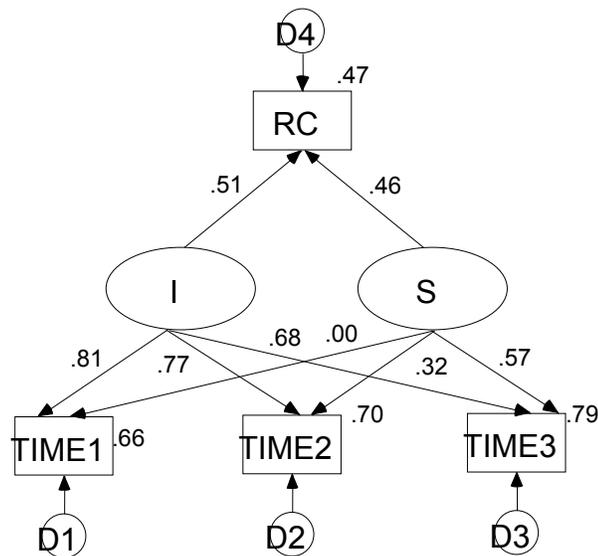
Figure 7. LISREL-derived structural equation model of prediction on reading

comprehension with standardized regression (TBE-E).

An investigation of this figure indicates that the standardized path coefficient of

intercept on Passage Comprehension is slighter higher than that of slope on Passage

Comprehension.

Transitional Bilingual Education – Typical (TBE-T)

Descriptive statistics of WLPB-R scores collected in the beginning of kindergarten (Fall 2004), end of kindergarten (Spring 2005), and end of first grade (Spring 2006) are listed in Table 12.

Table 12

Descriptive Statistics for Three Time Points (TBE-T)

	N	Mean	Std.	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PV1	111	11.9009	4.77104	-.567	.229	.035	.455
LC1	111	1.5315	2.01278	1.510	.229	1.896	.455
PV2	111	16.7748	3.86989	-.860	.229	1.142	.455
LC2	111	3.4955	3.74621	1.094	.229	.569	.455
PV3	111	19.4955	3.92167	-.112	.229	-.318	.455
LC3	111	7.1081	5.21249	.602	.229	-.394	.455
PC	111	10.5225	4.02232	-.283	.229	.025	.455

Note. N = 111. PV = Picture Vocabulary. LC = Listening Comprehension. 1 = data collected in Fall 2004. 2 = data collected in Spring 2005. 3 = data collected in Spring 2006. PC = Passage Comprehension collected in Spring 2006.

There were in total 111 students tested at all three time points. An examination of Table 12 indicates that the absolute values of skewness and kurtosis statistics are less than 2 and 7, respectively. This means that data are normally distributed. The statistics also demonstrate that as time changed, the mean of both tests increased accordingly. The variation of scores in the test of Picture Vocabulary decreased slightly while the

variation in Listening Comprehension increased. A correlation matrix (Table 13) was calculated before I could establish a model.

Table 13

Correlations Among Structural Equation Model Variables (TBE-T)

Variable	1	2	3	4	5	6	7
1. PV1	---						
2. LC1	.34***	---					
3. PV2	.56***	.47***	---				
4. LC2	.41***	.68***	.58***	---			
5. PV3	.45***	.46***	.76***	.55***	---		
6. LC3	.53***	.53***	.65***	.56***	.74***	---	
7. PC	.41***	.35*	.60***	.46***	.66***	.61***	---

Note. $N = 111$. *** $p < .001$.

Statistically significant correlations were identified between PV1 and LC1 ($p < .001$), PV2 and LC2 ($p < .001$), PV3 and LC3 ($p < .001$), PV1, PV2, and PV3 ($p < .001$) , and LC1, LC2 and LC3 ($p < .001$) with a magnitude of .34 or larger. Accordingly, same steps were followed as in analyzing data from SEI-E. This measurement model was found to be satisfactory fit with measurement error correlated with each other for the marker variable Listening Comprehension: $\chi^2 (3, N = 111) = 7.523$, $p = .06$, RMSEA = .10, CFI = .991, SRMR = .024. The adapted latent growth model fit indices are $\chi^2 (2, N = 111) = 2.863$, $p = .239$, RMSEA = .061, CFI = .994, SRMR = .06, indicating that there is no statistical significant difference between observed variance-covariance matrix and model implied variance-covariance matrix.

Table 14

Mean and Variance Estimation by LGM (TBE-T)

Parameter	Mean	z-value	variance	z-value
Intercept	.123	22.814***	.003	6.111***
Slope	.069	19.796***	.001	3.739***

Note. N = 121. * p <.05. *** p < .001.

Data from Table 14 imply a significant variation among students placed in TBE-T, whose initial level of English oral proficiency differed statistically. Similarly, the slope variance was also statistically significant at $\alpha = .05$ level. This finding suggests that the oral language growth rate varied among students in this particular group. The absence of a significant correlation between initial status and rate of change means that students' level of oral proficiency at the beginning of kindergarten did not predict their rates of subsequent change. The mean of the slope was estimated as .069, indicating a 6.9% increase each year of the percentage composite score. This can be illustrated as

$$\hat{Y}_{composite} = .123 + .069 * Time_i.$$

The second hypothetic model of oral language growth on reading comprehension was then established and estimated. Goodness-of-fit indices for this proposed model are: $\chi^2(2, N = 111) = 2.734$, $p = .255$, RMSEA = .057, CFI = .997, SRMR = .056, indicating a good model fit. Both factor loadings of the intercept and the slope on reading comprehension were estimated to be statistically significant ($z = 6.157$ and 4.042, respectively, $p < .05$). The standardized solution is presented in Figure 8.
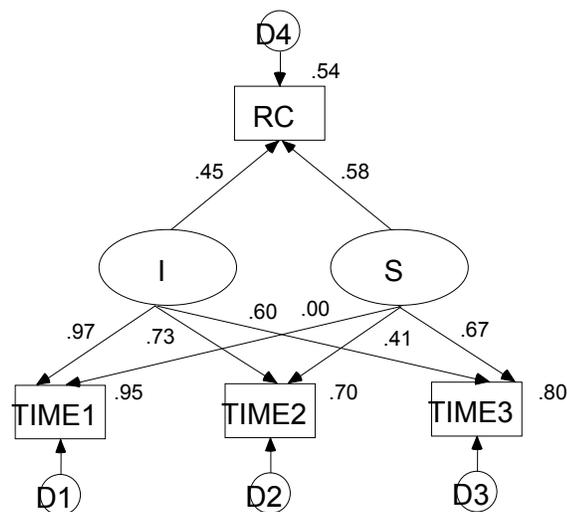
Figure 8. LISREL-derived structural equation model of prediction on reading comprehension with standardized regression (TBE-T).

The squared multiple correlation of reading comprehension was .54, indicating that approximately 54% of the variance of reading comprehension can be accounted for by the latent growth model. Based on the rules of thumb (Cohen, 1988), an r larger than .5 or r^2 larger than .25 will be considered a fairly large effect size. Accordingly, the standardized path coefficient of reading achievement is significantly and positively predicted by both intercept and slope. In addition, according to the complete standardized solution estimated by LISREL, the factor loading (regression coefficient) of the slope is larger than that of the intercept. This indicates that for this specific group, ELLs' performance on the standardized English proficiency test of reading at the end of first grade is most strongly predicted by the rate of oral language acquisition during kindergarten and first grade. Moreover, the higher level of oral English proficiency these

students held at the entry of kindergarten, the higher score they may obtain in English

reading test at then end of first grade.

Group Comparisons

Mean Structure

Given the multiple comparisons, Bonferroni alpha correction was established at

α = .0125.

SEI-E vs. SEI-T. A model comparison of two SEI groups was implemented in

terms of the mean structure of intercept and slope in the latent growth model (see Table

15). Model 1 is a baseline of the model comparison between the two groups. In Model 2

the mean of the intercept was constrained to be invariant across two groups. In Model 3

the mean of the slope was constrained to be invariant across two groups.

Table 15

Fit Indices and Chi-square Difference Statistics: SEI-E vs. SEI-T

Model	χ^2	df	$\chi^2_{(1) \, diff}$
1	4.270	3	
2	10.054	4	
3	10.196	4	
1&2			5.784**
1&3			5.926**

Note. df = degree of freedom. ** p <.01.

Model comparison between 1 and 2 yielded a chi-square difference larger than 3.84 (p <.01), indicating that the mean structure of the intercept between two groups statistically differed from each other. The chi-square difference test is also statistically significant at a level less than the pre-determined α between Model 1 and 3, indicating that the mean structure of the slope differed between the two groups. A close examination of Model 1 identified a value of .220 of the mean intercept in SEI-E and .248 in SEI-T, which suggests that on average students in SEI-T had a higher oral English proficiency level at the beginning of kindergarten as compared to students in SEI-E. Similar to the fact that their level of oral proficiency varied, the mean growth rate was found to be statistically heterogeneous (p < .0001), with SEI-T significantly lower than SEI-E (.075 and .089, respectively). This also implied that by the end of first grade, students in SEI-E (.398) have on average at an equal level of oral English proficiency as compared to students in SEI-T (.398).

TBE-E vs. TBE-T. A model comparison of two transitional bilingual groups was implemented in terms of the mean structure of intercept and slope in the latent growth model (see Table 16). Model 1 is a baseline of the model comparison between the two groups. In Model 2 the mean of the intercept was constrained to be invariant across two groups. In Model 3 the mean of the slope was constrained to be invariant across two groups.

Table 16

Fit Indices and Chi-square Difference Statistics: TBE-E vs. TBE-T

Model	χ^2	df	$\chi^2_{(1)\,diff}$
1	5.813	4	
2	7.831	5	
3	13.3	5	
1&2			2.018
1&3			7.487***

Note. df = degree of freedom. *** $p < .001$.

The model comparison of 1 and 2 yielded a chi-square difference of 2.018,

corresponding to a *p*-value of .04. By comparing with the pre-determined significance

level of .0125, the test between Model 1 and 2 resulted no statistically significant

difference. This indicates that the mean structure of the intercept between two groups did

not statistically differ from each other. A close examination of Model 1 identified a

value of .133 of the mean intercept in TBE-E and .123 in TBE-T, which suggests that on

average students in TBE-E had a same level of oral English proficiency at the time of

kindergarten as compared to students in TBE-T. However, the model comparison

between 1 and 3 identified a statistically significant difference ($p < .001$), suggesting

that students placed in the experimental group had a mean growth rate higher than that of

students in the control group in L2 oral acquisition (.081 and .069, respectively).

SEI-E vs. TBE-E. A model comparison of two experimental groups was

implemented in terms of the mean structure of intercept and slope in the latent growth

model (see Table 17). Model 1 is a baseline of the model comparison between the two

groups. In Model 2 the mean of the intercept was constrained to be invariant across two groups. In Model 3 the mean of the intercept was constrained to be invariant across two groups.

Table 17

Fit Indices and Chi-square Difference Statistics: SEI-E vs. TBE-E

Model	χ^2	df	$\chi^2_{(1)\ diff}$
1	7.219	4	
2	81.59***	5	
3	9.316	5	
1&2			74.371***
1&3			2.097

Note. df = degree of freedom. *** $p < .001$.

The model comparison between 1 and 2 yielded a chi-square difference larger than 3.84 ($p < .001$), indicating that the mean structure of the intercept between two groups statistically differed from each other. The chi-square difference test was not significant at a level of $\alpha = .01$ between Models 1 and 3, indicating that the mean structure of the slope did not differ. A close examination of Model 1 identified a value of .220 of the mean intercept in SEI-E and .133 in TBE-E, which suggests that on average students in SEI-E had a higher oral English proficiency level at the beginning of kindergarten as compared to students in TBE-E. However, although their initial level of oral proficiency varied, the growth rate was found to be homogenous (.089 and .081,

respectively). By the end of first grade, the average composite percentage score of L2

oral language is much higher for students in SEI-E (.398) than students in TBE-E (.295).

  SEI-T vs. TBE-T. A model comparison of two control groups was implemented in

terms of the mean structure of intercept and slope in the latent growth model (see Table

18). Model 1 is a baseline of the model comparison between the two groups. In Model 2

the mean of the intercept was constrained to be invariant across two groups. In Model 3

the mean of the slope was constrained to be invariant across two groups.

Table 18

Fit Indices and Chi-square Difference Statistics: SEI-T vs. TBE-T

Model	χ^2	df	$\chi^2_{(1)\ diff}$
1	2.864	3	
2	131.152***	4	
3	4.129	4	
1&2			218.288***
1&3			1.265

Note. df = degree of freedom. *** $p < .001$.

  The model comparisons between Model 1 and 2 yielded a chi-square difference

much larger than 3.84 ($p < .001$), indicating that the mean structure of intercept between

two groups differed statistically. A close examination of Model 1 identified a value

of .248 of the mean intercept in SEI-T and .123 in TBE-T, which suggests that on

average students in SEI-T held a higher oral English proficiency level at the beginning

of kindergarten as compared to students in TBE-T. Nevertheless, the comparison

between Model 1 and 3 did not yield statistically significant difference ($p = .21$),

indicating that the growth rate was homogeneous, with the slope of SEI-T slighter higher

than that of TBE-T (.075 and .069, respectively). By the end of first grade, the composite

percentage score of L2 oral language is much higher for students in SEI-T (.398) than

that of students in TBE-T (.261).

In summary, the group comparisons of mean structure of intercept and slope can

be presented in Figure 9.
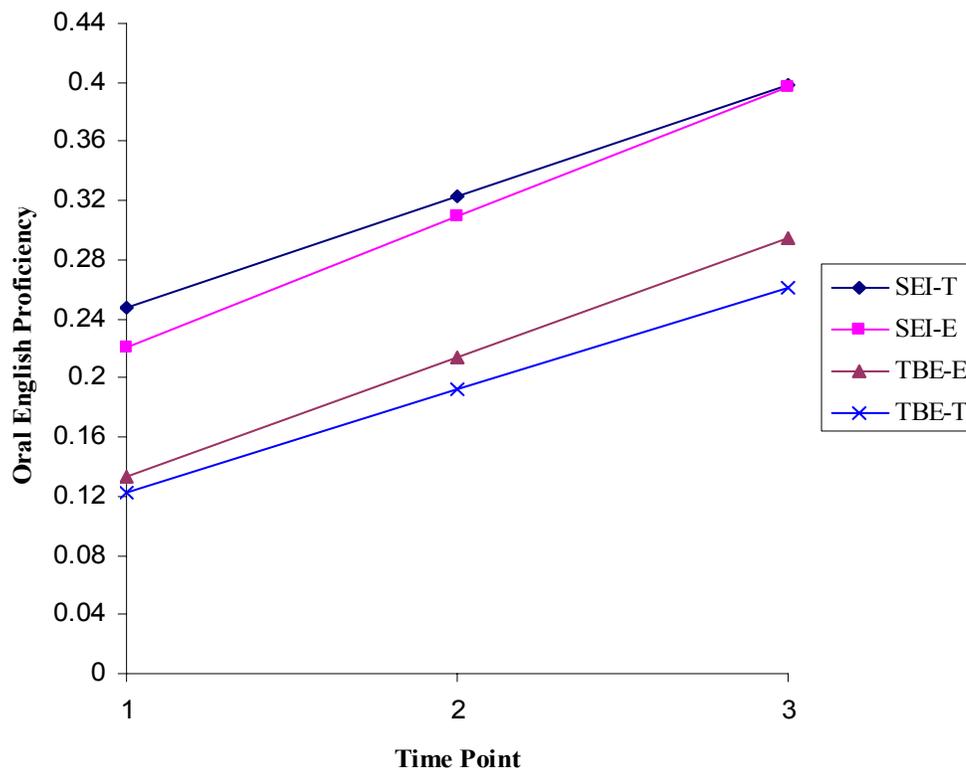
Figure 9. Growth rate of L2 oral proficiency for four program types.

Path Coefficients

Since different models were used to evaluate the predictive power of intercept

and slope, and no prediction was found in initial level or growth rate for the SEI-T group,

the only feasible comparison was conducted between TBE-E and TBE-T. Alpha was

established at .05.

TBE-E vs. TBE-T. A model comparison of two control groups was implemented

in terms of the mean structure of the intercept in the latent growth prediction model (see

Table 19). Based on the results of model investigation for the two groups, both the

intercept and slope were identified as significant predictors; therefore, there is a need to

compare the two path coefficients. Model 1 is a baseline of the model comparison

between the two groups. In Model 2 the path coefficient of the intercept was constrained

to be invariant across two groups. In Model 3 the path coefficient of the slope was

constrained to be invariant across two groups.

Table 19

Fit Indices and Chi-square Difference Statistics: TBE-E vs. TBE-T Hypothetic Model 2

Model	χ^2	df	$\chi^2_{(1)\ diff}$
1	8.639	4	
2	8.707	5	
3	8.643	5	
1&2			.068
1&3			.004

Note. df = degree of freedom.

Both of the model comparisons yielded a chi-square difference smaller than 3.84 ($p = .95$ and $.99$, respectively), indicating that the path coefficients difference of the intercept and slope on reading comprehension between two groups did not statistically differ from zero. This may suggest that on average the starting level, as well as the growth rate of English oral proficiency strongly predicts reading achievement in the same fashion among students in TBE-E and TBE-T groups. By the end of first grade, the mean passage comprehension scores among students in TBE-E (11.2) was higher than that of students in TBE-T (10.5) due to the fact that the former group had a higher L2 oral language proficiency. The following summary table (Table 20) displays any significant prediction of oracy on reading achievement for each instructional practice.

Table 20

Standardized Path Coefficients of L2 Oracy on L2 Reading Comprehension

Group	Intercept	Slope	RT1	RT2	RT3
SEI-E		.42	.53	.57	.19
SEI-T			.55	.44	.71
TBE-E	.51	.46			
TBE-T	.45	.58			

Note. p < .05.

Summary

The purpose of the present study was (a) to capture the growth trajectory and rate of oral English acquisition among these ELLs who started in kindergarten and continued through 1st grade. These students were tested in the beginning and end of kindergarten,

and at the end of first grade, respectively; therefore, three time points of data were analyzed; (b) to investigate the role of oral English development in acquiring English reading skills, and (c) to compare instructional models (experimental and control TBE and SEI) to identify the effectiveness of various program types that promote young ELLs' L2 language and literacy acquisition at early elementary level. With a total of 534 participants, this chapter reported data analysis in the following order: (a) descriptive statistics presentation and normality check; (b) establishment of measurement model with each time point set as a latent factor loaded on two observed variables: Picture Vocabulary and Listening Comprehension; (c) model evaluation and simplification; (d) latent growth model establishment and evaluation in each group; (e) hypothetical prediction model evaluation and revision in each group; and (f) model comparison in mean structure and factor loading across four groups. The following chapter will present discussion, limitations, recommendations, and conclusions.

CHAPTER V

DISCUSSION, LIMITATIONS, RECOMMENDATIONS, AND CONCLUSIONS

"English Oral language development for ELLs over the last twenty years has continued to remain in the shadows of literacy and mathematics, the mainstays of high-stakes testing" (Saunders & O'Brien, 2006, p. 42). A lack of studies addressing oral language acquisition issues has been consistently noted by researchers (Fillmore & Valadez, 1986; Saunders & O'Brien, 2006). Meanwhile, research has demonstrated that oral language is closely related to literacy development at a later time, which holds the same for first and second language acquisition (Proctor, Carlo, August, & Snow, 2005; Reese, Garnier, Gallimore, & Goldenberg, 2000). Schools and policy-makers have sought for a practice that will best develop the English proficiency of English language learners to facilitate their social up-mobility and academic purposes (Crawford, 2000). However, a panacea to educate all ELLs with diverse ethnic, linguistic, cultural and psychological backgrounds is unlikely to appear. Instead, the informative step is to explore the classroom practices that are being implemented in school districts and to enhance such practice accordingly based on students' needs. My study followed 534 native Spanish-speaking ELLs attending kindergarten through 1st grade and receiving four types of intervention respectively in order to capture the nature of their oral English developmental continuity and the impact of such development on reading comprehension. Perhaps my study will inform policy-makers and school districts on the various program models in relation to ELLs' oral language and literacy acquisition. Data

collected from this study were guided by four research questions. According to the previous chapters of literature review and data analyses, listed below are the comprehensive discussions in the order of each research question.

Discussion

Research Questions #1

What is the respective growth trajectory and rate of L2 oral language development among 1ˢᵗ grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

Students placed in four program types, i.e. enhanced Structured English Immersion, typical Structured English Immersion, enhanced Transitional Bilingual, and typical Transitional Bilingual, have consistently demonstrated a significant positive linear pattern of growth in their oral English development. That is to say, on average, equal gains have been identified during the kindergarten and first grade within each group. For students in SEI-E, the growth rate was .089, indicating that controlling for the initial level, in one unit change of time (grade level), their oral language proficiency increased by a .089 unit of the composite score of Picture Vocabulary and Listening Comprehension as measured by WLPB-R. For students in SEI-T, the growth rate was .075, indicating that controlling for the initial level, in one unit change of time (grade level), their oral language proficiency increased by a .075 unit of the composite of Picture Vocabulary and Listening Comprehension as measured by WLPB-R. For students in TBE-E, the growth rate was .081, indicating that controlling for the initial

level, in one unit change of time (grade level), their oral language proficiency increased by a .081 unit of the composite score of Picture Vocabulary and Listening Comprehension as measured by WLPB-R. For students in TBE-T, the growth rate was .069, indicating that controlling for the initial level, in one unit change of time (grade level), their oral language proficiency increased by a .069 unit of the composite score of Picture Vocabulary and Listening Comprehension as measured by WLPB-R.

The findings are supported by Saunders and O'Brien's (2006) synthesis that no matter what the program type, i.e. ESL, two-way immersion, or transitional bilingual, the students' oral language proficiency steadily increased at a constant rate as their grade level progressed, ranging from .26 (.052 unit) to .43 (.086 unit) on a five-point scale. The same conclusion i.e. that the measures of oral language calculated from oral narrative samples and norm-referenced English proficiency tests gave displayed robust grade-related change in L2 oral acquisition was drawn among Spanish-speaking ELLs (Hakuta, Butler, & Witt, 2000; Miller et al., 2006).

Research Question #2

Is there any difference in the trajectory and rate of L2 oral language development among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

As summarized earlier, students in each program model proceeded at a constant and significant growth rate. That is to say, regardless of classroom instruction, on average these ELLs' oral English proficiency increased in the same pattern.

In terms of acquisition rate, the model comparison between two experimental groups resulted in a significant difference between students' initial status of English oral proficiency. Students in SEI-E had an 8.7% of the composite score higher than that of students in TBE-E. However, regardless of their initial level, both groups of students have increased in their oral proficiency at the same rate. At the end of kindergarten, the difference between English-only practice and transitional bilingual practice in terms of students' English oral proficiency remained the same as it was at the beginning of kindergarten.

The model comparison between two SEI groups found statistically significant difference in students' initial level and growth rate of their oral English proficiency. Students in SEI-T group had a 2.8% of the composite score higher than that of students in SEI-E; however, students in the experimental group had a higher rate of English language acquisition as compared to their control peers. Even though the experimental group had a significantly lower level of English oracy at the beginning of kindergarten, by the end of first grade, they have already pared with the control group.

The model comparison between two TBE groups found that both groups of students had equivalent initial levels of oral English skills at the time of school entry; however, students in experimental TBE classrooms outperformed their control peers in language acquisition rate (.081 as compared to .069) after two years of intervention. According to classroom observation (using the TBOP instrument) conducted during the study, it has reported that the most frequent combination of Communication Modes observed was Aural-Verbal with that more frequently observed in the enhanced

classrooms (97.09%) as opposed to the typical practice classrooms (70.47%). In addition, in terms of Language of Instruction experimental TBE teachers were observed speaking English at a higher rate and Spanish at a lower rate during ESL teaching time than were control TBE teachers (Lara-Alecio, Irby, & Mathes, 2006). The 70 (Spanish)/30 (English) distribution of language of instruction in kindergarten and first grade has had a positive impact promoting students' English oral language development in TBE-E. The frequent use of academic English language by teachers in TBE experimental classrooms has also exposed ELLs to an academic-related learning environment where their language of use mirrored that of the teachers. Therefore, measuring their oral proficiency with WLPB-R, a more academic oriented assessment as recommended by researchers (Hakuta, Butler, & Witt, 2000), the growth rate can be compared across two groups to evaluate program effectiveness on their academic preparedness. Such information is more reliable with real classroom practice. The model comparison between two control groups has suggested that students in the English-only group had a higher initial level of oral proficiency than students in the transitional bilingual classrooms. However, they have acquired a similar amount of English oracy over the two years of placement in respective program models.

In short, TBE-T group developed at an average lower rate than the other three groups in oral English acquisition. That is to say, although the two SEI groups performed better at the end of first grade in their L2 oracy, if no intervention was implemented in TBE classrooms, students would remain constantly low in their English oral proficiency. Hence, based on my findings, growth rate is not independent of

language of instruction. This, however, stands inconsistently with Saunders and O'Brian's (2006) synthesis that independent of language of instruction, students develop at a same rate in oral language acquisition.

Research Question #3

Can students' initial level and rate of development in L2 oral proficiency predict L2 reading outcome among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

Because the original proposed prediction model did not fit, revised models with other latent factors were tested on the groups of SEI-E and SEI-T. For students receiving the SEI-E program, irrespective of initial level, the more amount of English oracy students acquired over the two years of placement in the program model, the higher score they achieved in English reading test at the end of first grade. In addition, some unknown factors of English oracy were also of significantly positive prediction on reading outcomes for this group. For those placed in SEI-T classrooms, interestingly, only the unknown factors of English oral proficiency had the significant association with reading outcome. For students placed in TBE-E classrooms, their performances on English reading tests were largely dependent on both the initial level and the amount of oral skills they acquired during the two years of intervention, with the initial level assuming stronger prediction. For students placed in TBE-T classroom, both the initial level and rate of growth were strong predictors of reading comprehension, with the rate

of growth being stronger. Again, language of instruction, and the amount of instruction in English in English oral language development mattered.

Existing literature has reported a strong effect of L2 oral language proficiency on reading achievement. Positive changes in vocabulary knowledge have a direct effect on listening comprehension, which has further significant effect on reading comprehension among fourth grade Spanish/English bilingual children (Proctor, Carlo, August, & Snow, 2005). Moreover, early oral English proficiency can also independently predict English reading at the 7th grade level among Spanish/English bilingual children (Reese, Garnier, Gallimore, & Goldenberg, 2000). The findings of my study are aligned with these conclusions that either the rate of growth, or both, or other factors of English oracy, strongly predict reading achievement among Spanish-speaking ELLs. Reading is a constructive process in that listeners or readers construct the meaning of the information they receive, which requires the knowledge of vocabulary (Snow, Burns, & Griffin, 1998). Accordingly, if a second language learner is able to aurally comprehend, he/she has a much greater chance of understanding textualized information.

For the two SEI groups there may exist some other factors that work together toward the total variance of reading achievement accounted by the prediction model. A possible explanation for those unknown factors can rapid automatized naming (Geva & Zadeh, 2006; Lesaux & Siegel, 2003), knowledge of vocabulary in L1 (Proctor, August, Carlo, & August, 2005), and listening skills in L1 (Proctor, August, Carlo, & Snow, 2006).

Research Question #4

Is there any difference in terms of the prediction of L2 oral proficiency upon L2 reading achievement among 1st grade Spanish-speaking ELLs after two years of placement in enhanced and typical transitional bilingual and structured English immersion program types?

Given the fact that different models were tested among the four program interventions, i.e. same model between two SEI groups, and between two TBE groups, and that neither initial level nor rate of growth in English oral language development predicted reading achievement for students in SEI-T, only comparison conducted was between TBE-E and TBE-T, which revealed no pronounced difference in terms of the prediction of students' oral skills at the time of kindergarten entry, or the amount of English oral skills acquired over two years on reading comprehension at the end of first grade. To summarize, for two TBE groups, the initial level appears to be an influential factor that determines their future literacy skills. This is supported by studies of oral proficiency and later literacy skills involving either preschool ELLs (Roberts & Neal, 2004) or mainly White children (NICHD, 2005). Moreover, my study also found that for these groups of students placed in classrooms where language of instruction was 70% or 80% in their first language, their reading comprehension skill as measured by standardized tests increased as their English oral proficiency increased over time. That is to say, for those students receiving instruction in a larger proportion in their first language, alterations in program models are needed to nurture English oracy at a faster rate of growth, which then in turn facilitates English literacy acquisition. The same

findings can be applied to students in SEI-E group that during the intervention, students have performed significantly in oral English acquisition, which also facilitates English literacy acquisition.

Other Findings

There are other intriguing findings that emerged from my study. First, it is important to note that for SEI-T, ELLs receiving the same service tended to develop homogeneously in their L2 oral skills even though their starting levels varied significantly. With 100% of the instruction time spent in their second language, these students acquired English at the same rate with the initial skills difference diminished as they moved to a higher grade level. However, with students receiving transitional bilingual services, and the English immersion intervention, both their initial skills and growth rate of L2 oral proficiency varied significantly.

Additionally, a significantly negative correlation was found between the initial level and rate of growth in English oracy in SEI-T group, whereas for the other three groups, the level of English oral proficiency did not associate with subsequent language acquisition. That is to say, a higher starting level does not necessarily guarantee a greater degree of oral acquisition. This means that the amount and the specific language of instruction matters in the development of oral English as a second language.

Recommendations

One of the findings derived from my study holds that native Spanish-speaking students develop at a constant acquisition rate in their oral English acquisition, even

though a difference is found between transitional bilingual typical practice classrooms and enhanced bilingual and structured English classrooms. However, considering the strong need to prepare ELLs for academic English participation, it is imperative to refer to English monolingual students as a baseline to evaluate instructional effectiveness. Previous studies have indicated a widening gap between ELLs and native English-speakers from 1st to 5th grade in oral proficiency on norm-referenced tests (Hakuta et al., 2000, sample B). Therefore, it is recommended that researchers compare students in Project ELLA with their English-speaking peers in the same school district or other school district that share similar characteristics so as to identify the gap, if there is such, between native and non-native English speakers. It is also suggested that follow-up studies be implemented beyond the whole project period as students move to late-elementary, middle school and high school levels to determine the long-term effect of program placement in structured English immersion enhanced/typical and transitional bilingual enhanced/typical classrooms.

As more academic language will be taught and more academic content instruction will be involved among these students as they progress to 2nd and 3rd grade, a similar longitudinal growth curve model is also feasible to explore whether there is a turning point where students' academic English language starts to accelerate. It is also recommended that for Spanish-speaking ELLs placed TBE programs, with on-going repeated measures on reading outcomes in English, a latent curve model be hypothesized to document the trajectory and rate of literacy acquisition among those students, along

with the progression of oral language proficiency and to testify where the threshold level

of bilingual proficiency that promotes English literacy begins (Cummins, 1979b).

Researchers have not only advocated exploring the long-term effect of academic

attainment on ELLs, but also have argued for the high-stakes testing at a state level that

will determine grade promotion/retention. Taking that into consideration, more studies

need to be conducted when high-stakes testing is administered as students enter 3rd grade.

To better inform the school district in which the study is being implemented, and other

similar large urban school districts, a close investigation and analysis of TAKS (Texas

Assessment of Knowledge and Skills, high-stakes testing mandated by Texas) results

will be powerful and informative.

Moreover, based on the findings that students were in heterogeneous transitional

bilingual as well as the English immersion intervention classrooms, case studies are

needed to identify individual differences in terms of their background (language

proficiency and home language usage), school environments, administrative perceptions,

and community characteristics that impact students' achievement (August, 2003;

Carrasquillo & Rodriguez, 1997). In addition, Reese, Goldenberg and Saunders (2006)

argued for the interplay of family, school, and communities, factors that significantly

influence ELLs' literacy outcome. They concluded in their study that "a school program

does not exist in a vacuum; consequently, program effects ought not to be studied

outside of the community and family contexts in which the program operates" (p. 381).

Therefore, case studies are in high demand to investigate the variation of characteristics

taking place in the community and family environments when comparing program

effectiveness. It is also recommended that an exploration of those unknown factors that are attributive to reading comprehension performance for students in two English immersion groups be conducted.

For the first two years of intervention, emphasis has rested on oral English acquisition. As Project ELLA continues, English literacy with content area instruction will dominate, along with content area in math, science and social studies and with larger amount of time in English language of instruction. In this case, it is expected that for native Spanish-speaking ELLs placed in TBE program, future studies attempt to explore those cross-linguistic transfer factors that are attributed to L2 literacy acceleration.

Limitations

My study took place in one large urban school district in the state of Texas. Random selection and assignment was achieved on the basis of school, rather than on the basis of individual students. As a result, results cannot be generalized beyond the school district setting, or to those that share similar characteristics in terms of students' demographics, resources, community, etc. In addition, the results of this study followed student's progress over two years, therefore, a generalization can not be reached beyond this period of time. Lastly, the measures of oracy consist of two subtests of a standardized language proficiency battery (which on the other hand, controlled the cross-tests difference); conclusions of oral proficiency were therefore based on the two aspects rather than from a broader concept.

Implications and Conclusions

Oral English Development

Oral English development, especially academic-oriented proficiency on English language learners is a neglected, yet influential, field that requires more rigorous scientific research. On the state level, it is widely used to determine program placement and advancement for students whose native language is not English. My study found striking similarities among four instructional practices (either L1 or L2 instruction) in which oral proficiency improved significantly and constantly over two years of placement. However, the magnitude differs in that the experimental bilingual group had a more steep growth trend than that of the control group that started at the same level. This supports the effectiveness of the project bilingual intervention in L1 instruction as well as the increased time dispersement in English (L2) component to expand students' vocabulary knowledge and enhance their listening comprehension skills in their second language. It is projected that the gap between these two groups of bilingual students will be widening at higher grade levels. For students receiving enhanced intervention in SEI classrooms with increased time spent on ESL components, even though they started at a significantly lower level in English oracy as compared to the control group, they have developed at a significantly higher rate than that of the control group. Pronounced differences in initial level but no difference in the growth rate between experimental SEI and TBE groups imply that learning through first language instruction does not impede the learning of a second language, which is supported both from theoretical (Cummins, 1979b) and research perspectives (Thomas & Collier, 2002). However, without

intervention in English, my study indicates that TBE-T will remain lagging behind all the students in other three program models who had a higher amount of oral English.

Role of English Oracy on English Reading

Although few studies have been conducted as to what extent oral development can be accelerated or how oral development is amenable to classroom instruction, there is growing recognition of the important role of oral language proficiency that contributes to reading comprehension among monolingual children (Freebody & Anderson, 1983; Nagy & Scott, 2000); among adolescent and adult ELLs (Laufer, 2003); and among young ELLs (DeLucca, 1998; Proctor, Carlo, August, & Snow, 2005). Moreover, certain aspects are more directly related to L2 reading, such as listening comprehension (Texas Education Agency, 2005b), and vocabulary knowledge (Coady, 1997; Manis, Lindsey, & Bailey, 2004; Proctor, Carlo, August, & Snow, 2005; Saville-Troike, 1984). My study has also identified the important role of L2 oral proficiency in receptive vocabulary knowledge and listening skills on the reading performance.

For the two TBE groups the initial level of oral proficiency is of a great concern on reading achievement. Quality Head Start and other preschool programs may be suggested to ensure the smooth transition from low income and language minority families to formal schooling (Whitehurst et al., 1994).

In addition, according to the results that students' performance on English reading comprehension test is strongly associated with the rate of growth in English oracy for students in SEI-E, TBE-T, and TBE-E (for this particular group initial level is slightly a more prominent predictor than the growth rate), effective intervention is

desired due to the fact that the growth of oral proficiency strongly impacts literacy achievement. A 'win-win' situation can be foreseen if emphasis of instructional practice is placed on vocabulary acquisition through aural-verbal activities, on academic-oriented language of use, and on communicative language teaching that engages students in listening and speaking (Carlo et al., 2004; Cummins, 1983; Cummins, 1984; Royer & Carlo, 1991). The findings that for ELLs in two experimental groups, the amount of L2 oral acquisition during early schooling significantly influences their L2 reading, one can speculate that the concurrent growth of their L1 may have indirectly functioned in complementary with L2 oral proficiency, which can be explained by the "common underlying proficiency" in two languages (see Cummins, 1981b), on L2 reading comprehension development during early-elementary grades. Again, this concurs with the existing notion that L1 instruction with appropriate ESL intervention can largely nurture the learning of reading in L2, which constitutes the cornerstone of all school success and social mobility in the U.S (Snow, Burns, & Griffin, 1998).

Program Effectiveness

Low reading comprehension in English among ELLs has been determined to be a problem and is largely due to limited English vocabulary (August, Carlo, Dressler, & Snow, 2005). Furthermore, Genesee (1999) theorized three early predictors of long-term academic achievement for ELLs in TBE: grade-level academic skills; reading and writing skills in L1; and oral language proficiency in L2. By dismantling the predictive power of oracy on reading proficiency, my study draws attention on the importance of facilitating ELLs' oral language development because the amount of oracy acquisition

determines subsequent literacy acquisition, which is a critical step for ELLs to survive in high-stakes testing and excel in academic learning in English. Miller et al. (2006) argued oral language is key to both the "characterization and the remediation of reading disabilities" (p. 40). As a result, it is imperative for these ELLs to master at least a modicum of English oral proficiency before literacy instruction takes place (Snow, Burns, & Griffin, 1998).

My study presented an evaluation on two years of longitudinal intervention and group comparisons and concluded that the enhanced classroom practices in both structured English immersion and transitional bilingual programs have proved to promote young ELLs' to have a significantly higher growth rate in academic oral language acquisition. Instructional practices have been evidenced to be effective in the following areas: (a) use of English during ESL intervention time, with aural-verbal communication activities more frequently implemented. The ESL strategies included visual scaffolding; realia strategies; flexible grouping; shared reading; leveled questions; manipulatives; modeled talk; vocabulary word dramatization; word walls; story reenactment; language experience approach, and free voluntary reading; (b) STELLA, one of the components of the intervention engaging students' in their native culture and therefore, motivating students' participation in the story read to them. Consequently, their vocabulary knowledge and aural skills have been developed; (c) the increased time of instruction spent on academic language and dense cognitive content in the experimental classrooms have exposed ELLs in academic learning. Due to the nature of the random selection and assignment of this study, initial equivalences could not be

established. In fact students in the typical English immersion classrooms were already equipped with a higher proficiency in L2 oral skills by the time of school entry than students in other groups. Nevertheless, the classroom intervention for two experimental groups has been successfully implemented such that students had the same opportunities to advance to a substantial amount in academic oral language. When comparing the two experimental groups (SEI-E and TBE-E), and two control group (SEI-T and TBE-T), it is evident that L1 instruction does not appear to be an inappropriate method as opposed to L2 instruction. To the contrary, for TBE-E, it is with a larger portion of L1 instruction that L2 oral acquisition associates positively with L2 reading comprehension.

Debate on "which language of instruction" has been overshadowing classroom practice, and researchers and practitioners have been seeking best practices to educate the ELL population (Crawford, 2000). Given the fact that the competency in L2 oral language is the first obstacle that ELLs have to overcome in order to compete with native English-speaking counterparts in academic settings, curriculum and instructional practices need to be well-planned and implemented. Meanwhile, choosing and implementing effective educational strategies for students with diverse linguistic and cultural backgrounds calls for an understanding of the available alternatives and a careful consideration of a district's goals and resources, as well as the needs and characteristics of its students (Garcia, 2005). The on-going implementation of Project ELLA will provide more information on instructional delivery that empowers language minority students and optimizes and equalizes their learning experiences for academic competitiveness.

Concluding Remarks

The findings reported in my dissertation have both theoretical and practical consequences. To date, no research study has attempted to document L2 oracy growth related to reading comprehension. The data from my study have presented a vivid picture of native Spanish-speaking ELLs' L2 oral developmental continuum, more importantly, not only the level of L2 oral language at the transition between pre-school and school, but also the ways that such a continuum feeds into later reading readiness among the children being served in structured English immersion and transitional bilingual classrooms. It compels us to reinvestigate the progressional nature of learning a second language in an academic-oriented situation and to reexamine the program effectiveness by looking into its practice on fostering ELLs' oral language development in English.

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