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Participation in Dual Language Immersion Programs: Using Theory of Planned Behavior to Predict Enrollment

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PARTICIPATION IN DUAL LANGUAGE IMMERSION PROGRAMS: USING THEORY OF PLANNED BEHAVIOR TO PREDICT ENROLLMENT

by

Andrea Call

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ABSTRACT

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Ajzen's theory of planned behavior (TPB) has been used to help predict and explain human behavior in specific situations. According to the TPB model, behavior is based on behavioral intention and the three determinants to behavioral intention include attitudes, subjective norms and perceived behavioral control. According to TPB, perceived behavioral control moderates the effect of behavioral intentions on behavior. Previous research has focused on the application of TPB to health behaviors, although some research has been done in educational situations. In addition, dual language immersion (DLI) programs are increasing in popularity, particularly in Utah. The Utah model begins in first grade, and follows a 50/50 model. Because of its researched based program, Utah has become a recognized leader in the field of DLI through its focus on sufficient instruction time, active cognitive engagement, motivation, continuity of learning, and cultural interaction. However, little is known about the factors that motivate

parents to enroll their children in DLI. The current study uses longitudinal survey methodology to evaluate how the TPB applies to parents' intentions and behavior of enrollment in DLI ($N = 74$). Approximately one third of participants took steps towards enrollment. Results indicate that parental attitudes significantly influenced behavioral intentions to enroll. In addition, for every one-unit increase in behavioral intentions, there was a 2.78 greater likelihood in enrollment. Limitations of sample size and difficulties of recruitment are discussed. Implications of the findings and areas for future research are also presented.

(81 pages)

PUBLIC ABSTRACT

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Many theories have been developed to help explain and predict human behavior. Ajzen's Theory of Planned Behavior (TPB) holds that behavior is based on behavioral intention, as well as attitudes, subjective (or social) norms, and perceived behavioral control. According to the TPB mode, perceived behavioral control moderates (or influences) the effect of behavioral intentions on behavior. Previous research has focused on the application of TPB to health behaviors, although some research has been done in educational situations. In addition, dual language immersion (DLI) programs are increasing in popularity, particularly in Utah. The Utah model begins in first grade, and follows a 50/50 model where students are taught half the day in English and half the day in the target language. Because of its researched based program, Utah has become a recognized leader in the field of DLI through its focus on sufficient instruction time, active cognitive engagement, motivation, continuity of learning, and cultural interaction. Yet, despite the popularity of DLI programs, little is known about the factors that motivate parents to enroll their children in DLI. The current study uses longitudinal survey methodology to evaluate how the TPB applies to parents' intentions and behavior of enrollment in DLI ($N = 74$). Only about one third of participants took steps towards

enrollment. Results indicate that parental attitudes significantly influenced behavioral intentions to enroll. In addition, for every one-unit increase in behavioral intentions, there was a 2.78 greater likelihood in enrollment. Limitations of sample size and difficulties of recruitment are discussed. Implications of the findings and areas for future research are also presented.

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CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

In an increasingly global economy, there is a growing need for multilingual and multicultural competency for individuals working in education, government, and business (Utah State Office of Education [USOE], 2010). Utah's business community has identified several uses of multilingualism including marketing and communications, customer care and support, relationship building, and business and human resource management (Roberts & Talbot, 2009). A lack of multilingual and multicultural skills in an increasingly global context may result in a loss of opportunity, capital, and production due to mismanagement of foreign relationships, poor public perception, and ignorance concerning the foreign market (Roberts & Talbot, 2009).

Utah is determined to successfully prepare students to fulfill these international business needs through their dual language immersion (DLI) plan, which currently focuses on Spanish, Portuguese, French, Chinese, and German immersion programs (Utah Dual Language Immersion, n.d.). These programs typically start in the first grade and utilize a 50-50 model, with half the instruction presented in the target language by one teacher and half in English by another teacher (Utah Dual Language Immersion, n.d.). Specific language proficiency goals are established for reading, writing, speaking, and listening in the target language for each grade level (Utah Dual Language Immersion, n.d.). Research has shown that participation in a dual language program in early elementary school allows students to master these proficiencies in one or more languages (Abbott, 2011). Moreover, younger language learners are better able to develop more

native like pronunciation in the target language (Abbott, 2011).

The Utah DLI program focuses on five so called "proven benefits" of participation in the program (Utah Dual Language Immersion, n.d.). These include second language skills, improved performance on standardized tests, enhanced cognitive skills, increased cultural sensitivity, and long term benefits relating to better preparation for involvement in the global community and job market (Utah Dual Language Immersion, n.d.). However, little research has been done to confirm these benefits.

Despite the growing popularity of DLI, little is known about what exactly motivates parents to enroll their children in these programs and if parents are aware of the potential benefits of participation in such programs. The theory of planned behavior (TPB) is a useful model of understanding, predicting, and changing human behavior and intentions based on attitudes, social pressures, and perceived control over the situation. The present research sought to test the utility of the TPB in explaining parents' intention to place their children in a DLI program. A thorough understanding of the factors that lead to parents' intentions and actual enrollment behaviors can help inform systematic interventions to promote and further develop the DLI program. Specifically, this knowledge can help the USOE better understand who is aware of the DLI program and how they can best market the program to more families in the state.

CHAPTER II

LITERATURE REVIEW

This literature review will provide existing knowledge regarding the TPB and provide examples of the theory's application in educational settings. In addition, the literature regarding DLI learning, its effectiveness, and the expected benefits of participation will be explored, with a specific emphasis on the Utah Model of Dual Language Immersion.

Theory of Planned Behavior

The TPB was developed by Icek Ajzen to help predict and explain human behavior in specific situations (Ajzen, 1991). The understanding provided by the model is useful in changing human behavior (Ajzen, 2012). The TPB was based on Ajzen and Fishbein's theory of reasoned action (TRA; Ajzen, 2012). The TRA holds that attitudes and subjective norms guide behavioral intention, which then determines behavior (see Figure 1).

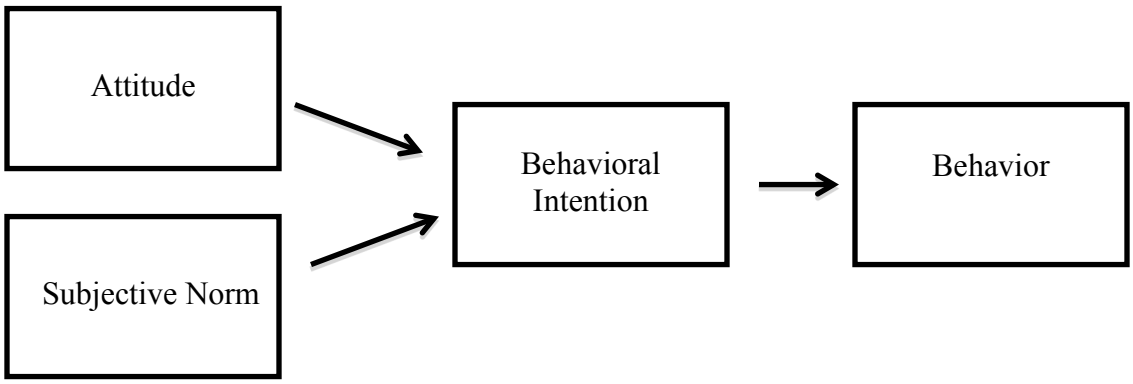

Figure 1. Theory of reasoned action (adapted from Ajzen, 1991).

However, Ajzen soon realized that the theory of reasoned action failed to fully account for behaviors over which individuals have limited volitional control (Ajzen, 2012). Thus, the TPB was developed with consideration for the amount of control individuals have over the behavior in question (Ajzen, 2012). According to the TPB model, there are three determinants to behavioral intention including attitudes, subjective norms and the added concept of perceived behavioral control (see Figure 2; Ajzen, 2012).

Attitudes

The first determinant of behavioral intention in the TPB consists of attitudes toward the behavior (Ajzen, 1991). This concept refers to the favorable or unfavorable beliefs an individual holds regarding the particular behavior in question (Ajzen, 1991). Attitudes usually involve an evaluation of the behavior and the resulting positive or negative consequences of the behavior (Ajzen, 2012). Consequently, individuals typically

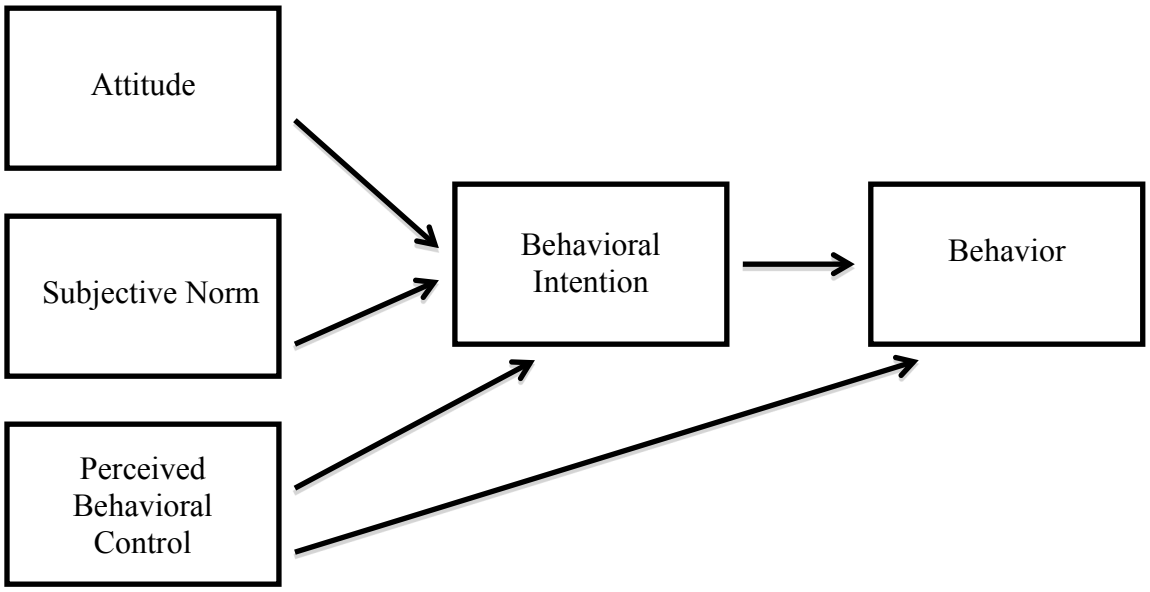

Figure 2. Theory of planned behavior (adapted from Ajzen, 1991).

form positive attitudes toward behaviors with desirable consequences and negative attitudes toward behaviors with undesirable consequences (Ajzen, 1991). It is important to remember that in the TPB, attitudes refer to attitudes toward a behavior, not a person or object (Ajzen, 1985).

Subjective Norms

The second determinant of behavioral intention according to the TPB is subjective norms, or perceived social pressure regarding the performance of the behavior (Ajzen, 1991). This social pressure comes from one or more different social referents (either individuals or groups), who either approve or prohibit engaging in a particular behavior (Ajzen, 2012). A key component of a subjective norm is an individual's motivation to comply with the referent in question (Ajzen, 2012). The greater the motivation to comply, the greater influence the subjective norm will have on behavioral intention (Ajzen, 2012). It is important to note that a subjective norm is conceptually different than an attitude, even though the two may be similar in practice (Ajzen, 2012). For example, an individual may hold a favorable attitude towards a particular behavior (e.g., smoking), yet at the same time feel social pressure from a referent (e.g., spouse) to not perform the behavior (Ajzen, 2012).

Perceived Behavioral Control

Perceived behavioral control is defined as "the extent which people believe that they can perform a given behavior if they are inclined to do so" (Ajzen, 2012, p. 446). The idea of perceived behavioral control is based on Albert Bandura's research on self-

efficacy (Ajzen, 2012). According to this research, self-efficacy is an individual's judgments regarding their ability to complete a task (Ajzen, 1991). Moreover, research on self-efficacy has shown that these beliefs influence the activities an individual chooses to participate in, individual preparation for that activity, effort expended during the activity, as well as emotional reactions to the activity (Ajzen, 1991). Ajzen's concept of perceived behavioral control highlights these ideas and especially focuses on the beliefs individuals hold about resources or the lack thereof to facilitate or inhibit their successful performance of the behavior in question (Ajzen, 2012).

Behavioral Intention

Fundamental to the TBP is the idea that behavior is guided by intentions (Ajzen, 2012). Behavioral intention refers to the likelihood that an individual will attempt to perform the behavior in question or an indication of the effort an individual is willing to put forth to perform the given behavior (Ajzen, 1985, 1991). According to the TPB, behavioral intention is the immediate antecedent of behavior and is composed of attitudes, subjective norms, and perceived control over the behavior in question (Ajzen, 2012). Generally speaking, the more positive the attitude and subjective norm and the greater the perceived behavioral control, the greater the behavioral intention will be to perform the behavior (Ajzen, 1991). However, the relative importance of attitudes, subjective norms, and perceived behavioral control on intentions may vary across situations and contexts depending on the behavior in question (Ajzen, 1991). Behavioral intentions are not the same as actually engaging in the behavior in question (Ajzen, 2012).

Behavior

In the TRA, behavior is influenced by behavioral intentions (Ajzen, 2012). However, in the TPB, behavior is influenced by perceived behavioral control as well as behavioral intentions (Ajzen, 1991). More specifically, according to Ajzen, the degree of perceived behavioral control an individual possesses moderates the effect of behavioral intentions on behavior (Ajzen, 2012).

The TPB has been heavily utilized in research and may be considered the most popular model of reasoned action (Ajzen, 2012). Research has evaluated the TPB model in terms of health behaviors (including diet and exercise), blood donation, illicit drug use, energy conservation, use of public transportation, and safe sex practices (Ajzen, 2012). This research can then be used to develop more effective interventions that produce socially desirable behavior changes, although research on these interventions is still limited (Ajzen, 2012). The TPB model provides several points of intervention for changing behavior, including targeting attitudes, subjective norms, and/or perceived control (Ajzen, 1991).

More specifically, research has looked at the TPB in terms of teaching practices, parent involvement, and student choices in higher education (Bracke & Corts, 2012; Cheng & Chu, 2014; J. Lee, Cerreto, & Lee, 2010). For example, the TPB has been used to explain secondary education teachers' decisions regarding the use of educational technology, specifically the use of computers to present lessons, in their Korean classrooms (J. Lee et al., 2010). According to this research, attitudes, subjective norms, and perceived behavior control were all significant predictors of behavioral intention (J.

Lee et al., 2010). However, statistical analyses revealed that attitudes had twice the predictive effect of subjective norms and three times the effect of perceived behavioral control (J. Lee et al., 2010). This study was important because it emphasized attitudes as one of the primary predictors of behavior intention and pointed to the necessity of changing attitudes in order to change behavior (J. Lee et al., 2010). Moreover, Bracke and Corts looked at parent involvement in their child's education in order to better understand perceived barriers to involvement based on the TPB. They found that essentially all parents had positive attitudes toward involvement in their child's education and reported similar barriers such as transportation issues, work schedules, and child care (Bracke & Corts, 2012). Parents also universally reported positive intentions to be involved (Bracke & Corts, 2012). The difference, however, between actual involvement in education related to social norms and whether parents regarded other similar parents as involved or not involved (Bracke & Corts, 2012). This study was significant in its emphasis on not only perceived behavioral controls but also social norms as determinants of behavior (Bracke & Corts, 2012). In addition, Campbell (2010) used the TPB to gain insight into both students, parents, and teachers of elementary-aged students in Florida on the inclusion of special needs students in the classroom. His findings suggested that the TPB applies to this situation and that individuals with more positive attitudes towards students with disabilities and more perceived behavioral control are more likely to participate in inclusion behaviors (Campbell, 2010). Finally, Cheng and Chu tested the TPB's usefulness in explaining undergraduate business students' intentions to enroll in an ethics course. Their results indicated that perceived behavioral control had a significant

effect on behavioral intentions (Cheng & Chu, 2014). In addition, Cheng and Chu asserted that the TPB was more effective in predicting behavior than was Bandura's social cognitive theory.

No research has been conducted regarding the TPB and DLI programs. The remainder of this literature review focuses the purpose, structure, benefits, and criticisms of DLI programs, with a particular emphasis on the Utah Model of DLI.

Dual Language Immersion Programs

DLI programs initially began in Canada to provide Canada's English speaking students an opportunity to learn French, Canada's other official language (Genesee, 1994). In 1965, a group of English-speaking parents in Montreal, started a grassroots effort to teach French as a second language in elementary school (Leite, 2013). The focus of this program was complete immersion in French beginning in kindergarten with gradual exposure to English in later grades (Leite, 2013). The parents worked with scholars from McGill University and the program was successful in revitalizing the use of French among the younger generation (Leite, 2013). DLI education began in the United States in the latter half of the twentieth century when Cuban parents in Miami, Florida, helped open the first two-way Spanish DLI program (Leite, 2013). The program included both native English and native Spanish speakers (Leite, 2013). Later, in 1971, the first DLI program was established in Culver City, California based on the model used in Montreal, with target language immersion first followed by gradual exposure to English (Leite, 2013). Soon other programs began emerging in larger cities in California

and Florida yet typically such programs functioned independently as a single program in a single school (Leite, 2013).

Regardless of the location or target language, dual language education typically consists of two languages being used in the same classroom for instruction (Alanís & Rodríguez, 2008). Programs typically divide the day among the two languages, expecting students to communicate in one language at a given time (Palmer, 2007). The two most common ways of doing so include the 50/50 model and the 90/10 model (Leite, 2013). In the 50/50 model, language instruction is split evenly throughout the day (Lindholm-Leary, 2004). In the 90/10 model, however, the amount of instructional time varies depending on grade level (Lindholm-Leary, 2004). In early grades, 90% of time is spent teaching in the target language and only 10% in English. As students progress through elementary school, this shifts to 80/20 in second and third grade and 50/50 in fourth and fifth grade (Lindholm-Leary, 2004). Howard, Olague, and Rogers (2003) explained that ultimately both programs are effective and administrators who know the students and community needs best are most qualified to make these decisions.

After reviewing the literature on DLI education, Genesee (1994) concluded that "immersion programs are the most effective approach available to second language teaching in school settings" (p. 9). These alternates include traditional second language learning and English as a Second Language (ESL) instruction (Genesee, 1994). Moreover, DLI programs are designed to meet three goals of "bilingualism/biliteracy, cross-cultural understanding, and high academic achievement for all" (Palmer, 2007, p. 752). Bilingualism/biliteracy refers to individuals who speak, write, and read two or more

languages on a daily basis (Leite, 2013). Many DLI programs are designed to assist English language learners in gaining proficiency in English, with a secondary emphasis on English proficient students learning a second language (Alanís & Rodríguez, 2008). The second goal, cross-cultural understanding, refers to the process of creating a bridge from a student's own culture to that of their classmates in order to increase understanding (Palmer, 2007). DLI programs seek to develop a safe atmosphere where students learn another language and gain knowledge about another culture (Alanís & Rodríguez, 2008). Including students of both cultures increases the likelihood that positive cultural experiences will occur in the classroom (Barden & Cashwell, 2013). Thus, language is used as a carrier of culture; it is not until language fluency is achieved that true cultural understanding can be achieved (Pitkin, 1972). The third goal of high academic achievement includes achievement for all students in the school. Research has demonstrated that students participating in a DLI program perform as well or better than their English-only speaking peers on state achievement tests of reading, mathematics, and science (Alanís & Rodríguez, 2008). Moreover, other research emphasizes that minority language students' standardized tests scores are generally higher for students who participate in DLI programs (Palmer, 2007).

Others, however, remain skeptical of dual language programs and identify several criticisms of the model. Rossell and Baker (1996) conducted a review of several studies of bilingual education and asserted that the effectiveness of such programs are inconclusive and vary according to program structure, length, and focus. Rossell and Baker compared DLI, ESL, submersion bilingual, maintenance bilingual, and transitional

bilingual programs. The meta-analysis focused effectiveness of the programs for limited English speakers in reading, language, and math achievement scores (Rossell & Baker, 1996). In reading, dual language programs were the most successful while in language there was no difference between the dual language program and a transitional bilingual program (Rossell & Baker, 1996). In math no difference was reported among any of the programs (Rossell & Baker, 1996). Rossell and Baker also noted that in comparing only dual language and ESL programs, dual language programs were more effective in all studies reviewed for reading, yet no difference was noted in language or math. Thus, based on Rossell and Baker's research, dual language programs are most effective in improving reading achievement, but less so in other academic areas.

Other researchers cite the necessity of resources and inequalities regarding social power as criticism of DLI education (Faltis, 2011; Fitts, 2006; Valdés, 1997). First, Faltis discussed the financial resources needed to implement and maintain an effective immersion program. Moreover, even when financial resources are available, finding highly qualified teachers and acquiring appropriate curriculum materials in the target language may be problematic (Faltis, 2006). In addition, parental involvement and community support are necessary for an immersion program's success, yet this support may be difficult to find in all geographical areas (e.g., rural areas; Faltis, 2006). Critics asserted that before implementing a new immersion program, these and other issues of feasibility must be addressed (Fitts, 2011). Moreover, major criticisms revolve around concerns regarding social power and the cultural capital of bilingualism. Fitts argued that a focus on the equality of the two language groups involved in a DLI program may

unintentionally promote inequality by providing an already advantaged group with additional advantages. Some have argued that bilingual education is "a modern day form of segregation" (Flatis, 2011, p. 93). Valdés explained that bilingualism has been advantageous to minority groups. If majority groups also obtain proficiency in a second language, this advantage will be lost for minorities (Valdés, 1997). Accordingly, Valdés asserted that language can be either an advantage or a disadvantage depending on an individual's power position in the community, and that DLI programs must consider these cultural, social, and economic ramifications for all students.

Utah is a recognized leader in the field of DLI (Leite, 2013). Utah's success is largely based on the collaboration among government officials, school personnel, businesses, and community members in support of the dual langue immersion program (Leite, 2013). Schools in Utah began preparation for a DLI program and the first program began in Alpine school district in 1999 (Leite, 2013). Other schools slowly joined in the movement and nearly ten years later, in 2008, Utah became the first state to legislate funds specifically for a DLI program (Leite, 2013). This money was available for the 2009-2010 academic year and included funds for DLI programs for 1,400 students in 25 schools (Leite, 2013). Since that time, the DLI program has grown in the state of Utah, with an estimated 32,000 students participating in dual language at 162 schools throughout the state in the 2016-2017 school year (G. Roberts, personal communication, July 25, 2016). Currently, schools across the country are looking to replicate Utah's thriving DLI program (Leite, 2013). Despite the popularity of this program, no published research has been conducted to explain the increase in participation and factors that

influence enrollment in these programs in Utah.

The Utah model is research-based and standardized to allow for replication throughout the state (Leite, 2013). The program was developed based on research in second language acquisition and immersion education (Leite, 2013). According to Leite, the key foci of an immersion program include its additive bilingualism and its content-based instruction. Additive bilingualism refers to the idea that second language learning is a complimentary process to learning a primary language, rather than a competing factor in educational achievement (P. Lee, 1996). Content-based instruction means academic content (e.g., math) is taught in the target language (Leite, 2013). The Utah model successfully integrates both of these components in its DLI program (Leite, 2013). Moreover, the Utah model sought to fulfill the best practices set forth by Met (2004), who argued that best practices for language learning requires time, cognitive engagement, motivation, continuity of learning, and cultural interaction.

Utah's DLI program currently offers instruction in Spanish, French, Portuguese, Chinese, and German (Utah Dual Language Immersion, n.d.). According to Leite (2013), the growing power of countries such as Brazil and China necessitate the need for Americans to develop both cultural and linguistic skills of these countries to be successful in the international workforce. The program's focus on dual immersion highlights the benefits to two groups, both English speakers and English language learners (Utah Dual Language Immersion, n.d.). The Utah DLI program seeks to maintain a minimum of a 2:1 ratio of native English speakers to native speakers of the target language (Utah Dual Language Immersion, n.d.). The program utilizes a 50/50 model (or

partial immersion) in which students receive instruction from one teacher in English for half of the day and instruction in the target language from a second teacher the other half of the day (e.g., Chinese; Utah Dual Language Immersion, n.d.).

Utah's model of immersion is unique in that it focuses on immersion from early elementary school through high school graduation. According to Leite (2013), this continuity is essential to a student's long term proficiency in the target language. Met (2008) explained that middle school immersion programs are a critical component of second language acquisition and retention. Without a continuous program, students will struggle to maintain language skills and their high school foreign language classes will be less effective, particularly if they take a beginning language class with students who have not taken the language previously (Met, 2008). Consequently, in the Utah model, participation in the DLI program typically begins in first grade and follows a set curriculum (Utah Dual Language Immersion, n.d.). From first to third grade, children receive instruction in the target language in math, science, and social studies and instruction in English in English language arts, as well as reinforcement of material taught in the target language (see Figure 3; Utah Dual Language Immersion, n.d.).

From fourth to fifth grade, instruction in math and social science is changed and given primarily in English, with practical application of these concepts carried out in the target language (see Figure 4; Utah Dual Language Immersion, n.d.). In the sixth grade, instruction in social science is again received in the target language (see Figure 5; Utah

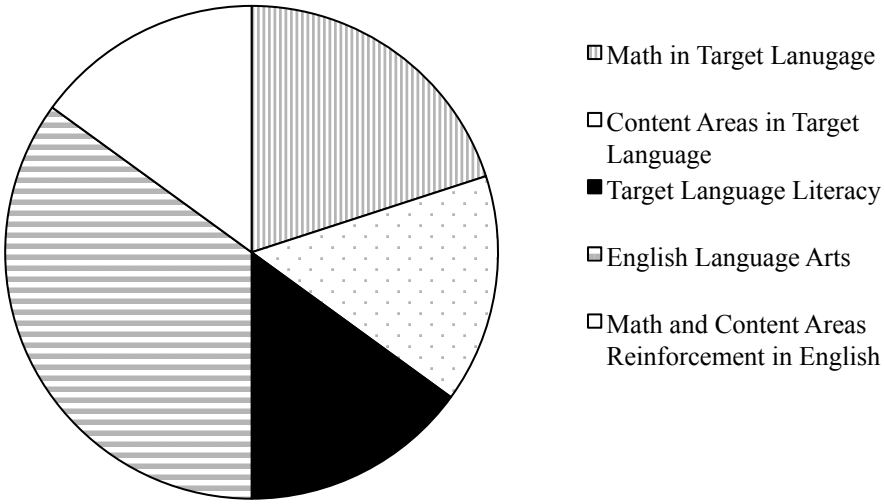

Figure 3. Dual language instructional time: Grades 1-3 curriculum (adapted with permission from Utah Dual Language Immersion, n.d.).

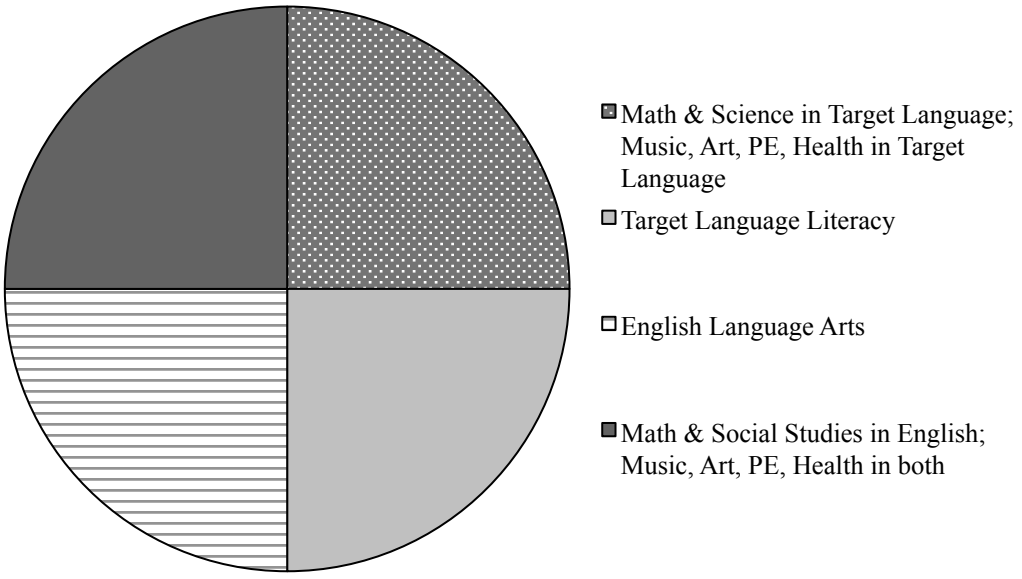

Figure 4. Dual language instructional time: Grades 4-5 curriculum (adapted with permission from Utah Dual Language Immersion, n.d.).

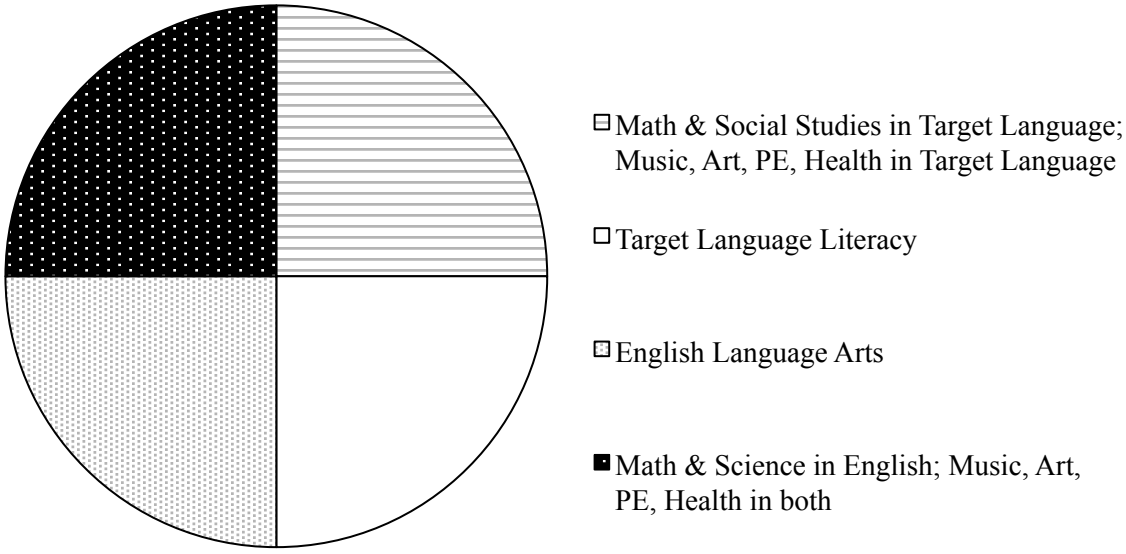

Figure 5. Dual language instructional time: Grade 6 curriculum (adapted with permission from Utah Dual Language Immersion, n.d.).

Dual Language Immersion, n.d.). From seventh to ninth grade, one course is offered in the target language (Utah Dual Language Immersion, n.d.).

Beginning in either the ninth or tenth grade, students are expected to enroll in an Advanced Placement language course for the target language and successfully pass the Advanced Placement exam (Utah Dual Language Immersion, n.d.). In grades 10 through 12, students can receive university level coursework in association with six major universities throughout Utah (Utah Dual Language Immersion, n.d.). Alternatively, some students may choose to study a third language during high school (Roberts & Talbot, 2009).

The Utah model identifies five potential benefits of participation in the DLI program including second language skills, improved performance on standardized tests,

enhanced cognitive skills, increased cultural competency, and long term benefits including increased preparation for a global job market where multilingual and multicultural skills are needed (Utah Dual Language Immersion, n.d.). Research has demonstrated that dual language programs fulfill some of these goals, however literature still lacks specific data from the Utah DLI program. For example, studies have demonstrated that cognitive skills such as increased problem solving capabilities, pattern recognition, divergent thinking, and greater cognitive flexibility are associated with bilingualism (Tedick, 2012). The length of time a student spends in DLI programs is positively correlated with overall academic achievement (Alanís & Rodríguez, 2008). Met (2001) found that students in the United States with access to language education are more likely to have higher scores on standardized test of both reading and mathematics, even for students coming from high-poverty backgrounds. In addition, Alanís and Rodríguez found that students participating in a DLI program in Texas consistently outperformed other students on state standardized tests in reading, mathematics, and science over a five year period. Moreover, Met (2004) cited economic incentives, increased diplomacy, improved national security, greater humanitarian aid, and stronger international relations as long-term benefits associated with second language learning.

No known research, however, exists on the cultural competency outcomes of DLI participation. The USOE define\d this increased cultural competency as cultural sensitivity, with immersion students being more aware of and showing more positive attitudes toward cultural others (Utah Dual Language Immersion, n.d.). According to Leite (2013), immersion increases sensitivity to both the native culture and the immersion

culture, both of which can lead to increased cultural competence. However, the USOE does not provide specific instructions or descriptions of what is being done to improve cultural competence beyond simple immersion. There is no specific information on any curriculum being used by teachers or students at this time, which may make the emphasis on cultural competency as a benefit of DLI participation less significant.

Research Questions and Hypotheses

The present research seeks to build on previous research to examine how the TPB explains and predicts participation in a DLI program. Specific research questions and hypotheses for the current study included the following.

RQ1: Do attitudes, subjective norms, and perceived behavioral control predict behavioral intention in a sample of parents with young children?

H1: It is hypothesized that based on the theory of planned behavior, attitudes, subjective norms, and perceived behavioral control will predict behavioral intention in this sample.

RQ2: How does perceived behavioral control influence the relationship between parents' intentions and behaviors of enrolling their child in a dual language immersion program?

H2: Parents' behavior of enrolling their child in a dual language immersion program will be partially moderated by the level of perceived behavioral control they have over participation in the program (i.e., their awareness of the program and resources they believe are available to enable their participation). It is hypothesized that higher levels of perceived behavioral control will strengthen the predictive power of the relationship between behavioral intention and engaging in the behavior.

CHAPTER III

METHODS

Participants

Participants for the study were parents from Cache Valley, Utah, who had a child enrolled in Kindergarten for the 2015-2016 academic year in either Logan City or Cache County School Districts. A total of 112 participants accessed the survey. Only 74 qualified for participation and completed the survey. The additional 40 participants did not qualify: 2 were not parents, 2 were duplicate responses, and 33 did not complete the survey in its entirety. One survey was completed after the recruitment deadline; this survey was still included in analysis. The final sample included for the purposes of this study was 74. Contact was attempted for all 74 participants; however, two did not provide contact information, information was outdated or incorrect for four more, and seven did not respond. A total of 61 participants responded to the follow up.

Respondents in the study were primarily White American (n = 72), married (n = 63), and mothers (n = 63; see Tables 1 and 2). For the kindergarten students, all 74 were born in the U.S., the majority were the biological child (n = 70) of the parent who completed the survey, White American (n = 72), male (n = 43, 58.1%), and native English speaker (n = 73; see Table 2). Demographic data collected on the families who participated in the survey show that the majority of both mothers and fathers self-identified as White American, were born in the U.S. and spoke English as their first language (see Tables 1 and 2 for demographics). The majority of both fathers (n = 24)

Table 1

Respondent Information.

Variable	*n*	%
Respondent		
Mother	63	85.14
Father	4	5.41
Parent	5	6.76
Stepmother	1	1.36
Grandmother	1	1.36
Relation to kindergartener		
Biological child	70	94.59
Step child	1	1.36
Another child that I have guardianship of	2	2.70
Did not specify	1	1.36
Marital status		
Single (never married)	2	2.70
Married	63	85.14
Living together (not married)	3	4.05
Divorced	6	8.10

and mothers (n = 32) had obtained a bachelor's degree. Nearly all parents had traveled both outside of Utah and outside the U.S. (see Table 2).

Information regarding participants' family was also collected. The majority (n = 50) had at least two additional children in addition to the child currently in kindergarten. These siblings ranged in age from 2 weeks to 16 years. Slightly more than half (n = 29) of these siblings attended school. However, only a small portion (n = 4) of siblings were currently or had previously participated in a DLI program. Across all family situations, only 2-8% of siblings were currently enrolled in a DLI program, while 4-6% had been enrolled in the past.

Table 2

Participant Demographics

	Fathers		Mothers		Child	
Variables	*n*	%	*n*	%	*n*	%
Ethnicity						
White/European American	72	92.30	72	92.30	72	91.14
Hispanic/Latino	4	5.12	3	3.85	4	5.06
Black/African American	0	0	1	1.28	2	2.53
American Indian/Native Am.	2	2.56	1	1.28	1	1.27
Other	0	0	1	1.28	0	0
Country of birth						
United States	72	97.30	72	97.30	73	98.65
Canada	1	1.35	1	1.35	0	0
Mexico	1	1.35	0	0	0	0
Armenia	0	0	1	1.35	0	0
Other	0	0	0	0	1	1.35
Education						
Did not graduate high school	1	1.35	1	1.35	-	-
High school graduate/GED	12	16.22	10	13.51	-	-
Associate/technical degree or certificate	8	10.81	12	16.22	-	-
Some college, no bachelor's degree	14	18.92	13	17.58	-	-
Bachelor's degree completed	24	32.43	32	43.24	-	-
Graduate degree completed	14	18.92	5	6.76	-	-
Currently in college	1	1.35	1	1.35	-	-
Native language						
English	73	98.65	73	98.65	73	98.65
Spanish	1	1.35	0	0	0	0
Other	0	0	1	1.35	1	1.35
Second language						
No	46	62.16	63	85.14	69	93.24
Yes	28	37.84	11	14.86	5	6.76
Third language						
No	73	98.65	73	98.65	0	0
Yes	1	1.35	1	1.35	0	0
Travel						
Outside Utah	73	98.65	74	100.0	-	-
Outside United States	54	72.97	51	68.92	-	-

Procedures

An online Qualtrics survey was developed to collect baseline data for the current study. Approval was sought and obtained from the Utah State University Institutional Review Board (Protocol #6702). Participants were recruited through social media, community flyers, and by word-of-mouth through personal and professional networks. The survey was open to participants from August 8, 2015 until March 8, 2016. Follow up texts and phone calls were made between March 7 and March 26, 2016. Participants were entered into a drawing for one of five $10 Visa Gift Cards as incentive for their participation.

Measures and Covariates

Demographics

Basic demographic information was obtained from parents at the beginning of the survey. Information collected included country of birth, ethnicity, education levels, and languages spoken by the parents. In addition, information was collected regarding the school the child attended at the time of the survey, ages and gender of any siblings, the school each sibling attended, and if any siblings currently or previously participated in the dual language program. The demographic questionnaire was created for this study based on demographic information needed to explain the sample of interest (see Appendix A). Each participant was assigned a unique identifier to protect the confidentiality of participants and allow for follow up.

Attitudes

Parents' attitudes towards dual language were directly assessed through questions related to their overall evaluations of DLI. Parents rated nine statements on a 7-point bipolar attitude scales including good-bad, pleasant-unpleasant, worthless-valuable, and so forth. (Ajzen, Joyce, Skeikh, & Cote, 2011). This measure was constructed for this study based on existing research on the TPB (Ajzen et al., 2011; Francis et al., 2004). As such, sentence stems regarding participation in a DLI program were created and matched with various adjectives including the good-bad and worthless-valuable rating. For example, one item included the statement "My child's experience in a DLI Program would be ____," with a scale ranging from *very negative* (1) to *very positive* (7; see Appendix B for all items). The measure was piloted with three parents of kindergarteners to determine readability and reliability, although other measures created for TPB studies have Cronbach's α ranging from .81-.84 (Cheng & Chu, 2014; Cheon, Lee, Crooks, & Song, 2012; Valtonen et al., 2015). Feedback regarding the piloted measure focused on increasing readability, correcting typos, and page layout. For the present sample, the Attitudes scale had a Cronbach's alpha of .965. The scale has a mean of 5.48, and standard deviation 1.51. The scale ranged from 1 to 7 with higher scores indicating more favorable attitudes towards participation in DLI. The skew is -3.27 and the kurtosis is 0.32. The scale was calculated as a mean for people who responded to at least seven items. There were seven items included on the attitudes scale that required reverse scoring. See Table 3 for details for all scales.

Table 3

Scale Reliabilities

Scale	α	Range	*M*	*SD*	Skew	Kurtosis
Attitudes	.965	1.00 - 7.00	5.48	1.51	-3.27	0.32
Social norms	.763	1.67 - 6.67	4.09	1.07	0.63	-0.50
Perceived behavioral control	.893	1.82 - 7.00	4.80	1.33	-0.49	-0.91
Behavioral intentions	.981	1.00 - 7.00	4.02	2.27	0.2	-2.66
Benefits of DLI	.962	1.14 - 7.00	6.97	1.22	-1.58	0.98
Advantages of DLI	.908	1.00 - 7.00	4.34	1.31	-0.55	1.15

Subjective Norms

Subjective norms were directly assessed through nine questions that related to parents' social perceptions of enrolling their child in a DLI program. In addition, the measure was designed to assess parents' views of social pressure to participate in a DLI program (see Appendix C). This measure was constructed for this study based on existing research on the TPB (Ajzen et al., 2011; Francis et al., 2004). Sentence stems typical to TPB measures were taken and adapted to refer to enrollment in a DLI program and anchored on an agreement scale (Ajzen, 2002). One example of a survey item to measure subjective norms is "People whose opinions I value want me to enroll my child in a DLI Program," with a rating scale of *strongly disagree* (1) to *strongly agree* (7). The measure was piloted on three parents of kindergarteners. Feedback regarding the piloted measure focused on increasing readability, correcting typos, and page layout. Other studies looking the TPB in educational settings Cronbach's α ranging from .85-.89 for measures of subjective norms (Cheng & Chu, 2014; Cheon et al., 2012; Valtonen et al., 2015). The

subjective norms scale had a Cronbach's alpha of .763 for the present sample. The scale has a mean of 4.09 and standard deviation 1.07. The scale range was 1.667 to 6.667. The skew is 0.63 and the kurtosis is -0.50. See Table 3 for details. The scale was calculated as a mean for people who responded to at least seven of nine items. There were no items on the subjective norms scale that required reverse scoring.

Perceived Behavioral Control

Parents' perceived behavioral control was assessed through 11 questions regarding their perceptions about the process of enrolling their child in a DLI program. This measure was constructed for this study based on existing research on the TPB (Ajzen, 2013; Francis et al., 2004). According to TPB research, questions regarding perceived behavioral control focus on both capability and controllability (Ajzen, 2002). Sentence stems focusing on both the capability of the individual to complete the action and the amount of control the individual feels over the behavior in question were taken from TPB research and applied to enrollment in a DLI program (see Appendix D). For example, one item included in the survey was, "I am _____ of how to enroll my child in a Dual Language Immersion Program," with a response scale ranging from *confident* (1) to *unsure* (7). The measure was piloted on three parents of kindergarteners. Feedback regarding the piloted measure focused on increasing readability, correcting typos, and page layout. Other studies utilizing the TPB in educational settings have found Cronbach's α ranging from .79-.91 for measures of perceived behavioral control (Cheng & Chu, 2014; Cheon et al., 2012; Valtonen et al., 2015). The Perceived Behavioral Control scale had a Cronbach's alpha of .893 for the present sample. The scale has a

mean of 4.80 and standard deviation of 1.33. The scale range is 1.82 to 7. The skew is -0.49 and the kurtosis is -0.91. See Table 3 for details regarding this scale. The scale was calculated as a mean for people who responded to at least eight of eleven items. This scale included six items that required reverse scoring.

Behavioral Intentions

Parents' intention to enroll their child in the DLI program was assessed through six questions based on whether parents plan to enroll their child in a DLI program in the first grade (see Appendix E). These questions are based on existing TPB research and guided by Ajzen's (2013) and Francis et al.'s (2004) suggestions for creating a TPB questionnaire. Sentence stems focusing on parents' desire and probability of enrolling their child were created and anchored on a scale from strongly disagree to strongly agree (Ajzen et al., 2011). An example from the Behavioral Intentions scale was, "I am likely to enroll my child in a Dual Language Immersion program beginning in the first grade," with the response ranging from *strongly disagree* (1) to *strongly agree* (7). The measure was piloted on three parents of kindergarteners. Feedback regarding the piloted measure focused on increasing readability, correcting typos, and page layout. Other studies have found Cronbach's α ranging from .83-.92 for measures of behavioral intention in educational settings (Cheng & Chu, 2014; Cheon et al., 2012; Valtonen et al., 2015). The Behavioral Intentions scale had a Cronbach's alpha of .981 for the present sample. The scale has a mean of 4.02 and standard deviation 2.27. The scale range is 1 to 7. Skew is .24 and kurtosis is -2.66. See Table 3 for details on all scales. The scale was calculated as a mean for people who responded to at least five of six items. No items on the Behavioral

Intentions scale required reverse scoring.

Benefits of Dual Language Immersion

Parents' knowledge of and opinions regarding the benefits of DLI participation were assessed through 14 questions based on the "proven benefits" of Utah's DLI program, as stated on their website (Utah Dual Language Immersion, n.d.; see Appendix F). For example, the statement "Dual Language Immersion students show more cultural sensitivity than non-Dual Language Immersion students," was included in the survey. Each question included a 7-point response scale, from *completely disagree* (1) to *completely agree* (7). This measure was constructed for this study based on existing research on the TPB was piloted on three parents of kindergarteners (Ajzen, 2013; Francis et al., 2004). Feedback regarding the piloted measure focused on increasing readability, correcting typos, and page layout. The Benefits of Dual Language Immersion scale had a Cronbach's alpha of .962 for the present sample. The scale has a mean 6.97, *SD* =1.22. The scale range was 1.14 to 7.00 using almost the totality of the scale. Skew and kurtosis were within expected limits, with a skew of -1.58 and kurtosis of 0.98. Visual inspection of histogram and QQ plot suggested a normal distribution of the data. The scale was calculated as a mean for people who responded to at least 10 of 14 items. See Table 3 for details for all scales.

Advantages of Dual Language Immersion

Parents' perceptions of the outcomes of DLI programs on different student populations, including native English language students and native students of the target

language were also assessed. Three questions were included in this survey (see Appendix G), including the statement, "Dual Language Immersion programs provide more social advantages to English speaking majority students than native speakers of the target language.) Each statement was rated on a scale from *completely disagree* (1) to *completely agree* (7). The Advantages scale had a Cronbach's alpha of .908 for the present sample. The scale has a mean of 4.34 and a standard deviation of 1.31. The range is 1 to 7. The skew is -0.55 and the kurtosis is 1.15. The scale was calculated as a mean for people who responded to a mean of three items.

Behavior

Behavior was measured in March 2016. This information was collected via text messaging or a follow-up phone call, depending on participant preference. Parents were asked if they have taken steps towards enrolling their child in a DLI program. Responses were recorded as either 1 (*yes*) or 0 (*no*) based on previous TPD research (Ajzen et al., 2011; Cheng & Chu, 2014). If parents responded yes, additional information regarding specific steps taken were recorded, such as enrolling the student, joining a waitlist, etc. In addition, if parents responded no, they were asked if there was any particular reason they did not take any steps towards enrolling their child in the program. All parents were then asked what school their child is enrolled in for first grade.

Power, Precision, and Sample Size

A moderate effect size can be assumed for TPB studies, thus an a priori power analysis was conducted with 0.3 as the expected effect size (Francis et al., 2004). Alpha

was set at .05 and power was set at 0.80. Based on a calculation from G*Power, a sample of $n = 62$ was needed to test the first research question. In order to answer the second research question, TPB literature was used to search for an estimated odds ratio in order to run an a priori power analysis with G*Power. However, published odds ratios varied from 0.21-2.86 (Durken, Beiener, & Wakefield, 2009; Rise, Kova, Kraft, & Moan, 2008; Rutherford & DeVaney, 2009). Therefore, literature on calculating sample size was consulted. According to VanVoorhis and Morgan (2007), a general rule for calculating sample size for regressions to test individual predictors is $N > 104 + m$, where m = number of predictors. In the proposed study, there are four predictors therefore N should have been at least 108. In addition, attrition rates were calculated based on existing literature. Many attrition rates correspond to longitudinal research spanning decades (Gustavson, von Soest, Karevold, & Roysamb, 2012). However, Dajani, Bucholtz, and Warner (2012) conducted various housing surveys and found a yearly attrition rate ranging from 3.2-10.8%. We estimated attrition at the rate of 10%. Based on a sample of $N = 108$, a 10% attrition would increase the sample size by 10.8. Therefore, a sample of $N = 120$ was proposed for the current study. However, due to the time sensitive nature of the research and the difficulty in recruitment, only a sample of $N = 74$ was obtained and used for data analysis.

The current study was approved by the Utah State University Institutional Review Board (IRB) during summer 2015. The questionnaire was distributed to respondents through various Facebook groups at the beginning of August 2015 and remained available until the application deadline for the program in February 2016. These

Facebook groups included local parenting groups, yard sale groups, and children's activity groups. In addition, a few fliers advertising the study were placed at stores and in mailboxes in October and in January. The researcher also emailed the Parent Teacher Associations (PTA) of elementary schools in the area to promote the survey. Of those responding, PTA members indicated that approval would be needed from the school district in order to distribute the survey information to parents. Thus, the researcher, along with colleagues and friends shared the survey on their personal Facebook walls in order to spread awareness. From these efforts, a total of 74 participants were secured.

Follow up survey was collected in March 2016. Participants were contacted via text or phone call, according to their listed preference on the initial survey. Participants were contacted up to three times. If no response was obtained after the third attempt, the participant was considered unreachable. Of the original 74 participants, 61 provided follow up data, therefore the current study's attrition rate was 17.6%.

CHAPTER IV

RESULTS

All variables of interest were correlated to inspect relationships. As expected, the three TPB variables were highly correlated amongst themselves as well as with the primary outcome of behavioral intention (see Table 4). Samples sizes may vary in reporting due to missing data.

Enrollment in Dual Language Immersion Programs

On follow up, data were available for 63 families. Of those, 42 families (66.7%) had not taken any steps to enroll their children in a DLI program. The remaining 21 families (33.3%) had taken steps towards enrollment. Interestingly, 14 of these students were male; seven were female. Of the 21 families that had taken steps towards enrolling their children, 18 submitted an application for participation. Two additional families talked with the school regarding the DLI program and one family visited a DLI school.

Table 4

Bivariate Correlations Among Attitudes, Subjective Norms, Perceived Behavioral Control, and Behavior Intentions

Variables	1	2	3	4
1. Attitudes	1			
2. Subjective norms	.292*	1		
3. Perceived behavioral control	.259*	.423**	1	
4. Behavioral intentions	.718**	.403**	.382**	1

Note. (n = 67).

* Significant at the 0.05 level.
** Significant at the 0.01 level.

Most families who submitted applications were still waiting to hear from the school district at follow-up regarding their child's acceptance.

The families who had not taken any steps towards enrolling their child in a DLI program provided various reasons for not doing so. Nine families indicated that a lack of knowledge regarding which schools offered DLI programs, the process of enrollment, and/or the requirements/deadlines for participation as reasons for not taking steps. Thirteen families cited practicality as the reason for not enrolling their children. Many of these families explained that if the DLI program were in their home school and it was more convenient, they would be more likely to participate. In addition, one parent noted that if their kindergarten student began a DLI program, then next year she would have her three children in three different schools. Another parent noted that the bus would not transport her student to the DLI school and because of work schedules she would be relying on the bus in the fall. An additional three families noted concerns about how participation in a DLI program would impact their child's academic performance, especially for a student in resource. Other families (n = 8) explained that they were happy with their child's current school and were not interested at this time. Some parents included that they did not think that a DLI program would be a good fit for their family at this time. Three families mentioned they were moving out of Cache County and did not know which school their children would be attending in the fall. Four families indicated that previous negative experiences with DLI programs and would not consider enrolling their children in any DLI program. The remaining families (n = 2) did not provide a reason.

It is important to note that the current study did not collect specific data on the dates steps towards enrollment were taken. It is possible that families who took steps toward enrollment had already done so at the time of the initial data collection. Additionally, it is possible that parents took steps toward enrollment after the follow up. This makes it difficult to assume that the current study served as an intervention to increase enrollment.

Predicting Behavioral Intentions

The first research question was: Do attitudes, subjective norms, and perceived behavioral control predict behavioral intention in a sample of parents with young children? The hypothesis stated that, based on the TPB, attitudes, subjective norms, and perceived behavioral control would predict behavioral intention in this sample. A simple multiple regression analysis with behavioral intention as the outcome variable and attitudes, subjective norms, and perceived behavioral control as predictors, resulted in highly significant model, $F(3, 60) = 27.57$, $p < .001$. The combined model accounted for 57.7% of the variance in behavioral intentions. There was independence of residuals as assessed by a Durbin-Watson statistic of 2.31. When examining the model closely, neither subjective norms nor perceived behavioral control were significant; the model was primarily driven by attitudes (see Table 5).

Predicting Enrollment

The second research question was: How does perceived behavioral control

Table 5

Beta Coefficients

Variable	B	SE B	B
Attitudes	.965	.136	.638
Subjective norms	.295	.203	.139
Perceived behavioral control	.257	.162	.151

influence the relationship between parents' intentions and behaviors of enrolling their child in a dual language immersion program? The hypothesis stated that parents' behavior of enrolling their child in a DLI program would be partially moderated by the level of perceived behavioral control they had over participation in the program (i.e., their awareness of the program and resources they believed were available to enable their participation). It was hypothesized that higher levels of perceived behavioral control would strengthen the predictive power of the relationship between behavioral intention and engaging in the behavior.

The second research question/hypothesis was tested using binomial logistic regression with perceived behavioral control in the first block and behavioral intentions in the second block. A logistic regression model was used because the dependent variable (behavior) was categorical, either yes or no. The relationship between predictors (perceived behavioral control and behavioral intentions) was moderate, $R(66) = .417$, $p < .001$. Perceived behavioral control was moderately correlated with behavior $R(56) = .507$, $p < .001$. In addition, the correlation between behavioral intentions and behavior was $R(58) = .717$, $p < .001$.

Fifty-five cases were included in the analysis. The model in block 1 was

statistically significant ($\chi^2 = 16.02$, $df = 1$, $p < .001$). The model fit well as evident by a non-significant Hosmer and Lemeshow test ($\chi^2 = 6.55$, $df = 8$, $p = .586$). The explained variance in block 1 ranged from 25.3% (Cox & Snell R^2) to 34.6% (Nagelkerke R^2). Classification was improved from 63.6% to 78.2% by adding perceived behavioral control to the model. The model sensitivity (i.e., the number of families predicted to have taken a step to DLI that actually did so; true positives) was 70.0%. Model specificity, that is, the number of families predicted to not enroll in DLI that didn't (true negatives) was 82.9%. Results reveal that for every unit increase in perceived behavioral control there was a 2.78 greater likelihood of taking steps to enroll the family's kindergartener into a DLI program (see Table 6).

When adding behavioral intention in block 2, the new model was statistically significant ($\chi^2 = 39.71$, $df = 2$, $p < .001$). The model had a good fit as evident by a non-significant Hosmer and Lemeshow test ($\chi^2 = 3.07$, $df = 7$, $p = .878$). The explained variance ranged from 51.4% (Cox & Snell R^2) to 70.4% (Nagelkerke R^2). Classification was improved to 87.3% by adding behavioral intentions to the model. The model sensitivity (i.e., the number of families predicted to have taken a step to DLI that actually

Table 6

Predictors for Likelihood of Enrollment into DLI

Predictors	*B*	*S.E.*	Wald	*p*	Exp(B)
Block 1					
Perceived behavioral control	1.022	0.306	11.18	.001	2.779
Block 2					
Perceived behavioral control	0.649	0.400	2.63	.105	1.913
Behavioral intentions	0.991	0.289	11.80	.001	2.695

did so; true positives) was improved to 85.0%. Model specificity, that is, the number of families predicted to not enroll in DLI that did not (true negatives) was improved as well to 88.6%. When both variables were in the model, perceived behavioral control was no longer significant and perceived behavioral intentions were highly significant. For every unit increase behavioral intention there was a 2.70 increase in likelihood to have taken steps to enroll the family's kindergartener into a DLI program (see Table 6).

In addition to the stated analysis, another binary logistic regression was conducted to examine the full TPB model. Variables included in the analyses were attitudes, subjective norms, and perceived behavioral control. Fifty-three cases were included in the analysis. The model in block 1 was statistically significant ($\chi^2 = 28.62$, df = 3, $p < .001$). The model fit well as evident by a non-significant Hosmer and Lemeshow test ($\chi^2 = 6.39$, $df = 8$, $p = .604$). The explained variance in block 1 ranged from 41.7% (Cox & Snell R^2) to 57.3% (Nagelkerke R^2). Classification was improved from 64.0% to 79.2% by adding attitudes, subjective norms, and perceived behavioral control to the model. The model sensitivity (true positives) was 68.4%. Model specificity (true negatives) was 85.3%. Results revealed that for every unit increase in perceived behavioral control there was a 2.35 greater likelihood of taking steps to enroll the family's kindergartener into a DLI program (see Table 7). Additionally, for every unit increase in attitudes there was a 3.38 greater likelihood of taking steps.

When adding behavioral intentions in block 2, the new model was statistically significant ($\chi^2 = 38.13$, df = 4, $p < .001$). The model fit well as evident by a nonsignificant Hosmer and Lemeshow test ($\chi^2 = 6.83$, df = 8, $p = .555$). The explained variance ranged

Table 7

Theory of Planner Behavior Variables Predicting DLI Enrollment

Predictors	*B*	*S.E.*	Wald	*p*	Exp(B)
Block 1					
Attitudes	1.217	0.458	7.706	.008	3.377
Subjective norms	.686	.400	2.943	.086	1.985
Perceived behavioral control	.853	.367	5.388	.020	2.346
Block 2					
Attitudes	-0.089	0.638	0.017	.896	0.915
Subjective norms	0.438	0.438	0.997	0.318	1.549
Perceived behavioral control	.532	0.418	1.614	0.204	1.702
Behavioral intentions	1.016	0.421	5.829	.016	2.763

from 51.3% (Cox & Snell R^2) to 70.4% (Nagelkerke R^2). Classification was improved to 86.8% by adding behavioral intentions to the model. The model sensitivity (true positives) was improved to 84.2%. Model specificity (true negatives) was improved as well to 88.2%. When both variables were in the model, neither attitudes nor perceived behavioral control remained significant, and behavioral intentions were highly significant. For every unit increase in behavioral intention there was a 2.76 increase in likelihood to have to take steps to enroll the family's kindergartener into a DLI program (see Table 7).

CHAPTER V

DISCUSSION

Overall, the current research found evidence of the TPB's usefulness in predicting parents' enrollment of their children in the DLI program. The first research question showed that participants' attitudes towards DLI significantly influenced behavioral intentions to enroll in the program. The second research question and post hoc analysis indicated that for every unit increase of behavioral intentions, there was a large increase in the likelihood of actual steps toward enrollment. In our sample, approximately 1/3 of participants took steps toward enrollment. This shows considerable progress compared to nine years ago when the first DLI programs began in Utah in only about 20 schools statewide (Leite, 2013).

Data also showed that 2/3 of study participants did not take any steps toward enrolling their children in a DLI program. The feedback provided by these parents offered insight and guidance into how to improve participation. For many of these parents, practicality of participation was a major concern. Even when parents wanted their children to participate in a DLI program, if the program was housed at a school that was too far away, parents were less interested in participation. In addition, parents were less likely to participate if they had other children enrolled in a non-DLI school already. Parents appeared to place convenience and practicality of participation above potential benefits. The DLI program has addressed these concerns in some ways, such as allowing preference for enrollment if older siblings are already enrolled and expanding DLI programs to more schools, however, more may to be done in order to increase the

practicality of participation in the program for all parents. Additionally, several parents indicated a lack of knowledge regarding the process of enrollment for DLI programs was a reason for not taking steps. This concern could be easily overcome by additional information being distributed about the program to all schools and parents.

Limitations

The main limitations in this research were related to recruitment and sample size. A prior power analyses returned a recommended sample size of $N = 120$; however, only 74 participants were secured. The current study sought to recruit a community sample. This was done via local Facebook groups and fliers distributed in the community. However, the expected number of participants was not reached via these recruitment methods and suggests that a community sample of parents is likely insufficient for this type of project. Instead, it is recommended that future research go through the local school boards, as well as the Utah DLI research board, in order to increase participation. This will allow the researcher to recruit parents of all kindergarten students. Researchers interested in that recruitment approach should allow ample time for review by three separate ethics boards.

The sample size was limited due to time constraints. Because of the academic calendar, parents must submit their application for participation in the DLI Program in late February. Rather than wait and continue the project during the 2016-2017 academic year, we decided to use the smaller sample, $n = 74$. Waiting another year may have introduced confounding variables such as outside promotion of DLI programs by other

groups, changes in social attitudes, and so forth, which could have affected the reliability and validity of the present survey. It is expected that with a greater recruitment pool, future research will be able to obtain the needed sample size in the time frame allotted by the academic calendar.

Given the difficulties of recruitment, care should be taken when generalizing these results to a broader population. Because a community sample was used, it is not possible to know how well the participants represent the larger community.

With most of the recruitment being conducted via Facebook, it was more difficult for families with limited or no access to the internet to participate. In addition, it is likely that participation was increased for individuals who had strong opinions regarding DLI programs. Individuals who did not have a strong preference regarding participation may have easily chosen not to participate. The participants in the study were also highly educated, with 71.62% of fathers and 68.92% of mothers either enrolled in or having completed college. In addition, 37.84% of fathers and 14.86% of mothers spoke a second language. Because the survey focuses on education and second language learning, it is likely that parents who valued these ideas were more likely to participate. These results may not generalize to communities with different values. In addition, these results may not accurately reflect Cache Valley's population. Specifically, U.S. census data estimates from July 2015 indicate that the number of non-English language households in Cache Valley, Utah, is only about 12%, which seems low compared to current survey data (U.S. Census Bureau, 2015). Moreover, the study sample appears more educated than the Census data estimates Cache Valley to be. Census estimates indicate that only 12.8% of

persons have a bachelor's degree or higher (U.S. Census Bureau, 2015).

Conclusions

Despite the small sample size in the current study, we still found effects and significance in our results. Therefore, we recommend that the TPB be used as a good framework for understanding what influences parents' decisions to enroll their children in DLI programs. Specifically, the data show that attitudes, subjective norms, and perceived behavioral control may all be points of intervention. As the USOE and the DLI Program seek to increase participation, these are three areas to focus on. Because our data showed that attitudes were most significant in increasing behavior intentions, efforts to increase awareness and shape public attitudes in favor of DLI programs offer a starting point. This could be done through social and print media, live events, and increased collaboration among DLI and non-DLI schools. Once awareness is increased and positive attitudes are formed, public opinion can shift and families can gain a greater sense of control over their participation. This will lead to increased behavioral intentions, which our data also indicates will greatly increase the likelihood of actually taking steps towards enrollment.

In addition, the current study adds to the current TPB literature. Our research is one of the first studies looking at TPB predicting enrollment behavior. While TPB has been used in the educational context previously, prior research has focused on teaching practices, parental involvement, or students' own educational decisions. Moreover, previous research on TPB has focused mainly on using the theory to explain personal behavior. This project was a pilot study that applied the theory to decision making for

another person, in this case the participants' children. More research needs to be conducted to better understand if the TPB applies to additional situations of making decisions for others.

The current project also contributed new measures for potential future use. The measures were created specifically for this research and demonstrated predictive validity and strong reliability. These scales can be used in future studies as results are replicated and applied to other educational decisions. This study is also important because it provides a measure to evaluate parental perceptions of claims made by the USOE regarding benefits of their DLI Program. Items on the benefits scale were taken directly from the claimed benefits, and the measure has demonstrated both validity and reliability. The current sample reported positive benefits matching the reports from the USOE.

The current study also lends itself to future analysis and research. Using the data already collected, more specific information regarding the benefits of DLI, broken down by specific section (e.g., cultural competence, improved academic proficiency) could be explored. In addition, mean differences in attitudes, perceived behavioral control and subjective norms could be analyzed among families that did or did not enroll their children in the program. Behavioral intentions could also be looked at. Future analyses could investigate potential relationships between the benefits and advantages of DLI participation by enrollment or non-enrollment. The current study also collected data on which school the child currently attends. Future analysis could examine whether exposure to a DLI program in a previous school may impact attitudes, subjective norms, perceived behavioral control or behavioral intentions with regards to enrollment.

REFERENCES

Abbott, M. G. (2011). *Cognitive benefits of learning languages*. Retrieved from http://tip.duke.edu/node/866

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action-control: From cognition to behavior* (pp. 11- 39). Heidelberg, Germany: Springer.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211. doi:10.1016/0749-5978(91)90020-T

Ajzen, I. (2002). *Constructing a TPB questionnaire: Conceptual and methodological considerations*. Retrieved from http://www.unibielefeld.de/ikg/zick/ajzen% 20construction%20a%20tpb%20questionnaire.pdf

Ajzen, I. (2012). The theory of planned behavior. In P. A. M. Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 438-459). London, UK: Sage.

Ajzen, I. (2013). *Theory of planned behaviour questionnaire.* Retrieved from http://people.umass.edu/aizen/pdf/tpb.measurement.pdf

Ajzen, I., Joyce, N., Skeikh, S., & Cote, N. G. (2011). Knowledge and the prediction of behavior: The role of information accuracy in the theory of planned behavior, *Basic and Applied Social Psychology*, *33*(2), 101-117. doi: 10.1080/01973533.2011.568834

Alanís, I., & Rodríguez, M. A. (2008). Sustaining a dual language immersion program: Features of success. *Journal of Latinos and Education 74*(4), 305-319. doi: 10.1080/15348430802143378

Barden, S. M., & Cashwell, C. S. (2013). Critical factors in cultural immersion: A synthesis of relevant literature. *International Journal for the Advancement of Counselling,* 35, 286-297. doi: 10.1007/s10447-013-9183-y

Bracke, D., & Corts, D. (2012). Parental involvement and the theory of planned behavior. *Education 133*(1), 188-201.

Campbell, M. (2010). An application of the theory of planned behavior to examine the impact of classroom inclusion on elementary school students. *Journal of Evidence-Based Social Work, 7,* 235-250. DOI: 10.1080/15433710903126554

Cheng, P.-Y., & Chu, M.-C. (2014). Behavioral factors affecting students' intentions to enroll in business ethics courses: A comparison of the theory of planned behavior and social cognitive theory using self-identity as a moderator. *Journal of Business Ethics, 124*, 35-346. doi: 10.1007/s10551-013-1858-0

Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the theory of planned behavior. *Computers & Education, 59*, 1054-1064. doi: 10.1016/j.compedu.2012.04.015

Dajani, A. N., Bucholtz, S. J., & Warner, T. M. (2012, July). *Measuring attrition in long-term longitudinal surveys.* Paper presented at the annual Joint Statistical Meeting, San Diego, CA. Retrieved from http://www.census.gov/programs-surveys/ahs/research/2015-redesign/measuring-attrition.html.

Durken, S. J., Biener, L. B., & Wakefield, M. A. (2009). Effects of different types of antismoking ads on reducing disparities in smoking cessation among socioeconomic subgroups. *American Journal of Public Health, 99*, 2217-2223. doi: 10.2105/AJPH.2009.161638

Faltis, K. (2011). Bilingual, ESL and English immersion: Educational models for limited English proficient students in Texas. *Pepperdine Policy Review:* Vol. 4, Article 8. Retrieved from http://digitalcommons.pepperdine.edu/ppr/vol4/iss1/8/

Fitts, S. (2006). Reconstructing the status quo: Linguistic interaction in a dual-language school. *Bilingual Research Journal: The Journal of the National Association for Bilingual Education, 30*(2), 337-365. doi: 101080/15235882.2006.10162880

Francis, J., Eccles, M. P., Johnston, M., Walker, A. E., Grimshaw, J. M., Foy, R., … Bonetti, D. (2004). *Constructing questionnaires based on the theory of planned behaviour: A manual for health services researchers*. Newcastle upon Tyne, UK: Centre for Health Services Research, University of Newcastle upon Tyne.

Genesse, F. (1994). *Integrating language and content: Lessons from immersion. Educational Practice Reports. No. 11.* Washington, DC: Center for Applied Linguistics. Retrieved from http://www.carla.umn.edu/cobaltt/modules/principles/Genesee1994/genesee1994.pdf

Gustavson, K., von Soest, T., Karevold, E., & Roysamb, E. (2012). Attrition and generalizability in longitudinal studies: Findings from a 15-year population-based study and a Monte Carlo simulation study. *BMC Public Health, 12,* 918-929. doi: 10.1186/1471-2458-12-918

Howard, E. R., Olague, N., & Rogers, D. (2003). *The dual language program planner: A guide for designing and implementing dual language programs*. Santa Cruz, CA: Center for Research on Education, Diversity & Excellence. Retrieved from http://mas-link.net/Additional/Bilingual/PDFdocs/dlppfinal.pdf

Lee, J., Cerreto, F. A., & Lee, J. (2010). Theory of planned behavior and teachers' decisions regarding use of educational technology. *Educational Technology & Society, 13*(1), 152-164.

Lee, P. (1996). Cognitive development in bilingual children: A case for bilingual instruction in early childhood education. *Bilingual Research Journal, 20*(3 & 4), 499–522. doi: 10.1080/15235882.1996.10668641

Leite, J. (2013). *Mainstreaming dual language immersion: The Utah model for replicable and sustainable language education* (Master's thesis). Utah Valley University, Orem, UT.

Lindholm-Leary, K. J. (2004). The rich promise of two-way immersion. *Educational Leadership, 62* (4), 56-59. Retrieved from http://www.lindholm-leary.com/articles/ EducLeadership_TWI2.pdf

Met, M. (2001). Why language learning matters. *Educational Leadership, 59*(2), 36-40.

Met, M. (2004). Improving students' capacity in foreign languages. *Phi Delta Kappan, 83*(3), 214-218.

Met, M. (2008). Paying attention to language: Literacy, language and academic achievement. In T. Fortune & D. Tedick (Eds.), *Pathways to bilingualism and multilingualism: Evolving perspectives on immersion education* (pp. 49-70). Clevedon, UK: Multilingual Matters.

Palmer, D. (2007). A dual language immersion strand programme in California: Carrying out the promise of dual language education in an English-dominant context. *The International Journal of Bilingual Education and Bilingualism, 10*(6), 752-768. doi: 10.2167/beb397.0

Pitkin, H. F. (1972). *Wittgenstein and justice*. Berkeley, CA: University of California Press.

Rise, J., Kova, V., Kraft, P., & Moan, I. S. (2008). Predicting the intention to quit smoking and quitting behaviour: Extending the theory of planned behavior. *British Journal of Health Psychology, 13,* 219-310. doi: 10.1348/ 135910707X187245

Roberts, G., & Talbot, S. (2009). *Utah language roadmap for the 21st century*. Retrieved from http://www.schools.utah.gov/CURR/dualimmersion/Home/Utah-Language-Road-for-the-21st-Century.aspx

Rossell, C. H., & Baker, K. (1996). The educational effectiveness of bilingual education. *Research in the Teaching of English, 30*(1), 7-74.

Rutherford, L. G., & DeVaney, S. A. (2009). Utilizing the theory of planned behavior to understand convenience users of credit cards. *Journal of Financial Counseling and Planning, 20*(2), 49-63.

Tedick, D. (2012). *Benefits of dual language and immersion education* [PowerPoint slides]. Minneapolis, MN: Foundations of Dual Language and Immersion Education.

U.S. Census Bureau. (2015). *Quick facts: Cache Valley, Utah*. Retrieved from http://www.census.gov/quickfacts/table/PST045215/49005

Utah Dual Language Immersion. (n.d.). *Why immersion?* Retrieved from http://utahimmersion.org/?page_id=2

Utah State Office of Education. (2010). *Dual language immersion.* Retrieved from http://www.schools.utah.gov/curr/dualimmersion/

Valdés, G. (1997). Dual language immersion programs: A cautionary note concerning the language-minority students. *Harvard Educational Review, 67*(3), 391-492.

Valtonen, T., Kukkonen, J., Kontkanen, S., Sormunen, K., Dillon, P., & Sointu, E. (2015). The impact of authentic learning experiences with ICT on pre-service teachers' intentions to use ICT for teaching and learning. *Computers & Education, 81*, 49-58. doi: 10.1016/j.compedu.2014.09.008

VanVoorhis, C. R. W., & Morgan, B. L. (2007). Understanding power and rules of thumb for determining sample sizes. *Tutorials in Quantitative Methods for Psychology, 3*(2), 43-50.

APPENDICES

Appendix A

Demographics Measure

Demographics Measure

Please answer the following questions in regard to your child who is currently enrolled in Kindergarten:

My child who is currently in Kindergarten is a:
□ Boy □ Girl

Ethnicity/Race: (check all that apply)
□ White / European American
□ Hispanic / Latino
□ Black / African American
□ Asian American
□ American Indian / Native American
□ Other _____

Country of Birth:
□ U.S.
□ Outside of U.S., please specify: _____

School enrolled in: _____

Child's native language:
□ English
□ Other, please specify: _____

Does your child speak a second language?
□ Yes □ No
If yes, what language? _____
How long has your child known this second language? __ years

Does your child speak a third language?
□ Yes □ No
If yes, what language? _____
How long has your child known this third language? __ years

Please answer the following questions in regard to the parents of the child in kindergarten:

Father's Ethnicity/Race: (check all that apply)
□ White / European American
□ Hispanic / Latino
□ Black / African American
□ Asian American

□ American Indian / Native American
□ Other _____

Mother's Ethnicity/Race: (check all that apply)
□ White / European American
□ Hispanic / Latino
□ Black / African American
□ Asian American
□ American Indian / Native American
□ Other _____

Father's highest level of education:
□ Less than high school
□ Some high school
□ High school graduate/GED
□ Some college
□ Associate / Technical certificate or degree
□ Bachelor's degree completed
□ Graduate degree completed

Mother's highest level of education:
□ Less than high school
□ Some high school
□ High school graduate/GED
□ Some college
□ Associate / Technical certificate or degree
□ Bachelor's degree completed
□ Graduate degree completed

Father's Country of Birth:
□ U.S.
□ Outside of U.S., please specify: _____

Mother's Country of Birth:
□ U.S.
□ Outside of U.S., please specify: _____

What is your family's NET total current MONTHLY income level (e.g. 5000)?
_____

Father's native language:
□ English
□ Other, please specify: _____

Does father speak a second language?

□ Yes □ No

If yes, what language? _____

How long has the father known this second language? __ years

Does father speak a third language?

□ Yes □ No

If yes, what language? _____

How long has the father known this third language? __ years

Mother's native language:

□ English

□ Other, please specify: _____

Does the mother speak a second language?

□ Yes □ No

If yes, what language? _____

How long has the mother known this second language? ___ years

Does mother speak a third language?

□ Yes □ No

If yes, what language? _____

How long has the mother known this third language? __ years

Please answer the following questions in regards to siblings of the child currently enrolled in kindergarten:

Do you have other children beside your kindergartener?

□ Yes □ No

What are the ages and gender of the other child(ren)?

Child 1:

Gender: □ Male □ Female

Age: _____

Child 2:

Gender: □ Male □ Female

Age: _____

Child 3:

Gender: □ Male □ Female

Age: _____

Child 4:

Gender: □ Male □ Female

Age: _____

Child 5:
Gender: □ Male □ Female
Age: _____

Do any of these children attend school?
□ Yes □ No

If so, what school and grade is each child in?
Child 1:
School: _____
Grade: _____
Child 2:
School: _____
Grade: _____
Child 3:
School: _____
Grade: _____
Child 4:
School: _____
Grade: _____
Child 5:
School: _____
Grade: _____

Are any of these siblings currently participating a dual language program?
□ Yes □ No
Language: _____

If so, where and during which grade(s)?
School: _____
Grade(s): (Check all that apply)
□ Kindergarten
□ 1st grade
□ 2nd grade
□ 3rd grade
□ 4th grade
□ 5th grade
□ 6th grade
□ 7th grade
□ 8th grade
□ 9th grade
□ 10th grade
□ 11th grade
□ 12th grade

Have any of these siblings participated in a dual language program in the past?

□ Yes □ No

Language: _____

If so, where and during which grade(s)?

School: _____

Grade(s): (Check all that apply)

□ Kindergarten
□ 1st grade
□ 2nd grade
□ 3rd grade
□ 4th grade
□ 5th grade
□ 6th grade
□ 7th grade
□ 8th grade
□ 9th grade
□ 10th grade
□ 11th grade
□ 12th grade

Appendix B

Attitudes Scale

Attitudes Scale

1. Overall, my child's participation in a Dual Language Immersion Program would be (R)

1	2	3	4	5	6	7
good						bad

2. My child's experience in a Dual Language Immersion Program would be (R)

1	2	3	4	5	6	7
very pleasant						very unpleasant

3. Overall, my child's participation in a Dual Language Immersion Program would be _____ (R)

1	2	3	4	5	6	7
very desirable						very undesirable

4. I would _____ my child to participate in a Dual Language Immersion Program (R)

1	2	3	4	5	6	7
strongly like						strongly dislike

5. My child's experience in a Dual Language Immersion Program would be

1	2	3	4	5	6	7
very negative						very positive

6. My perception of my child's participation in a Dual Language Immersion Program would be _____ (R)

1	2	3	4	5	6	7
very desirable						very undesirable

7. My child's participation in a Dual Language Immersion Program would be (R)

1	2	3	4	5	6	7
valuable						worthless

8. My child's participation in a Dual Language Immersion Program would be _____ in terms of long term consequences. (R)

1	2	3	4	5	6	7
very beneficial						very harmful

9. Overall, my child's participation in a Dual Language Immersion Program would be _____.

1	2	3	4	5	6	7
extremely unwise						extremely wise

Appendix C

Subject Norms Scale

Subject Norms Scale

1. Most people like me will enroll their child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

2. People whose opinions I value want me to enroll my child in a Dual Language Immersion Program

1	2	3	4	5	6	7
strongly disagree						strongly agree

3. Most people who are important to me currently want me to enroll my child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

4. Most parents like me will enroll their child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

5. People who are close to me would approve of me enrolling my child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

6. People who are close to me would support my decision to enroll my child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

7. I feel social pressure to enroll my child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

8. I have friends whose children are enrolled in a Dual Language Immersion Program.

1	2	3	4	5	6	7
none						several

9. I have family members whose children are enrolled in a Dual Language Immersion Program.

1	2	3	4	5	6	7
none						several

Appendix D

Perceived Behavioral Control Scale

Perceived Behavioral Control Scale

1. It would be difficult for me to enroll my child in a Dual Language Immersion Program. (R)

1	2	3	4	5	6	7
strongly disagree						strongly agree

2. For me to enroll my child in a Dual Language Immersion Program would be (R)

1	2	3	4	5	6	7
possible						impossible

3. I should have no trouble enrolling my kindergartener in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

4. If I wanted to, I could enroll my child in a Dual Language Immersion Program.

1	2	3	4	5	6	7
strongly disagree						strongly agree

5. I have _____ over enrolling my child in a Dual Language Immersion Program. (R)

1	2	3	4	5	6	7
complete control						no control

6. I am _____ of how to enroll my child in a Dual Language Immersion Program. (R)

1	2	3	4	5	6	7
confident						unsure

7. Factors outside of my control affect my child's enrollment in a Dual Language Immersion Program. (R)

1	2	3	4	5	6	7
strongly disagree						strongly agree

8. Enrolling my child in a Dual Language Immersion Program would be (R)

1	2	3	4	5	6	7
easy						hard

9. Enrolling my child in a Dual Language Immersion Program is

1	2	3	4	5	6	7
completely impossible						completely possible

10. Whether I enroll my child in a Dual Language Immersion Program is completely up to me.

1	2	3	4	5	6	7
strongly disagree						strongly agree

Appendix E

Behavioral Intentions Scale

Behavioral Intentions Scale

1. I will probably enroll my child in a Dual Language Immersion program beginning in the first grade.

1	2	3	4	5	6	7
strongly disagree						strongly agree

2. I am likely to enroll my child in a Dual Language Immersion program beginning in the first grade.

1	2	3	4	5	6	7
strongly disagree						strongly agree

3. I will make an effort to enroll my child in a Dual Language Immersion program beginning in the first grade.

1	2	3	4	5	6	7
strongly disagree						strongly agree

4. I have decided to enroll my child in a Dual Language Immersion program beginning in the first grade.

1	2	3	4	5	6	7
strongly disagree						strongly agree

5. I expect to enroll my child in a Dual Language Immersion program beginning in the first grade.

1	2	3	4	5	6	7
strongly disagree						strongly agree

6. I want to enroll my child in a Dual Language Immersion program beginning in the first grade.

1	2	3	4	5	6	7
strongly disagree						strongly agree

Appendix F

Benefits of Dual Language Immersion Scale

Benefits of Dual Language Immersion Scale

The following may or may not be benefits of your child's participation in Dual Language Immersion (DLI). Please rate to what degree you agree or disagree with the following statements:

1. Implementation of a Dual Language Immersion (DLI) program is an appropriate use of school resources.

1	2	3	4	5	6	7
completely disagree						completely agree

2. Through participation in the DLI program, all students achieve high proficiency in the immersion language.

1	2	3	4	5	6	7
completely disagree						completely agree

3. DLI students perform as well as or better than non-DLI students on standardized tests of English administered in English.

1	2	3	4	5	6	7
completely disagree						completely agree

4. DLI students perform as well as or better than non-DLI students on standardized tests of math administered in English.

1	2	3	4	5	6	7
completely disagree						completely agree

5. DLI students typically develop greater cognitive flexibility than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

6. DLI students typically demonstrate increased attention compared to non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

7. DLI students typically demonstrate a better memory than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

8. DLI students typically demonstrate superior problem solving skills than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

9. DLI students typically demonstrate an enhanced understanding of their primary language than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

10. DLI students show more cultural sensitivity than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

11. DLI students show more positive attitudes toward other cultures than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

12. DLI students show more appreciation of other people than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

13. DLI students are better prepared for participation in the global community than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

14. DLI students are better prepared for job markets where a second language is an asset than non-DLI students.

1	2	3	4	5	6	7
completely disagree						completely agree

Appendix G

Advantages Scale

Advantages Scale

The following questions refer to outcomes of different students who may be enrolled in DLI programs. Please rate to what degree you agree or disagree with the following statements:

1. DLI programs provide more social advantages to English speaking majority students than native speakers of the target language.

1	2	3	4	5	6	7
completely disagree						completely agree

2. DLI programs provide more academic advantages for English speaking majority students than for English language learners.

1	2	3	4	5	6	7
completely disagree						completely agree

3. DLI programs provide more economic advantages for English speaking majority students than for English language learners.

1	2	3	4	5	6	7
completely disagree						completely agree