Reading and Math Outcomes of Randomly Selected Majority Culture Students Participating in an Elective, Parent Choice, Full Academic Content Area Spanish Immersion Program

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Culture Students Participating in an Elective, Parent Choice, Full

Academic Content Area Spanish Immersion Program

By

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Abstract

READING AND MATH OUTCOMES OF RANDOMLY SELECTED MAJORITY

CULTURE STUDENTS PARTICIPATING IN AN ELECTIVE, PARENT CHOICE,

FULL ACADEMIC CONTENT AREA SPANISH IMMERSION PROGRAM

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University of Nebraska, 2015

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The purpose of this study is to determine the reading and math outcomes of randomly

selected majority culture students participating in an elective, parent choice, full

academic content area Spanish Immersion Program kindergarten through fifth-grade

compared to randomly selected same school control majority culture students

participating in a traditional academic content area English only program kindergarten

through fifth-grade. Study results indicate that posttest ending third-grade NWEA MAP-

Reading Test Scores $M = 196.02$ ($SD = 46.18$) compared to post-posttest ending fifth-

grade NWEA MAP-Reading Test Scores $M = 227.07$ ($SD = 9.58$) following kindergarten

through fifth-grade participation in an elective, parent choice, full academic content area

Spanish Immersion Program was statistically significantly different rejecting the null

hypothesis in the direction of improved NWEA MAP-Reading Test Scores where

dependent $t(39) = 4.05, p < .001$ (two-tailed), $ES = 1.11$. Furthermore, posttest ending

third-grade NWEA MAP-Math Test Scores $M = 197.42$ ($SD = 46.22$) compared to post-

posttest ending fifth-grade NWEA MAP-Math Test Scores $M = 238.72$ ($SD = 14.70$)

following kindergarten through fifth-grade participation in an elective, parent choice, full

academic content area Spanish Immersion Program was statistically significantly

different rejecting the null hypothesis in the direction of improved NWEA MAP-Math Test Scores where dependent $t(39) = 4.99$, $p < .0001$ (two-tailed), $ES = 1.35$. Students who participated in a traditional standard of care academic content area English only program serving as a control group also made statistically significant reading and math gains over time. Between group post-posttest ending fifth-grade NWEA MAP-Reading Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program compared to post-posttest ending fifth-grade NWEA MAP-Reading Test Scores for students in a traditional standard of care academic content area English only program were statistically significantly different rejecting the null hypothesis in the direction of greater post-posttest NWEA MAP-Reading Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program where independent $t(78) = 3.22$, $p < .01$ (two-tailed), $ES = 0.73$. However, the null hypothesis was not rejected for the between group post-posttest NWEA MAP-Math Test Scores comparison indicating statistical equipoise where independent $t(78) = 1.63$, $p = .107$ (two-tailed), $ES = 0.40$. It is clear from the study results that students participating in the programs of this research are making significant academic progress as measured by norm-referenced reading and math test results over time, third-grade to fifth-grade. It is also remarkable that students who are learning basic skills at the elementary level in a second language, Spanish, are doing so at an observed above grade level pace suggesting that they will be ready for middle school English and math coursework with an advanced promise of success in future second language, Spanish, coursework as well.

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CHAPTER ONE

Introduction

Impact of Immigration on Education

There has been a recent wave of immigration sweeping across the United States.

Passel and Cohn (2012) reported there were 11.1 million undocumented immigrants in

the United States as of 2011. They also noted that there was a peak in the amount of

Mexicans migrating to the United States in 2007 in which 12 million unauthorized

immigrants were estimated to be living in the United States. Since 2008, the number of

unauthorized immigrants from Mexico has held steady at over 11 million. However,

since 2010, the majority of immigrants from Mexico arrived legally at a rate of 140,000

per year, compared to 2000 when the number of immigrants from Mexico totaled

770,000, who mostly arrived illegally to the United States (Passel & Cohn, 2012).

Regardless of whether families arrived legally or illegally, there is a great need to provide

bilingual education to students in the United States and for majority culture students to

become proficient in the language of these new American arrivals.

Immersion. In past years, learning a foreign language at the elementary level

was a failure because it required memorizing a few words, taking a few tests, and once

the language learning was no longer a requirement, students forgot everything (Rivas,

2014). Rivas (2014) asserts that learning in an immersion environment (Ballinger &

Lyster, 2011; Day & Shapson, 2001; Potowski, 2004; Rhodes, 2010) is the only way for

elementary children to learn a new language. Rivas (2014) argues that students will learn

the language if they are required to speak it, further noting that once a student is required

to speak the new language, their fears of speaking the unfamiliar language will begin to

subside. Furthermore, Rivas asserts that in order to learn a new language, one must

listen, absorb, and speak. This allows a person to learn a language as a child would,

which is naturally. An area in which Rivas may differ with some language teachers, is

that she suggests that students need to learn the language as spoken in real life, inferring

that teachers should not be concerned as much with grammar and slang, because that is

how the language is spoken. Many language immersion teachers debate the proper use of

grammar when learning the new language and to what extent students should be held

accountable for speaking grammatically correct at all times. Finally, Rivas (2014)

contends that students need authentic experiences. Not all students can study abroad and

visit another country, but there are local opportunities in many cities, where there are

pockets of the language being spoken by native speakers. This type of authentic

experience is important when becoming proficient in a new language. Immersion

programs allow students to learn in the foreign or target language from 50% of the day to

a full day, depending on the type of immersion program (Rhodes, 2010).

According to parents, the most important goal for their children studying

immersion is student academic success. It has been found that generally students do

extremely well academically after four to five years in an immersion program (Collier &

Thomas, 2004). Typically, students perform well in areas such as reading and listening,

and never quite reach the levels of proficiency in speaking and writing, because this

requires students to produce the language. However, immersion curriculum has been

developed using the American Council for the Teaching of Foreign Languages (ACTFL)

Proficiency Guidelines to provide a more balanced approach to immersion instruction to

ensure that all modes of learning, including reading, listening, speaking, and writing, are evident in the written, taught, and assessed curriculum.

      Dual language immersion. New methodologies for language instruction also include dual language immersion (Morales, 2010; Unger, 2001). Dual language immersion programs offer heritage or non-English speakers the opportunity to learn alongside native English speakers, while immersion programs offered native English speakers the opportunity to learn a foreign language with mostly English speakers. Since the 1950's, much has been learned about foreign language education at the elementary level. In the early years of foreign language development among elementary-aged students, there was little emphasis on the curriculum, funding, articulation across levels of instruction, and teacher training. Without qualified teachers and appropriate instruction, the initial attempts to teach elementary students a second language failed (Rhodes, 2010).

      Collier and Thomas (2004) studied one-way and two-way dual language immersion enrichment models in Houston, Texas and how the programs helped to close the achievement gap. The findings concluded that the two programs helped English Language Learners (ELLs) understand English more proficiently than their heritage language. A one-way dual language immersion program has only one language group being instructed through their two languages. For example, among cities on the United States and Mexican border, there may be students who are of Hispanic-American heritage. Some of these students may be proficient in English but have lost their heritage language. The other group in the school may be proficient in Spanish but in need of

English instruction. The two groups are brought together to learn the same curriculum in both languages (Collier & Thomas, 2004).

In a two-way dual language immersion model, native English speakers are asked to be included with bilingual classmates in a classroom, with the model ideally consisting of 50% from each group, but there could be a minimum of a 70% to 30% ratio to be true to the model. This type of model has been found to address socio-cultural concerns as well, breaking down stereotypes between the two groups (Collier & Thomas, 2004). The Houston Independent School District in Texas, made up of 210,000 students began dual language immersion programs in 1996 at two elementary schools. Because of the success of these programs in serving a population of majority Hispanic students (56%), the District grew to offer 56 one-way and two-way dual language immersion programs (Collier & Thomas, 2004).

Parental Choice World Language Programs

Parents have often been given a choice on the type of world language programming their children should receive in school. Some popular language programming choices among parents are immersion (Ballinger & Lyster, 2011; Day & Shapson, 2001; Potowski, 2004; Rhodes, 2010), dual language (Morales, 2010; Unger, 2001), Montessori (Lopata, Wallace, & Finn, 2005; Rathunde & Csikszentmihalyi, 2005), and International Baccalaureate (Brown & Lauder, 2009; Raywid, 1985; Resnik, 2012). These programs were developed to help students be better prepared for living in a global society. Because of the international flavor these programs offered, many families went to great lengths to ensure their children had these opportunities. Programs such as International Baccalaureate have become more popular at the elementary level with the

Primary Years Program, and Montessori, which has historically been offered through private schools, has expanded into public schools as well. Immersion programs have expanded since its inception in Canada in the 1960's, and have offered a variety of languages for study. Since the 1970's, the United States has offered immersion programs.

Many parents choose immersion language instruction for their children with the understanding that the goal of immersion is to create bilingualism, high levels of literacy in two languages, and allow students to achieve academic success (Collier & Thomas, 2004). With more immersion programs being created across the country, there has been a need to expand to middle and high schools, as well as the college level. For example the Middlebury Portuguese School, Middlebury College, Vermont, offers a highly acclaimed summer immersion experience on campus offering the potential study of nine languages for students of all ages.

As parents and school district staff have asserted, it is extremely important to have well-trained staff deliver foreign language instruction. The same is true for the Montessori and International Baccalaureate programs. Teachers need to be trained beyond the typical educator licensure programs to be able to teach in these programs. They need special certification to teach in a Montessori or International Baccalaureate school. For immersion teachers, it is important to perform at a certain proficiency level according to the ACTFL Proficiency Guidelines.

Purpose of the Study

The purpose of this study is to determine the reading and math outcomes of randomly selected majority culture students participating in an elective, parent choice,

full academic content area Spanish Immersion Program kindergarten through fifth-grade compared to randomly selected same school control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade.

Research Questions

The following posttest post-posttest research questions were used to analyze the effect of randomly selected majority culture students participating in an elective, parent choice, full academic content area Spanish Immersion Program kindergarten through fifth-grade compared to randomly selected same school control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade.

Overarching Posttest Post-Posttest Target Spanish Language of instruction Reading Research Question #1. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish Immersion Program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Reading test scores compared to their spring third-grade NWEA MAP-Reading test scores?

Overarching Posttest Post-Posttest Spanish Target Language of instruction Math Research Question #2. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish Immersion Program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math test scores compared to their spring third-grade NWEA MAP-Math test scores?

Overarching Posttest Post-Posttest English Native Language of instruction Reading Research Question #3. Do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Reading test scores compared to their spring third-grade NWEA MAP-Reading test scores?

Overarching Posttest Post-Posttest English Native Language of instruction Math Research Question #4. Do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math test scores compared to their spring third-grade NWEA MAP-Math test scores?

Overarching Post-Posttest Post-Posttest Target Spanish Language of instruction Compared to English Native Language of instruction Reading Research Question #5. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish Immersion Program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Reading test scores?

Overarching Post-Posttest Post-Posttest Target Spanish Language of instruction Compared to English Native Language of instruction Math Research Question #6. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish Immersion Program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care

academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Math test scores?

Assumptions of the Study

The study has several strong features. The K-5 immersion program and the K-5 content area academic programs were both developed by curriculum experts, teachers, and administrators to ensure equivalent rigor and relevance. Only the delivery of instruction the Spanish immersion or the traditional academic content area English only program, differ in this study. Furthermore, the research school district supports equally the Spanish immersion school program and the traditional academic content area English only program.

Delimitations of the Study

This study will be delimited to students who participated in this study and attended the same elementary school for six consecutive school years kindergarten through fifth-grade, August 2007 through May 2013, for both groups randomly selected majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program and randomly selected same school control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade. Data on reading and math performance was collected during the spring of 2011 and spring of 2013 school years and will be retrospectively included in the study. Study findings will be delimited to randomly selected majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program and randomly selected same school

control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade.

Limitations of the Study

This exploratory study will be confined to third-grade and fifth-grade students (N = 80) participation in a Spanish immersion program and randomly selected same school control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade. Study participants in the first arm (n = 40) will have completed their kindergarten through fifth-grade school years in the Spanish immersion program. Study participants in the second arm (n = 40) will have completed their kindergarten through fifth grade school years in the randomly selected same school control group majority culture students participating in the traditional academic content area English only program. The limited sample size and newly developed academic program may limit the utility and generalizing of the study results and findings.

Definition of Terms

21st Century Skills. 21st Century Skills is used to refer to certain core competencies such as collaboration, digital literacy, critical thinking, and problem-solving that proponents believe will help students succeed in today's society.

Achievement gap. Achievement gap refers to the difference in achievement among minority populations and the majority population.

Advanced level. Advanced level language learners are able to demonstrate their command of the language by communicating on topics that are more than simply about themselves. People are able to discuss current events, community, and stories of national

or international interest. A person who communicates at the advanced level can use the language in past, present, and future tenses, and he or she can be understood easily by native speakers (American Council on the Teaching of Foreign Languages, 2012).

American Council for the Teaching of Foreign Languages. American Council for the Teaching of Foreign Languages (ACTFL) is an organization that is dedicated to the improvement and expansion of the teaching and learning of all languages at all levels of instruction (American Council for the Teaching of Foreign Languages, 2014).

Authentic. Authentic, when referring to language learning, can be used to describe materials created in the target language of study by a native speaker of that language intended for the use of an audience learning the target language. Authentic materials are genuine and not translated into the target language for the purposes of instructing in that language.

Balkanization. Balkanization was originally used to describe the process of fragmentation or division of a region or state into smaller regions or states that are often hostile or non-cooperative with one another.

Bilingual. Bilingual is used to describe a person who is fluent in two languages with the native language identified as *L1* and the second or target language described as *L2*.

Civic engagement. Civic engagement can be defined in numerous ways. Related to 21st Century learning, civic engagement refers to students' willingness to volunteer in a community and possibly solve a problem, which is considered to be an act of personal responsibility. Students who are civically engaged understand their roles and

responsibilities and believe they should do their part and give back to their community (Capuano & Knoderer, 2006).

Cultural competence. Cultural competence describes one's ability to effectively communicate and interact with people of different cultures and demographic backgrounds (*Learning for the 21st century: A report and MILE guide for 21st century skills*, 2002).

Distinguished level. Distinguished level language learners are able to educate other users of the language. They are reflective and can engage in global discussions that are highly abstract. In addition, a distinguished level language learner can be persuasive and discuss hypothetical situations in the target language. Another area that separates the distinguished level language learners from other levels, is that they can speak succinctly and use cultural and historical references to allow them to make the most meaning of what they are expressing with fewer words (American Council for the Teaching of Foreign Languages, 2012).

District criterion reference test (CRT). District criterion reference tests (CRTs) are standardized assessments developed by school districts to evaluate the content knowledge and skills students are expected to master while in school.

Dual language immersion. Dual language immersion describes an environment in which the student population consists of majority language speakers and minority language speakers with dominance in their first language. Ideally, a 1:1 ratio is maintained for these two languages, and the language of instruction involves both the minority and majority languages. Dual language immersion may also be known as two-way immersion, bilingual immersion, or two-way bilingual.

English Language Learner (ELL). English Language Learners (ELLs) describe students who speak a language other than the majority language.

Enrichment. Enrichment refers to an enhancement of the basic educational curriculum.

Global awareness. Global awareness is a term used to describe the ability to use 21st century skills to understand and address global issues by learning from others and working collaboratively. People who are globally aware understand diverse opinions from those of diverse languages and cultures (Learning for the 21st century: A report and MILE guide for 21st century skills, 2002).

Heritage Language. Heritage Language refers to the native language spoken in the classroom in a bilingual language environment.

Higher-order thinking. Higher-order thinking is achieved when one demonstrates the ability to move beyond the concrete to a more abstract way of thinking. People who exhibit higher order thinking skills are able to synthesize, analyze, interpret, and evaluate.

Information literacy. Information literacy is demonstrated when a person shows the ability to know when there is a need for information and then be able to evaluate that information to help solve a problem.

Intellectual curiosity. Intellectual curiosity is a term used to describe one's desire to invest time and energy into learning more about a person, place, thing, or concept. People who have a strong intellectual curiosity typically find themselves trying to figure things out (Sklare, 2011).

Intermediate level. Intermediate level language learners can actually create with the language, and the information being shared is not rehearsed. They can create with the language speaking on familiar topics related to their daily lives. People at this level can survive by asking and answering simple questions and begin to string together sentences typically communicated in the present tense. People at this level are able to be understood by those who are used to communicating with non-native speakers (American Council for the Teaching of Foreign Languages, 2012).

International Baccalaureate. International Baccalaureate is an organization that offers a program to students ages 3-19 designed to help develop the intellectual, personal, emotional, and social skills to live, learn, and work in a globalizing world. The program offers three levels to students beginning with the Primary Years Programme targeting students ages 3-12 or approximately grades PreK-5. The next level of programming is the Middle Years Programme serving students ages 11-16 or grades 6-10. The final level of programming is the Diploma Programme, which serves students ages 16-18 or grades 11 and 12. Students are required to apply for admission to the Diploma Programme.

Language immersion. Language immersion is an approach to foreign language instruction in which the usual curricular activities are conducted in a foreign language.

Majority Language. Majority Language is the language spoken by the majority of people in a given area or region.

Minority Language. Minority Language is the language other than the one spoken by the majority of people.

Montessori method. Montessori method is an educational philosophy developed by Italian physician and teacher Maria Montessori which emphasizes independence,

freedom with choice, and the notion of following the child in terms of learning needs to develop psychological, physical, and social skills.

Norm-referenced test (NRT). Norm-referenced tests (NRTs) are tests or instruments that allow for comparing individual scores to a group score on the same test or instrument. The Norm-referenced tests used in this study are the NWEA-MAP Math and Reading tests.

Novice level. Novice level language learners can communicate in short messages on topics that primarily affect them directly. A person may use isolated words or phrases that have been memorized or rehearsed. At this level, rehearsed is the operative word, because a language learner at this level may not be able to engage in spontaneous dialogue (American Council for the Teaching of Foreign Languages, 2012).

NWEA-MAP. NWEA-MAP tests are norm-referenced tests that stands for Northwest Evaluation Association Measures of Academic Progress.

One-way immersion. One-way immersion describes a language immersion program in which students learn a language other than their native language. Students spend from 50% to 100% of their day engaged in the second language.

Partner language. Partner language is a term used to describe a language other than English that is used for instruction in programs in the United States.

Proficiency Guidelines. Proficiency Guidelines are a set of standards to help foreign language educators measure students and adults in their foreign language development. The Guidelines measure a language learner's ability to read, write, speak, and listen in the target language. This tool developed by the American Council for the Teaching of Foreign Languages uses the levels of novice, intermediate, advanced,

superior, and distinguished to target specific levels of proficiency for the foreign language learner.

Project-based learning. Project-based learning refers to projects three to four weeks in length that require real-world application. Project-based learning typically connects multiple disciplines and requires a rubric-based assessment tool to ensure that students meet the multiple criteria assigned to the particular project

Reasoning. Reasoning is evident in people who have the ability to think about something logically.

Self-directional skills. Self-directional skills describe skills students utilize to demonstrate resourcefulness and effective self-monitoring (*Learning for the 21st century: A report and MILE guide for 21st century skills*, 2002).

Superior level. Superior level language learners are able to communicate accurately and fluently in order to fully participate in communication with a native speaker. They can offer both concrete and abstract perspectives and discuss their interests in areas in which they are competent. The language learner is also able to express his or her opinions on a number of issues and construct hypotheses to engage multiple perspectives (American Council for the Teaching of Foreign Languages, 2012).

Target Language. Target Language refers to the language in which the students are learning other than their native language. This is also known as the second language or L2.

Technological literacy. Technological literacy is a term used to describe a person's ability to use appropriate technology to communicate and solve problems in a responsible manner. In addition, students who are technologically literate can access,

manage, and create information to improve learning in all subject areas (*Learning for the 21st century: A report and MILE guide for 21st century skills*, 2002).

Two-Way Immersion.   Two-Way Immersion describes a language immersion program in which two groups of students, each with a different home language, learn together in a way so that both groups become bilingual and bi-literate in the two languages. (Collier & Thomas, 2004)

Visual literacy. Visual literacy describes the ability of people to make meaning from a visual image that is presented to them (Learning for the 21st century: A report and MILE guide for 21st century skills, 2002).

Significance of the Study

This study has the potential to contribute to research, practice, and policy. It is of significant interest to educators seeking ways to learn about the effectiveness of language immersion programming.

Contribution to research.   There is very little research to date on the effects of majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program utilizing English standardized reading and math assessments. The results of this study, may inform theoretical and practical literature on the effectiveness of language immersion programming for majority culture students.

Contribution to practice. Based on the outcomes of this study, the schools involved and the district may decide to make curricular decisions that could positively impact the language immersion program and benefit majority culture students whose parents want their children to have academic success while obtaining a second world language.

Contribution to policy. Local level policy will be impacted by this study. It is anticipated that if majority culture students who participated in an elective, parent choice, full academic content area Spanish immersion program compared to control group students have at post-posttest English standardized reading and math assessment scores that are equivalent to control group students English standardized reading and math assessment scores who received their instruction in English then decisions regarding curriculum, instruction, and assessment for a greater number of students from within this high achieving school district would be warranted. If students in the Spanish language immersion program perform significantly higher than students in the English program, then further study of the Spanish language immersion program would be warranted to determine possible replication of practices in the English program.

Organization of the Study

The literature review relevant to this study is presented in Chapter 2. This chapter reviews professional literature on language acquisition in young children, examples of successful nationwide immersion and parent choice programs, and preparation of children in the 21st century. Chapter 3 describes the research design, methodology, and procedures that will be used to gather and analyze the data of the study. Chapter 4 reports the research results and findings--including inferential data analysis, tables, and descriptive statistics. Chapter 5 provides conclusions and a discussion of the research findings.

CHAPTER TWO

Review of Literature

Since the 1950's, much has been learned about world language education at the elementary level. In the early years of world--then referred to as *foreign*--language development for elementary-aged students, there was little emphasis on the curriculum, funding, scope and sequence across levels of instruction, and teacher training. Without qualified teachers and appropriate instruction, the initial attempts to teach younger students a second language failed (Rhodes, 2010). Much has changed since those early attempts to teach elementary school aged students a second language.

World language initiatives persist today because parents continue to be the first to understand that their children need a second world language to be equipped to thrive in a global environment by exposure to diverse educational experiences and opportunities at school. Currently, there are several programs available to parents and students throughout the K-12 levels that offer parents a choice in their child's education and are therefore known as "parent choice" programs.

School districts offer parent choice school programs to give students the opportunities they need to compete in a global market. School choice programs were also created to provide desegregation opportunities or create equity within a community, and some help school districts to balance student populations within their boundaries. The following literature review provides examples of popular school programs offered to families to directly address the unique world language and cultural skills that students must possess to thrive in today's, much less tomorrow's, global economy and communities.

21st Century Skills

The term "21st Century Skills" has become an increasingly popular phrase across education in recent years. However, it has been the 21st century for a little more than a decade and school organizations have only recently begun to reform their curriculum with these skills in mind. Even though systematic change has come late for some school districts, the shift in thinking that is being discussed by many and implemented by some is important for today's students and to the future of the global workforce.

21st century skills are made up of core subjects and themes such as language arts, mathematics, science, global awareness, and financial literacy. Also, there are learning skills that can be organized under the three categories of information and communication skills, thinking and problem solving skills, and interpersonal and self-directional skills (*Learning for the 21st century: A report and MILE guide for 21st century skills,* 2002).

Information and communication skills. Information skills include media literacy that enables students to analyze and evaluate information that comes in many forms of media. Moreover, students with information skills understand the role of media in society. Mastery of communication skills ensures that students are able to understand and create oral, written, and multimedia communication in a variety of forms and contexts (*Learning for the 21st century: A report and MILE guide for 21st century skills,* 2002).

Thinking and problem solving skills. Thinking skills include broader terms identified as critical thinking and systems thinking utilized by students to use sound reasoning and make complex choices while understanding the interconnectedness among systems. Skills that are identified under problem solving are problem identification and

formulation and problem solution (Learning for the 21st century: A report and MILE guide for 21st century skills, 2002). Students that exhibit these skills are able to frame, analyze, and solve problems. Lastly, skills known as creativity and intellectual curiosity are linked to thinking and problem solving. Students able to show these skills can develop, implement, and communicate new ideas to others. In addition, students who demonstrate these skills understand the importance of listening and staying open to alternative opinions.

      Interpersonal and self-directional skills. Interpersonal and self-directional skills include: Interpersonal and collaborative skills, self-directional skills, accountability and adaptability skills, and social responsibility skills. Students with interpersonal and collaborative skills demonstrate teamwork and leadership. They also work well with others toward a common goal and respect differing ideas. Students who exhibit self-directional skills are resourceful and are effective at self-monitoring. In addition, they have the ability to transfer their learning to other situations. Accountability and adaptability skills can be observed in students who take personal responsibility and are able to set and meet goals not only for themselves but also for others. Moreover, students with accountability and adaptability skills can operate effectively without specific direction. Finally, students who demonstrate social responsibility exhibit behaviors for the good of the entire community. These students are also considered ethical no matter the situation in which they are placed (Learning for the 21st century: A report and MILE guide for 21st century skills, 2002).

      Business leaders, politicians, and educators understand that the idea of the 21st century skills framework is an important one. It seems that groups who understand

the importance of education believe that students should be able to think critically and solve problems. However this concept is not new. Some people believe that these types of skills are not taught consistently across the country. In fact, it is claimed that if one were to be exposed to this type of learning, then he would be lucky or fortunate (Rotherham & Willingham, 2009). According to Fortune (2014), bilingual children are better problem solvers. Fortune asserts that children develop the ability to solve problems that include conflicting or misleading cues at a young age, and notes that bilingual children can solve problems more quickly than monolingual children.

However, there is a concern that educators will treat 21st century learning like the latest fad or movement in education. Students who need focused intervention such as English language learners or students who come from poverty may miss out on powerful learning opportunities, because they will only be provided content rather than learning skills. In addition, those students who wish to compete in a global market need the ability to communicate effectively with people all over the world. It has been said that students need oral and written communication, time management, critical thinking, problem solving, personal accountability, and the ability to work effectively with others, according to 400 employers surveyed across the country. Those employers believed that these are the areas in which the students are least prepared (DiMartino & Castaneda, 2007). Proficiency in a second language and competency about other cultures are currently creating employment opportunities. Many employers require an increased involvement in the global economy in fields such as international business and tourism to communications and diplomatic jobs. High level and high-paying careers will demand competence in more than one language (Fortune, 2014).

In order to provide effective 21st century learning experiences for all students and specifically students learning a second language, there needs to be a sustained effort to provide on-going professional development to teachers. For example, the Metropolitan School District of Lawrence Township, Indianapolis, Indiana, adopted the 21st century learning philosophy. Lawrence Township is a large Indianapolis school district that is urban and suburban serving over 16,000 students and employing more than 1,000 teachers. The demographics are 50.6% white, 35.1% Black, 7% Hispanic, 5.5% Multiracial, 1.7% Asian, and .1% American Indian. Lawrence Township staff understands that students are growing up in the digital age and need to learn other ways of communicating in addition to paper and pencil (Capuano & Knoderer, 2006). These students are learning about basic literacy, technological literacy, visual literacy, information literacy, global awareness and cultural competence, self-direction, higher-order thinking, and sound reasoning skills. The key to helping the students master all of these skills is to ensure that the teachers understand the skills as well. The district has trained digital literacy coaches and has assigned these coaches across their school district into each school at each level. This school district understands the importance of on-going professional development. Lawrence Township has seen positive results during the four years of the initiative.

Technology plays an important role in language development. Some language acquisition programs use tools such as Skype to enhance the learning experience and provide authentic experiences to language learners. Others use software to help reinforce language concepts or assess them such as the American Council on the Teaching of Foreign Languages (ACTFL) with tools such as Integrated Performance Assessment

(IPA) and the ACTFL Assessment of Performance toward Proficiency in Languages (AAPPL). Students today are thirsty for knowledge and look to sources other than schools to provide them with that knowledge. This is not to say that all technology use improves student learning. It is important to maintain a balance of learning from technology and learning with technology. Drill and practice software fits into the category of learning from technology. When we learn with technology, then the technology is a tool to help us with gathering, analyzing, and reporting information (Cramer, 2007). All of these elements may be used to support second language learning.

Cramer (2007) asserts that integrating technology into one's classroom does not need to be overwhelming. She believes that small steps can be taken over time, perhaps one course at a time. This approach truly helps build on those critical thinking skills addressed in the section of the 21st century skills framework known as "Learning Skills." Although technology is a 21st century tool, it can be used to learn content, enhance language acquisition skills, cover the core subjects and certainly help assess the taught curriculum. With so many resources available to teachers on the web, it would be a disservice to only rely on the standard textbooks and state assessments to drive what is being taught. With international programs such as IB, Montessori, and Immersion, there is a need to effectively use technology. The standard in these programs is similar throughout the world, so the ability to learn across borders is available.

Mass media can be an effective avenue for students learning a second language in an authentic, real-world manner. The Internet is a common way students get their information, in addition to their friends, family, television, etc. Language acquisition classrooms need to move beyond the four walls. Yet, educators have different

perspectives about mass media. On one hand, teachers have discussions about current events in their classrooms. On the other hand, school districts have had to adopt policies protecting teachers and districts from legal issues regarding the discussion of controversial topics. Media literacy refers to both analyzing and creating media (Thoman & Jolls, 2004). Some educators embrace media by sharing newspapers, magazines, video clips or film into their classrooms and second language instruction to bring other cultures to life. We often use the term "sage on the stage" when referring to the traditional teacher approach where the teacher stands in front of the classroom and provides all the knowledge to his or her students. Instead of the sage on the stage approach, we need to move to the teacher as the role of facilitator or "guide on the side." With the right tools and training, teachers can create the 21st century media literate environments in which they seek to truly increase their students' language skills.

　　With language immersion programs, it is critical for students to learn in more authentic ways to make a connection to learning. Students need to be exposed to media or books that originate from the target language country and not only be translated into the target language from an English author (ACTFL, 2014). A multi-disciplinary approach to learning concepts is important for students to be able to transfer what they are learning with language in the classroom to the real world. There are aspects of 21st century skills other than learning skills, including 21st century tools, core subjects, 21st century content and context, and assessment. Students learning a language can visit other countries through study abroad programs and use these opportunities to engage in civic engagement.

Civic engagement has become increasingly popular as a cultural aspect of second language learning through established volunteer activities for students. In fact, students today are more likely to volunteer than a generation ago. Our future is very dependent on the success of each other (Donohue, 2008). Those holding college degrees earn $1 million more in their lifetime than those who do not. In addition, well-educated citizens tend to be more productive, healthier, and more likely to become civically and culturally engaged (Donohue, 2008). Engaging in the community is key for students and it is important for the local economy. If measured correctly, the community engagement experience can be linked to the curriculum. Businesses engaging with schools in a two-way partnership to accomplish this task is critical. Assessing community engagement can be challenging, however, it can be done using non-traditional approaches utilizing the 21st century skills framework.

English Language Learners (ELLs)

There is evidence of the benefits of peer learning in English programs. This can impact other second language learning environments, such as English Language Learner programs. English Language Learners (ELLs) who conversed with native speaking peers to solve problems, showed growth in cognitive, social, and linguistic development. This oral language proficiency had a positive impact on student achievement. English programs for ELLs that use peer talk have proven to be more effective than ones that depend upon only adult language interaction. Students' learning increased from interacting with proficient native speakers (Farnsworth, 2012).

In a study of the effects of interactive writing with kindergarten and first-grade English Language Learners, students were found to do well when given the chance to try

out and practice new language structures. When pushed to continuously improve, the students showed progress. This was because they received positive feedback for trying the language, despite making mistakes (Pilonieta & Williams, 2012). Researchers also found that when primary English Language Learners were prepared and expected to complete an instructional level task, they had success in the target language. This suggests that if students have a strong foundation in the early grades with the structure, they will typically choose to use the target language.

Immersion

There is a need for foreign language instruction and experiences for young students in American schools. Programs such as Montessori, International Baccalaureate, and language immersion programs offer this choice to families. Lauren Johnson (1953) stated that, "the study of foreign language seems to increase the pupils' interest in and to improve their understanding of the native tongue." Johnson also noted that learning a foreign language helps to improve language and grammar skills in their native tongue. What Johnson shared 60 years ago is still relevant today. Although foreign language instruction is taught in a variety of ways, the impact it has on student engagement is apparent. As students become more confident with the language and see the language as useful, then the students will become more motivated to use the language.

With the lessons learned, the United States entered into a new era of foreign language development in young people. New methodologies were developed, such as dual language immersion and one-way and two-way language immersion programs. Dual language immersion programs offered heritage or non-English speakers the opportunity to learn alongside native English speakers. One-way immersion programs

offered native English speakers the opportunity to learn a foreign language with mostly English speakers, while two-way immersion programs allow both English and non-English speaking students the ability to learn English and the partner language within the same classroom. The term partner language is used to describe a language other than English that is used for instruction in programs in the United States. The term *partner language* may be used instead of *target language* to describe those classrooms where there are two groups of students each learning a non-native language.

The American Council on the Teaching of Foreign Languages (ACTFL) has developed Proficiency Guidelines to aid in measuring students' control of the foreign language. The ACTFL offers a scale that measures students' language proficiency levels using criteria of Novice, Intermediate, Advanced, Superior, and Distinguished. Within the Novice, Intermediate, and Advanced levels, there are sub-levels of low, mid, and high. Students within elementary immersion programs typically remain in the Novice to Intermediate levels depending on when they begin second language or (L2) instruction.

Novice. At this level, people can communicate in short messages on topics that primarily affect them directly. A person may use isolated words or phrases that have been memorized or rehearsed. At the novice level, the operative word is rehearsed, because a person at this level may not be able to engage in spontaneous dialogue.

Intermediate. At this level, people can actually create with the language, and the information being shared is not rehearsed. They can create with the language speaking on familiar topics related to their daily lives. People at this level can survive by asking and answering simple questions and begin to string together sentences typically

communicated in the present tense. People at this level are able to be understood by those who are used to communicating with non-native speakers.

Advanced. At this level, a person is able to demonstrate their command of the language by communicating on topics that are more than simply about themselves. People are able to discuss current events, community, and stories of national or international interest. A person who communicates at the advanced level can use the language in past, present, and future tenses, and he or she can be understood easily by native speakers (American Council on the Teaching of Foreign Languages, 2012).

Language immersion, also known as immersion, is a method of teaching a second language in which the second language, or L2, is the vehicle for classroom instruction. Immersion students learn content, such as math, science, and social studies, in the L2. The main purpose of this approach is to develop bilingual students, who are both competent in the L2 and their first language (L1). Immersion programs allow for students to learn in the foreign or target language from 50% of the day to a full day, depending on the type of immersion program. Language immersion has been offered in a variety of ways. One model is the one-way immersion model. One-way immersion is currently used by the Minnetonka Public Schools located in Minnetonka, Minnesota, a suburb of Minneapolis. One-way immersion is when instruction is delivered in the L2 for most or all of the school day. This form is similar to the learning of the L1 in that the second language is learned in a typical environment through meaningful and authentic, real-world exchanges. This method of learning has made immersion education increasingly more and more popular in the United States and Canada (Day & Shapson, 2001).

In one-way language immersion programs, where English is the first language among students, and two-way immersion programs, where English is not the primary language, there have been questions as to how these students perform on English assessments, despite being fully immersed in a language other than English. Typically, students in one-way immersion programs begin to receive English instruction between grades 2-5. Often times, there is a lag in student performance in the first year or two of English instruction implementation, however, once students have received direct instruction in the English language, the English assessment achievement results are positively impacted, thus closing the gap in performance between immersion and English students. (Fortune, 2014).

Fortune (2014) also asserts there is a similar impact on success for two-way language immersion learners. In a two-way immersion program, there is a balance of native English speakers and native speakers of the partner language or L2 integrated into the classroom for the purposes of both groups serving as language models. In two-way language immersion settings, students from different language backgrounds learn English along with a second language. Within the two-way immersion program, students typically show the same results as students in one-way immersion, in that they perform at least as well as their same background peers in English (Collier & Thomas, 2004). There also needs to be a balance in the ability for a student to learn both content and language.

Students have the ability to learn both content and language through a "reciprocal process" (Wesche & Skehan, 2002). With this process, students are able to learn more content as they master a language. In addition, as students begin to master more of a language, they are able to learn more content (Stoller & Tedick, 2003). Language

immersion students can acquire content by being exposed to content from a variety of sources. In addition, the language immersion student needs to understand the importance of revisiting certain content for different purposes, and finally language learners need to understand how to synthesize knowledge from multiple sources (Stoller & Tedick, 2003).

The concern for whether immersion education has a negative impact on the native language has been shown to be ill-founded (Day & Shapson, 2001). Immersion students have shown a similar level of growth in English when compared to their English-only peers. Nonetheless, as immersion students acquire a high level of fluency and functional proficiency, this research reveals that significant gaps remain in students' grammar in the L2 among students in a grade 7 early immersion program among 12 year old students. This research emphasizes the need to encourage competence and confidence in immersion students (Day & Shapson, 2001).

At times, lack of motivation impacts students, and the same can happen with language learners. Students who have teacher directed practice with dialogue in the target language have improved overall student motivation. In one study, language learners in a one-way immersion program were found to speak more Spanish during teacher directed tasks than with their peers, and spoke more or less Spanish depending upon the grade level. Kindergarteners showed the least amount of Spanish production, followed by fifth-grade and sixth-grade, with only a use of Spanish 22-27% of the time in small group activities. The presence or absence of a native Spanish speaking classmate made little difference in the amount of Spanish spoken in the later grades (Ballinger & Lyster, 2011).

Dual Language Immersion

In a dual language immersion classroom, students are taught literacy and academic content in both English and a partner language or L2. This is different than a full immersion program, where students are taught only in the partner language or L2. The goals of dual language immersion programs are to help students develop high levels of language proficiency and literacy in both English and the partner language. The dual language immersion program began in the 1960's in response to a an emerging need to support Spanish speaking children in the United States. By the 1970's, English speaking parents began to see the importance of dual language immersion programs. Typically, dual language immersion programs see students of two target languages both learning English and the target language (Unger, 2001). Unger asserts that in order for dual language immersion programs to be successful there is a need to celebrate the cultural diversity of each group in the classroom and to ensure that each language background is equally valued. Fortune (2014) supports the need for celebrating cultural diversity with her research asserting that "proficiency in a second language and intercultural competency skills open up employment possibilities." Fortune also asserts that beyond economics, the need for bilingual education helps to support students in casting a wider network of those with whom they communicate. Bilingual students can effectively interact with those from a variety of cultural and linguistic backgrounds. As adults, this will positively impact bilingual students' lives by giving them greater access to foreign media and literature, to enhancing their travel experiences.

Potowski (2004) studied dual language immersion classrooms. In the case of four students learning Spanish as their L2, it was interesting to note that the students averaged

using Spanish when speaking with the teacher 82% of the time, while when speaking with peers, the students only used Spanish 32% of the time. This would suggest that teachers need to create situations when students can use the L2 in a safe environment, so they can build confidence in using the language. The expectation is that if students gain strength in the L2, then the L1 will be positively impacted.

Confidence or self-efficacy appears to be another factor in second language learning motivation. Self-efficacy theory relates how well learners feel they are able to do a task with their level of motivation (Erler & Macaro, 2011). Learners need to feel success gained from prior experiences. This is the basis for scaffolded teaching by teachers for all students and not only students learning a second language. In self-efficacy theory, it is argued that the higher the self-efficacy of the participants, the more effort they will expend to complete a task, and the more motivated they will be to persist (Erler & Macaro, 2011).

Morales (2010) performed a study of language identities influences on minority language students in a dual-language immersion program in California. She found that students who thought Spanish to be a prestigious and useful language affected how they saw themselves as Spanish speakers. She shared that English showed itself to be the dominant language and recommended that teachers and administrators remain steadfast in constructing situations that will provide students with the need to speak the target language. Morales (2010) suggested that cultural identity, self-efficacy, and investment for professional advancement dividends are strongly related.

Cummins (2000) shares that in addition to using the target language, students must take in understandable input, as well as receive instruction on form and learning

strategies. How much students practice the target language varies from context to context.

Unger (2001) shares that in order to help students feel confident or motivated to use the target language, then it is important to involve the parents. Unger shares that it is important to provide parent education classes. For example, if English speaking parents take Spanish classes through their children's school, then the students will understand the importance of learning a second language.

Regardless of the immersion program model, it can be concluded that in some cases, students who participate in immersion programs have a higher level of intercultural sensitivity compared to students in an English only program. A study performed with 40 fourth-grade students at the Eisenhower International School in Tulsa, Oklahoma enrolled in French and Spanish foreign language immersion programs found that students in the immersion program had a higher level of intercultural sensitivity compared to students in an English-medium school (Corbaz, 2006). The study compared a mix of 40 French and Spanish immersion fourth-grade students with 42 English-medium fourth-grade students. Students participated in a quasi-experimental research design by completing a short form of Miville-Guzman Universality-Diversity Scale. Six one-way analysis of variance (ANOVA) were used and findings of the study indicated that girls in the foreign language immersion program may have a more positive sensitivity to other cultures. Although this is a small study with mixed results, the fact that girls participating in the foreign language immersion program are more sensitive to other cultures could be a vehicle for reducing racism and intolerance in the United States (Corbaz, 2006).

It has been suggested that parents wish to have more choice in their children's education. There is evidence of this with the increasing number of charter schools across the nation. Kearney and Arnold (1994) discuss the idea of market-driven schools. They suggest that these types of schools are already in existence today with the offering of charter schools. Parents are more in control of where they send their children, and parent choice in schools has been well documented over the past 30 years. Furthermore, it has been stated that there is growing evidence of systematic failure of the school to deal effectively with some student populations. Also, a contributing factor that has impacted the need for school choice is the intensification of particular social problems, including segregation, school violence, and vandalism, the decline of cities, and youth unemployment (Raywid, 1985).

The basic concept behind market-driven schools is that performance drives the resources. Without effective performance, there will not be funding. According to Kearney and Arnold (1994), the market-driven schools approach holds principals and teachers accountable for student learning as opposed to pre-set budgets assigned to schools by the government. Some might argue that market-driven schools provide inequity and cause segregation among populations, and this can occur if not implemented effectively. In order to succeed, market-driven public schools need to be financed equitably and communication about the effective programs need to be made available within the community so families understand the choices that are afforded to them. As a result, some schools offer parent information nights or special events in the community to help all families learn of the choice programs. Related to finance, states need to ensure that state funding is equitable to allow for all students to take advantage of these

opportunities. Otherwise, an unintended consequence to market-driven schools is for parents to take their students out of the "bad schools" and move them to the "good schools." Moore and Davenport (1988) refer to this as the "new improved sorting machine." With the rise of world language education in schools and its positive impact on student achievement, not only within immersion programs, but within other international programs such as International Baccalaureate (IB) and Montessori, it is clear that parents demand to have school choice and give their students an opportunity to compete in a global market.

International Baccalaureate. International Baccalaureate (IB), which began in the 1960's, offers an educational program to reach students ages 3-19. Once consisting of 47 schools in 1978, as of 2010, there are now 3,035 IB schools. The four programs offered are the Primary Years Programme, Middle Years Programme, Diploma Programme, and the IB Career-related Certificate. The IB offers a common framework made up of learner profiles. This consistent approach implemented world-wide has become intriguing to a wider range of families due to the ability to benchmark students across the world and to offer the notion of providing an educational framework consistent with students from around the world. The IB programme also includes a foreign language component and the target language is taught during a portion of the day.

According to Resnik (2012), the recent demand for international education through the IB has come from mainly elite and middle class families. Previously, this type of education targeted privileged children of diplomats and higher-class parents. A reason that this type of program has seen success is because it provides an international rather than state-certified credential (Brown & Lauder, 2009). Because the IB is offered

throughout the world, Resnik suggests this program is causing the denationalization of the education system. She shares that the IB has improved on national education systems by causing them to adopt the IB model and alter current practices within school districts.

Montessori. Montessori education has continued to be a widely sought after option for families. Originally created by Maria Montessori, the Montessori method provided a way for economically disadvantaged students with special needs to learn life skills in a hands-on way.   With her first school, the Children's House, opening in 1907 in Rome, Maria Montessori began to expand. By 1909, the fourth Children's House opened (Pickering, 1992). The Montessori framework offers a foreign language experience along with the study of international cultures. The target language is taught during a portion of the day, as opposed to an immersion program, where all instruction is taught using the L2 or target language.

Lopata, Wallace, & Finn (2005) performed a study comparing the academic achievement of urban fourth-grade and eighth-grade students who attended Montessori and traditional education programs. Students who attended a public Montessori school were compared with students who attended either magnet or non-magnet schools. Language Arts and math achievement was measured. Surprisingly, the hypothesis that the Montessori program would yield significantly higher achievement results was not true. The study showed that although Montessori is a unique program, it was not associated with significantly higher academic achievement.

Rathunde and Csikszentmihalyi (2005) performed a study with middle school Montessori and traditional program students in which motivation was measured. Students in the Montessori program reported higher levels of motivation between sixth-

and eighth-grades compared to students in the traditional programs. Certainly there are limitations to this study, such as some students may be inherently un-motivated to perform in school. These students were not factored out of the study. However, much can be said about the intrinsic motivation that is strengthened among students who have the opportunity to learn in a manner that meets their needs best as a learner. These findings are similar to what Ballinger and Lyster (2011) note regarding confidence playing a role in foreign language development. Confidence and motivation play a key role in student academic success regardless of the program.

For both International Baccalaureate and Montessori programs, there are proponents and opponents for a variety of reasons. However, the notion that parents have a choice in their children's education is the factor that is at the center of this research. Parent choice programs create a market-driven system of choice in education. No one program is the best choice for all students, but more and more in the United States, programs are becoming available to meet the needs of certain populations of families.

Goldwring and Shapira (1993) offer that it is not enough to assume that choice will increase parent satisfaction with their children's education. Choice may be a factor with increasing satisfaction, but it needs to be coupled with other variables such as increased involvement and empowerment. Goldring and Shapira (1993) assert that parents are satisfied with programs they perceive to be unique. Programs such as immersion, Montessori, and IB may be increasing in the United States, but they are also considered to be unique programs for students in that they provide a world language and cultural experience much different than the typical education settings found in most public schools in the United States.

Conclusion

For parents, educators, and business leaders, it is known that students need to be prepared to compete in a global market. Enrolling students in programs with world language instruction will help engage and motivate students in today's classrooms that need to be designed for the 21st century learner. In addition to having a positive impact on the economy, learning a world language will increase intercultural competence (Fortune, 2014). With the rise of programs such as Montessori, IB, and immersion across the United States, it is clear that parents are exercising their right for educational choice. Each of these programs brings an international flavor to the United States public school system that will help students appreciate other cultures and language backgrounds.

Providing immersion programs for students is a necessity for students to compete in a global society. Communication, thinking, and interpersonal skills are essential in the 21st Century, and each of these skills can be developed through an immersion experience. Learning a new language requires a new level of communication for students to access in their brains, and the critical thinking and confidence it takes to communicate in a second language with someone who is a native speaker is crucial for students in the United States to compete with students on a global stage.

Effective language and communication skills are important for all people to achieve success in their careers and personal lives and will allow people to recognize diverse viewpoints and be empathetic toward those who come from a variety of backgrounds and experiences.

CHAPTER THREE

Methodology

The purpose of this study is to determine the reading and math outcomes of randomly selected majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to randomly selected same school control majority culture students participating in a traditional academic content area English only program kindergarten through fifth-grade.

Participants

Students who participated in this study attended the same elementary for six consecutive school years kindergarten through fifth-grade, August 2007 through May 2013, for both groups randomly selected majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program and randomly selected same school control majority culture students participating in a traditional academic content area English only program kindergarten through fifth-grade.

Number of participants. The maximum accrual for this study will be $N = 80$. Study participants will consist of randomly selected majority culture fifth-grade students ($n = 40$) participating in an elective, parent choice, full academic content area Spanish immersion program and randomly selected same school control majority culture students ($n = 40$) participating in the traditional academic content area English only program. All study subjects attended the same elementary school and completed the same academic content area program.

Gender of participants. The gender of the fifth-grade students participating in an elective, parent choice, full academic content area Spanish immersion program was girls *n* = 16 (40%) and boys *n* = 24 (60%). The gender of the fifth-grade students participating in the traditional academic content area English only program was girls *n* = 19 (48%) and boys *n* = 21 (52%). The gender of the study participants was congruent with the research school districts gender demographics for students completing the fifth-grade academic content area program.

Age range of participants. The age range of the students in the three parent condition groups was nine years of age at third-grade posttest data collection to 12 years of age at the fifth-grade post-posttest data collection. All students completed six consecutive years in the research elementary school's full academic content area program. The age range of the study participants was congruent with the research school districts age-range demographics for students in the third-grade through sixth-grade.

Racial and ethnic origin of participants. The racial and ethnic origin of the fifth-grade students participating in an elective, parent choice, full academic content area Spanish immersion program was Hispanic *n* = 1 (2%) and Caucasian *n* = 39 (98%). The racial and ethnic origin of the fifth-grade students participating in the traditional academic content area English only program was Hispanic *n* = 1 (2%) and Caucasian *n* = 39 (98%). The racial and ethnic origin of the study participants was congruent with the research school districts racial and ethnic origin demographics for students completing the fifth-grade academic content area program.

Inclusion criteria of participants. Included study participants consisted of fifth-grade students who attended the same elementary school for six consecutive school years

kindergarten through fifth-grade, August 2007 through May 2013. Two groups of students were randomly selected for participation including one group of majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program and another group of students randomly selected same school control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade.

Method of participant identification. All students who attended the same elementary school for six consecutive school years kindergarten through fifth-grade, August 2007 through May 2013 and whose parents elected their students into the Spanish language immersion program or chose to enroll their students in the traditional academic content area English only program were randomly selected and identified for participation.

Description of Procedures

Research design. The posttest post-posttest experimental, control group, comparative efficacy study design is displayed in the following notation.

Group 1 X_1 Y_1 O_1 O_2

Group 2 X_1 --- O_1 O_2

Group 1 = study participants #1. Randomly selected ($n = 40$) students.

Group 2 = study participants #2. Randomly selected ($n = 40$) students.

X_1 **= study constant**. All students who participated in this study attended the same elementary school August 2007 through May 2013 kindergarten through fifth-grade completing six consecutive years in the research elementary school's full academic content area program. All study subjects completed all posttest third-grade spring

NWEA MAP-Reading and NWEA MAP-Math assessments and all study subjects also completed all post-posttest fifth-grade spring NWEA Reading and Math assessments.

Y_1 = **Study independent variable, target language of instruction, condition #1.**
Students participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade.

--- = **Study control group.** Students participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade.

O_1 = **study posttest dependent measures.** Academic achievement as measured by spring third-grade NWEA MAP-Reading Test Scores and spring third-grade NWEA MAP-Math Test Scores.

O_2 = **study post-posttest dependent measures.** Academic achievement as measured by spring fifth-grade NWEA MAP-Reading Test Scores and spring fifth-grade NWEA MAP-Math Test Scores.

Independent Variable

The study had one independent variable and a control group. Spanish language serves as the study independent variable where students participated in an elective, parent choice full academic content area Spanish immersion program kindergarten through fifth-grade. Control group students participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade.

Description of Independent Variable

Immersion program description. Language immersion is an approach to second language instruction in which the usual learning activities are conducted in a second language. This means that the new language is the medium of instruction as well

as the object of instruction. Immersion classes follow the same curricula, and in some instances, use the same materials (translated into the target language) as those used in the non-immersion schools of their district. The goal of the language immersion classroom is language acquisition. In the early years, immersion teachers realize that students will not understand everything they say. Teachers use body language, visuals, manipulatives, exaggerated facial expressions, and expressive intonation to communicate meaning. In kindergarten, it is common for students to speak English with each other and when responding to their teacher. As the years progress, students naturally use more of the immersion language (Fortune & Tedick, 2003).

The District Language Immersion Model in this study is a school-within-a- school plan in each of the District's elementary schools. The immersion kindergarten option is available as a half-day option or fee-based extended day option. Families who enroll their children in kindergarten are asked to make a six-year commitment to the immersion program. In the sixth-grade, students move to a middle school where they transition to partial immersion. Instruction in the target language occurs in the students' social studies and world language classes at middle school. The rest of the middle school courses are taught in English. At ninth-grade, students will have one class in their target language, with the rest in English. Throughout high school, students will have opportunities to study abroad and to participate in a range of experiences that will expand their knowledge and understanding of global issues--in particular, the issues specific to the country of origin from their target language.

Key Components of the Elementary Program. The target language is the language of instruction for all classroom instruction in kindergarten. The curriculum

parallels the district curriculum in all subjects. Students will be taught to read in the second language until the third-grade. There is direct instruction in English beginning in the third-grade for reading in English. Students will continue to be taught the other subjects in the second language through fifth-grade. After two or three years in an immersion program, students demonstrate fluency and their comprehension skills are comparable to those of native speakers the same age. Research, however, has found that immersion students' second language lacks the same grammatical accuracy, variety, and complexity produced by native speakers. To attain that skill level is a long-term process. Native-like proficiency in every skill area is unlikely. Many immersion schools report that test scores, on state Minnesota Comprehensive Assessments (MCAs) in third-grade are lower than the English or non-immersion classes. This is due to delaying direct instruction in English until third-grade. By fifth-grade, however, evidence indicates that students' English test scores are equal to, or higher than, the non-immersion classes. Students not participating in the immersion language program can select after-school language programs. This option is also offered at the middle school in sixth-grade.

Hours. Students participating in the Spanish immersion program spend approximately 5.5 hours of the 6.75 hours school day in full immersion studying reading, writing, math, science, social studies, and health in the target language. Students begin 45 minutes of English language instruction beginning in third-grade. Students are also exposed to English during physical education, music, media, and lunch/recess periods.

Spanish fluent teachers. Teachers in the Spanish immersion program must be proficient in the target language. Language proficiency is assessed during the interview process by the school principal. Out of the 18 teachers in Grades 3-5 utilize as a sample

for this study, seven of the teachers teach Spanish immersion and 11 teach English in the traditional standard of care academic content area English only program. Two of the seven Spanish immersion teachers consider Spanish as their native language. During the selection process, all teachers are interviewed using a district approved selection tool. Following the standard interview process, immersion teachers are asked questions in the target language. If there is not enough evidence of proficiency based on the teachers' response, then the interviewer administers a formal oral proficiency interview assessment based on the American Council on the Teaching of Foreign Languages (ACTFL) model. Immersion teachers are considered for hire if they perform at a minimum Advanced-Low level based on the ACTFL Proficiency Guidelines. ACTFL guidelines are Novice, Intermediate, Advanced, Superior, and Distinguished. Novice levels through Advanced levels also contain sub-levels of low, mid, and high.

Student selection. Students typically enter the language immersion program at kindergarten. Students who wish to be considered for entrance to the program later than kindergarten must be at the level of the students who are currently in that particular grade level on the local Spanish oral reading fluency assessment. Students who are considered strong candidates for the immersion program are strong readers who have a command of the English language prior to kindergarten.

According to ACTFL, it is important for students to be proficient in the respective target language. Proficiency in the target language means that a student should be able to use that language anywhere or anytime consistently at a specified level. In order to meet proficiency, it is recommended that school districts provide a combination of internal and external assessments that measure both performance and proficiency in reading, writing,

listening, and speaking. Proficiency is measured by ACTFL within their leveled

guidelines. The levels are, respectively, *Novice, Intermediate, Advanced, Superior,* and

Distinguished. There are national standardized assessments that currently align to these

ACTFL guidelines.

Dependent Measures

The study's dependent measures are academic achievement as measured by spring

third-grade (1) NWEA MAP-Reading and (2) NWEA MAP-Math scores and spring fifth-

grade (1) NWEA MAP-Reading and (2) NWEA MAP-Math scores. Reading and math

scores are given in Rasch Units or RIT scores that measure student achievement and

growth and are reported as standard scores and percentile ranks.

Research Questions and Data Analysis

Overarching Posttest Post-Posttest Target Spanish Language of instruction

Reading Research Question #1. Do fifth-grade students who participated in an elective,

parent choice, full academic content area Spanish immersion program kindergarten

through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-

Reading Test Scores compared to their spring third-grade NWEA MAP-Reading Test

Scores?

Analysis. Research Question #1 was analyzed using a dependent *t* test to

examine the significance of the difference between elementary age students' posttest

ending third-grade NWEA MAP-Reading Test Scores compared to their post-posttest

ending fifth-grade NWEA MAP-Reading Test Scores following kindergarten through

fifth-grade participation in an elective, parent choice, full academic content area Spanish

immersion program. A two-tailed .05 alpha level was employed to help control for Type

1 errors. Means and standard deviations were displayed on tables.

Overarching Posttest Post-Posttest Spanish Target Language of instruction Math Research Question #2. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math Test Scores compared to their spring third-grade NWEA MAP-Math Test Scores?

Analysis. Research Question #2 was analyzed using a dependent *t* test to examine the significance of the difference between elementary age students' posttest ending third-grade NWEA MAP-Math Test Scores compared to their post-posttest ending fifth-grade NWEA MAP-Math Test Scores following kindergarten through fifth-grade participation in an elective, parent choice, full academic content area Spanish immersion program. A two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

Overarching Posttest Post-Posttest English Native Language of instruction Reading Research Question #3. Do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Reading Test Scores compared to their spring third-grade NWEA MAP-Reading Test Scores?

Analysis. Research Question #3 was analyzed using a dependent *t* test to examine the significance of the difference between elementary age students' posttest ending third-grade NWEA MAP-Reading Test Scores compared to their post-posttest ending fifth-grade NWEA MAP-Reading Test Scores following kindergarten through

fifth-grade participation in a traditional standard of care academic content area English only program. A two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

Overarching Posttest Post-Posttest English Native Language of instruction Math Research Question #4. Do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math Test Scores compared to their spring third-grade NWEA MAP-Math Test Scores?

Analysis. Research Question #4 was analyzed using a dependent t test to examine the significance of the difference between elementary age students' posttest ending third-grade NWEA MAP-Reading Test Scores compared to their post-posttest ending fifth-grade NWEA MAP-Reading Test Scores following kindergarten through fifth-grade participation in traditional standard of care academic content area English only program. A two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations was displayed on tables.

Overarching Post-Posttest Post-Posttest Target Spanish Language of instruction Compared to English Native Language of instruction Reading Research Question #5. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Reading Test Scores?

Analysis. Research Question #5 was analyzed using an independent t test to

examine the congruence or difference between post-posttest ending fifth-grade NWEA MAP-Reading Test Scores of students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to fifth-grade NWEA MAP-Reading Test Scores of students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade. A two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

Overarching Post-Posttest Post-Posttest Target Spanish Language of instruction Compared to English Native Language of instruction Math Research Question #6. Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Math Test Scores?

Analysis. Research Question #6 was analyzed using an independent *t* test to examine the congruence or difference between post-posttest ending fifth-grade NWEA MAP-Math Test Scores of students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to fifth-grade NWEA MAP-Math Test Scores of students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade. A two-tailed .05 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed on tables.

Institutional Review Board (IRB) for the protection of Human Subjects

Approval Category. The Office of Regulatory Affairs (ORA) has approved the

application for Exempt Educational, Behavioral, and Social Science Research. The

exemption category for this study was provided under 45 CFR 46:101b, category 4. The

research was conducted using routinely collected archival data. A letter of support from

the district was provided for IRB review.

CHAPTER FOUR

Results

Purpose of the Study

The purpose of this study is to determine the reading and math outcomes of randomly selected majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to randomly selected same school control majority culture students participating in the traditional academic content area English only program kindergarten through fifth-grade.

Implementation of the Independent Variable

The District Language Immersion Model in this study is a school-within-a- school plan in each of the District's elementary schools. The immersion kindergarten option is available as a half-day option or fee-based extended day option. Families who enroll their children in kindergarten are asked to make a six-year commitment to the immersion program. In the sixth-grade, students move to a middle school where they transition to partial immersion. Instruction in the target language occurs in the students' social studies and world language classes at middle school. The rest of the middle school courses are taught in English. At ninth-grade, students will have one class in their target language, with the rest in English. Throughout high school, students will have opportunities to study abroad and to participate in a range of experiences that will expand their knowledge and understanding of global issues--in particular, the issues specific to the country of origin from their target language.

Key Components of the Elementary Program. The target language is the language of instruction for all classroom instruction in kindergarten. The curriculum parallels the district curriculum in all subjects. Students will be taught to read in the second language until the third-grade. There is direct instruction in English beginning in the third-grade for reading in English. Students will continue to be taught the other subjects in the second language through fifth-grade. After two or three years in an immersion program, students demonstrate fluency and their comprehension skills are comparable to those of native speakers the same age. Research, however, has found that immersion students' second language lacks the same grammatical accuracy, variety, and complexity produced by native speakers. To attain that skill level is a long-term process. Native-like proficiency in every skill area is unlikely. Many immersion schools report that test scores, on state Minnesota Comprehensive Assessments (MCAs) in third-grade are lower than the English or non-immersion classes. This is due to delaying direct instruction in English until third-grade. By fifth-grade, however, evidence indicates that students' English test scores are equal to, or higher than, the non-immersion classes. Students not participating in the immersion language program can select after-school language programs. This option is also offered at the middle school in sixth-grade.

Hours. Students participating in the Spanish immersion program spend approximately 5.5 hours of the 6.75 hours school day in full immersion studying reading, writing, math, science, social studies, and health in the target language. Students begin 45 minutes of English language instruction beginning in third-grade. Students are also exposed to English during physical education, music, media, and lunch/recess periods.

Spanish fluent teachers. Teachers in the Spanish immersion program must be

proficient in the target language. Language proficiency is assessed during the interview

process by the school principal. Out of the 18 teachers in Grades 3-5 utilize as a sample

for this study, seven of the teachers teach Spanish immersion and 11 teach English in the

traditional standard of care academic content area English only program. Two of the

seven Spanish immersion teachers consider Spanish as their native language. During the

selection process, all teachers are interviewed using a district approved selection tool.

Following the standard interview process, immersion teachers are asked questions in the

target language. If there is not enough evidence of proficiency based on the teachers'

response, then the interviewer administer applies a formal oral proficiency interview

assessment based on the American Council on the Teaching of Foreign Languages

(ACTFL) model. Immersion teachers are considered for hire if they perform at a

minimum Advanced-Low level based on the ACTFL Proficiency Guidelines. ACTFL

guidelines are Novice, Intermediate, Advanced, Superior, and Distinguished. Novice

levels through Advanced levels also contain sub-levels of low, mid, and high

Dependent Measures

The study's dependent measures are academic achievement as measured by spring

third-grade (1) NWEA MAP-Reading and (2) NWEA MAP-Math scores and spring fifth-

grade (3) NWEA MAP-Reading and (4) NWEA MAP-Math scores. Reading and math

scores are given in Rasch Units or RIT scores that measure student achievement and

growth and are reported as standard scores and percentile ranks.

Research Question #1 Results

Table 1 displays results for the first hypothesis: Do fifth-grade students who

participated in an elective, parent choice, full academic content area Spanish immersion

program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Reading Test Scores compared to their spring third-grade NWEA MAP-Reading Test Scores?

As found in Table 1 posttest ending third-grade NWEA MAP-Reading Test Scores $M = 196.02$ $(SD = 46.18)$ compared to post-posttest ending fifth-grade NWEA MAP-Reading Test Scores $M = 227.07$ $(SD = 9.58)$ following kindergarten through fifth-grade participation in an elective, parent choice, full academic content area Spanish Immersion Program was statistically significantly different rejecting the null hypothesis in the direction of improved NWEA MAP-Reading Test Scores where dependent $t(39) = 4.05$, $p < .001$ (two-tailed), $ES = 1.11$.

Table 1

*Dependent t Test Examination of the Difference Between Elementary Age Students'
Posttest Ending Third-Grade NWEA MAP-Reading Test Scores Compared to Their Post-
Posttest Ending Fifth-Grade NWEA MAP-Reading Test Scores Following Kindergarten
Through Fifth-Grade Participation in an Elective, Parent Choice, Full Academic Content
Area Spanish Immersion Program.*

	NWEA MAP-Reading RIT Scores[a]					
Source of Data	End of Third-Grade Posttest		End of Fifth-Grade Post-Posttest			
	M (*SD*)		*M* (*SD*)	*ES*	*t*	*p*
Spanish Immersion Program	196.02 (46.18)		227.07 (9.58)	1.11	4.05	< .001[b]

[a]*Note*. Fifth-Grade Reading Level Score Conversions: 210 = Below Grade Level
Performance; 212 = Meets Grade Level Performance; and 214 = Exceeds Grade Level
Performance.
[b]*Note*. Significant (two-tailed); *df* = 39.

Research Question #2 Results

Table 2 displays results for the second hypothesis: Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math Test Scores compared to their spring third-grade NWEA MAP-Math Test Scores?

As found in Table 2 posttest ending third-grade NWEA MAP-Math Test Scores $M = 197.42$ $(SD = 46.22)$ compared to post-posttest ending fifth-grade NWEA MAP-Math Test Scores $M = 238.72$ $(SD = 14.70)$ following kindergarten through fifth-grade participation in an elective, parent choice, full academic content area Spanish Immersion Program was statistically significantly different rejecting the null hypothesis in the direction of improved NWEA MAP-Math Test Scores where dependent $t(39) = 4.99$, $p < .0001$ (two-tailed), $ES = 1.35$.

Table 2

*Dependent t Test Examination of the Difference Between Elementary Age Students'
Posttest Ending Third-Grade NWEA MAP-Math Test Scores Compared to Their Post-
Posttest Ending Fifth-Grade NWEA MAP-Math Test Scores Following Kindergarten
Through Fifth-Grade Participation in an Elective, Parent Choice, Full Academic Content
Area Spanish Immersion Program.*

| | NWEA MAP-Math RIT Scores[a] | | | | |
| | End of Third-Grade Posttest | End of Fifth-Grade Post-Posttest | | | |
Source of Data	M (SD)	M (SD)	ES	t	p
Spanish Immersion Program	197.42 (46.22)	238.72 (14.70)	1.35	4.99	$< .0001$[b]

[a]*Note*. Fifth-Grade Math Level Score Conversions: 218 = Below Grade Level
Performance; 221 = Meets Grade Level Performance; and 223 = Exceeds Grade Level
Performance.
[b]*Note*. Significant (two-tailed); *df* = 39.

Research Question #3 Results

Table 3 displays results for the third hypothesis: Do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Reading Test Scores compared to their spring third-grade NWEA MAP-Reading Test Scores?

As found in Table 3 posttest ending third-grade NWEA MAP-Reading Test Scores $M = 202.97$ $(SD = 11.57)$ compared to post-posttest ending fifth-grade NWEA MAP-Reading Test Scores $M = 219.02$ $(SD = 12.32)$ following kindergarten through fifth-grade participation in a traditional standard of care academic content area English only program was statistically significantly different rejecting the null hypothesis in the direction of improved NWEA MAP-Reading Test Scores where dependent $t(39) = 11.94$, $p < .0001$ (two-tailed), $ES = 1.35$.

Table 3

*Dependent t Test Examination of the Difference Between Elementary Age Students'
Posttest Ending Third-Grade NWEA MAP-Reading Test Scores Compared to Their Post-
Posttest Ending Fifth-Grade NWEA MAP-Reading Test Scores Following Kindergarten
Through Fifth-Grade Participation in a Traditional Standard of Care Academic Content
Area English Only Program.*

	NWEA MAP-Reading RIT Scores[a]					
	End of Third-Grade Posttest	End of Fifth-Grade Post-Posttest				
Source of Data	*M* (*SD*)	*M* (*SD*)	*ES*	*t*	*p*
English Only Program	202.97 (11.57)	219.02 (12.32)	1.34	11.94	< .0001[b]

[a]*Note*. Fifth-Grade Reading Level Score Conversions: 210 = Below Grade Level
Performance; 212 = Meets Grade Level Performance; and 214 = Exceeds Grade Level
Performance.
[b]*Note*. Significant (two-tailed); *df* = 39.

Research Question #4 Results

Table 4 displays results for the fourth hypothesis: Do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math Test Scores compared to their spring third-grade NWEA MAP-Math Test Scores?

As found in Table 4 posttest ending third-grade NWEA MAP-Math Test Scores $M = 208.30$ $(SD = 8.61)$ compared to post-posttest ending fifth-grade NWEA MAP-Math Test Scores $M = 227.85$ $(SD = 39.05)$ following kindergarten through fifth-grade participation in a traditional standard of care academic content area English only program was statistically significantly different rejecting the null hypothesis in the direction of improved NWEA MAP-Math Test Scores where dependent $t(39) = 3.35, p < .01$ (two-tailed), $ES = 3.35$.

Table 4

*Dependent t Test Examination of the Difference Between Elementary Age Students'
Posttest Ending Third-Grade NWEA MAP-Math Test Scores Compared to Their Post-
Posttest Ending Fifth-Grade NWEA MAP-Math Test Scores Following Kindergarten
Through Fifth-Grade Participation in a Traditional Standard of Care Academic Content
Area English Only Program.*

	NWEA MAP-Math RIT Scores[a]				
	End of Third-Grade Posttest	End of Fifth-Grade Post-Posttest			
Source of Data	*M* (*SD*)	*M* (*SD*)	*ES*	*t*	*p*
English Only Program	208.30 (8.61)	227.85 (39.05)	0.82	3.35	< .01[b]

[a]*Note*. Fifth-Grade Math Level Score Conversions: 218 = Below Grade Level
Performance; 221 = Meets Grade Level Performance; and 223 = Exceeds Grade Level
Performance.
[b]*Note*. Significant (two-tailed); *df* = 39.

Research Question #5 Results

Table 5 displays results for the fifth hypothesis: Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Reading Test Scores?

As found in Table 5 post-posttest ending fifth-grade NWEA MAP-Reading Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program $M = 227.07$ ($SD = 9.58$) compared to post-posttest ending fifth-grade NWEA MAP-Reading Test Scores for students in a traditional standard of care academic content area English only program $M = 219.02$ ($SD = 12.32$) was statistically significantly different rejecting the null hypothesis in the direction of greater post-posttest NWEA MAP-Reading Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program where independent $t(78) = 3.22, p <$ .01 (two-tailed), $ES = 0.73$.

Table 5

Independent t Test to Examination of the Congruence or Difference Between Post-Posttest Ending Fifth-Grade NWEA MAP-Reading Test Scores of Students Who Participated in an Elective, Parent Choice, Full Academic Content Area Spanish Immersion Program Kindergarten Through Fifth-Grade Compared to Fifth-Grade NWEA MAP-Reading Test Scores of Students Who Participated in the Traditional Standard of Care Academic Content Area English Only Program Kindergarten Through Fifth-Grade.

| | Post-Posttest Between Groups Comparison | | | | |
| | Spanish Immersion Program End of Fifth-Grade | English Only Program End of Fifth-Grade | | | |
Source of Data	M (SD)	M (SD)	ES	t	p
NWEA Reading RIT Scores[a]	227.07 (9.58)	219.02 (12.32)	0.73	3.22	$< .01$[b]

[a]*Note*. Fifth-Grade Reading Level Score Conversions: 210 = Below Grade Level Performance; 212 = Meets Grade Level Performance; and 214 = Exceeds Grade Level Performance.
[b]*Note*. Significant (two-tailed); $df = 78$.

Research Question #6 Results

Table 6 displays results for the sixth hypothesis: Do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Math Test Scores?

As found in Table 6 post-posttest ending fifth-grade NWEA MAP-Math Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program $M = 238.72$ ($SD = 14.70$) compared to post-posttest ending fifth-grade NWEA MAP-Math Test Scores for students in a traditional standard of care academic content area English only program $M = 227.85$ ($SD = 39.05$) were not statistically significantly different so the null hypothesis was not rejected indicating statistical equipoise for post-posttest NWEA MAP-Math Test Scores where independent $t(78) = 1.63$, $p = .107$ (two-tailed), $ES = 0.40$.

Table 6

Independent t Test to Examination of the Congruence or Difference Between Post-Posttest Ending Fifth-Grade NWEA MAP-Math Test Scores of Students Who Participated in an Elective, Parent Choice, Full Academic Content Area Spanish Immersion Program Kindergarten Through Fifth-Grade Compared to Fifth-Grade NWEA MAP-Math Test Scores of Students Who Participated in the Traditional Standard of Care Academic Content Area English Only Program Kindergarten Through Fifth-Grade.

	Post-Posttest Between Groups Comparison				
Source of Data	Spanish Immersion Program End of Fifth-Grade M (SD)	English Only Program End of Fifth-Grade M (SD)	ES	t	p
NWEA Math RIT Scores[a]	238.72 (14.70)	227.85 (39.05)	0.40	1.63	.107[b]

[a]*Note.* Fifth-Grade Math Level Score Conversions: 218 = Below Grade Level Performance; 221 = Meets Grade Level Performance; and 223 = Exceeds Grade Level Performance.
[b]*Note.* Not Significant (two-tailed); *df* = 78.

CHAPTER FIVE

Conclusions and Discussion

The following conclusions may be drawn from the study for each of the six

research questions.

Research Question #1 Conclusion

Results for the first hypothesis, do fifth-grade students who participated in an

elective, parent choice, full academic content area Spanish immersion program

kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade

NWEA MAP-Reading Test Scores compared to their spring third-grade NWEA MAP-

Reading Test Scores, indicate statistical improvement in reading over time for students

participating in the parent choice, full academic content area Spanish immersion

program. A fifth-grade mean post-posttest NWEA MAP-Reading Test Score of 227

exceeds grade level performance and is congruent with a percentile rank of 85, a standard

score of 115, and a stanine score of 7, which is the lowest stanine in the above average

range. Given this level of measured progress over time, third-grade to fifth-grade, it may

be asserted that students in the Spanish Immersion Program are benefiting from learning

in two languages--Spanish and English--and furthermore it may be posited that the results

of their instruction are reflected in the required standardized English language school

assessments. Of further importance is that these students are succeeding in required

coursework while also acquiring a second world language at a very young age.

Research Question #2 Conclusion

Results for the second hypothesis, do fifth-grade students who participated in an

elective, parent choice, full academic content area Spanish immersion program

kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math Test Scores compared to their spring third-grade NWEA MAP-Math Test Scores, indicate statistical improvement in math over time for students participating in the parent choice, full academic content area Spanish immersion program. A fifth-grade mean post-posttest NWEA MAP-Math Test Score of 238 exceeds grade level performance and is congruent with a percentile rank of 87, a standard score of 117, and a stanine score of 7, which is the lowest stanine in the above average range. Given this level of measured progress over time, third-grade to fifth-grade, it may be asserted that students in the Spanish Immersion Program are benefiting from learning in two languages--Spanish and English--and furthermore it may be posited that the results of their instruction are reflected in the required standardized English language school assessments. Of further importance is that these students are succeeding in required coursework while also acquiring a second world language at a very young age.

Research Question #3 Conclusion

Results for the third hypothesis, do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Reading Test Scores compared to their spring third-grade NWEA MAP-Reading Test Scores, indicate statistical improvement in reading over time for students participating in a traditional standard of care academic content area English only program. A fifth-grade mean post-posttest NWEA MAP-Reading Test Score of 219 exceeds grade level performance and is congruent with a percentile rank of 68, a standard score of 107, and a stanine score of 6, which is the highest stanine in the average range. Given this level of

measured progress over time, third-grade to fifth-grade, it may be asserted that students in a traditional standard of care academic content area English only program are benefiting from learning and furthermore it may be posited that the results of their instruction are reflected in the required standardized English language school assessments.

Research Question #4 Conclusion

Results for the fourth hypothesis, do fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade lose, maintain, or improve their spring fifth-grade NWEA MAP-Math Test Scores compared to their spring third-grade NWEA MAP-Math Test Scores, indicate statistical improvement in reading over time for students participating in a traditional standard of care academic content area English only program. A fifth-grade mean post-posttest NWEA MAP-Math Test Score of 227 exceeds grade level performance and is congruent with a percentile rank of 66, a standard score of 106, and a stanine score of 6, which is the highest stanine in the average range. Given this level of measured progress over time, third-grade to fifth-grade, it may be asserted that students in a traditional standard of care academic content area English only program are benefiting from learning and furthermore it may be posited that the results of their instruction are reflected in the required standardized English language school assessments.

Research Question #5 Conclusion

Results for the fifth hypothesis, do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish immersion program

kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Reading Test Scores, indicate that fifth-grade NWEA MAP-Reading Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program compared to post-posttest ending fifth-grade NWEA MAP-Reading Test Scores for students in a traditional standard of care academic content area English only program was statistically significantly different rejecting the null hypothesis in the direction of greater post-posttest NWEA MAP-Reading Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program. However, post-posttest NWEA MAP-Reading Test Scores while found to be statistically greater for students in the Spanish immersion program, students in the English only program also had measured fifth-grade NWEA MAP-Reading Test Scores found to exceed grade level performance.

Research Question #6 Conclusion

Results for the sixth hypothesis, do fifth-grade students who participated in an elective, parent choice, full academic content area Spanish Immersion Program kindergarten through fifth-grade compared to fifth-grade students who participated in a traditional standard of care academic content area English only program kindergarten through fifth-grade have congruent or different fifth-grade NWEA MAP-Math Test Scores, indicate that fifth-grade NWEA MAP-Math Test Scores for students in an elective, parent choice, full academic content area Spanish Immersion Program compared to post-posttest ending fifth-grade NWEA MAP-Math Test Scores for students in a traditional standard of care academic content area English only program were not

statistically significantly different so the null hypothesis was not rejected indicating

statistical equipoise between post-posttest NWEA MAP-Math Test Scores for students in

an elective, parent choice, full academic content area Spanish Immersion Program and

students in a traditional standard of care academic content area English only program.

Furthermore, post-posttest NWEA MAP-Math Test Scores while not statistically

significantly different were observed to exceed grade level performance for both groups.

Discussion

It is clear from the study results that students participating in the programs of this

research are making significant academic progress as measured by norm-referenced

reading and math test results over time, third-grade to fifth-grade. It is also remarkable

that students who are learning basic skills at the elementary level in a second language,

Spanish, are doing so at an observed above grade level pace suggesting that they will be

ready for middle school English and math coursework with an advanced promise of

success in future second language Spanish coursework as well.

Contribution to policy. Due to the results of this study, local level policy will be

impacted. Spanish immersion students performed as well or better than English only

program students on the NWEA-Math and Reading assessments. The results appear

counterintuitive to what one might expect due to the fact that Spanish immersion students

were administered an English test while only receiving direct English instruction

beginning in third-grade. This study provides evidence that when students are challenged

with programming beyond what one may expect, that they can have a great deal of

success. Moreover, students can have success at learning a second language at an early

age. The immersion method of learning has made immersion education increasingly

more and more popular in the United States and Canada (Day & Shapson, 2001).

Bilingual education may help to improve global economic outcomes, as language

becomes less of a barrier within communities, nationally, and internationally. Fortune

(2014) asserts that beyond economics, the need for bilingual education helps to support

students in casting a wider network of those with whom they communicate. Supported

by innovative school programs bilingual students can effectively interact with those from

a variety of cultural and linguistic backgrounds. As adults, this will positively impact

bilingual students' lives by giving them greater access to foreign media and literature and

to enhancing their travel experiences. This is one model to help students reach their

potential through 21st century learning. Proficiency in a second language and

competency about other cultures are also currently creating employment opportunities.

Many employers require an increased involvement in the global economy in fields such

as international business, tourism, communications, and diplomatic service. High level

and high-paying careers will demand competence in more than one language (Fortune,

2014). The option to have language immersion education available to students should

therefore be continued. Based on this study school districts from around the country can

look to an immersion model to help their students be prepared for a global economy.

Contribution to practice. Based on the outcomes of this study, schools and

districts with language immersion programs including the school utilized in this study can

make curricular decisions that will positively impact the language immersion program

and benefit majority culture students whose parents want their children to have academic

success while obtaining a second world language. A key component of making a

language immersion program a success is the continuation of giving parents a choice in

their children's education. Parents are more in control of where they send their children, and parent choice in schools has been well documented for decades (Raywid, 1985). With the rise of world language education in schools and its positive impact on student achievement, not only within immersion programs, but within other international programs such as International Baccalaureate and Montessori, it is clear that parents demand to have school choice and give their students an opportunity to compete in a global market.

Contribution to research. There has been very little research to date on the effects of majority culture students participating in an elective, parent choice, full academic content area Spanish immersion program utilizing English standardized reading and math assessments. The results of this study, may inform theoretical and practical literature on the effectiveness of language immersion programming for majority culture students. There is clearly a need to follow elementary immersion students through middle and high school to determine how learning in this way will impact their post secondary choices. Specific to the district used in this study, the immersion program is available to students through middle school and will be expanding to the high school beginning in the 2015-16 school year. It will be important for the district to continue to monitor the performance of these students as they transition to the high school and beyond. Districts can study which types of college language immersion programs students attend, the areas of study in which students focus, the career paths they take, and follow up with survey data to learn about how the early learning immersion experience impacted the choices students made throughout their schooling. The information school districts can gain from students will be invaluable as staff plan 21st century curriculum

now and into the future.

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