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**THE RELATIONSHIP BETWEEN FORMAL EDUCATION IN ARABIC AND
STUDENTS' ATTITUDES TOWARDS LANGUAGES AND ENGLISH AND
MATHEMATIC PROFICIENCY**

by

ANAM AL-FADLEY

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

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2010

MAJOR: CURRICULUM AND INSTRUCTION

Approved by:

Advisor

Date

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DEDICATION

I dedicate this dissertation to every member of my family who were always available to support me. I would like also to dedicate this dissertation to every person who helped make it see the light of the day.

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My most sincere appreciation is expressed to the members of my doctoral committee. First, to Dr. Navaz Bhavnagri, the chair, for her advice, commitment, care and support in every step of my journey towards accomplishing this project. Second, to Dr. Marc Rosa, my academic advisor, for his availability to solve any problem and answer any question or concern. Finally, thanks to Dr. Jacqueline Tilles and Dr. Bruce Morgan and Dr. Ava Zeineddin for their guidance and their contribution in my committee.

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Chapter 1: Introduction

One of the biggest challenges that teachers face in the educational system of the United States is the rapid increase in the number of culturally and linguistically diverse (CLD) students (Herrera & Murry, 2005; Baker, 2006). The National Center for Educational Statistics (NCES) (2008) reported that the number of children ages 5-17 years who spoke languages other than English at home increased from 3.8 million to 10.8 million from 1979-2006. Furthermore, the same-aged children who spoke English with difficulty increased from 3 percent to 6 percent, from the year 1979 and 2000. These statistics did not change measurably from 2000-2006. Additionally, in a report prepared for the US census bureau, Shin and Bruno (2003) listed the ten most frequently used languages at home in the US other than English and Spanish. One of the ten languages was Arabic. Another commonly identified problem with respect to CLD students in the US and other countries with increasing rate of immigration is underachievement and high dropout rate (Baker, 2006). For example, Thomas and Collier (1997) voiced their concern about the increase in the number of language minority students who do not complete high school. According to them, those “school leavers” show low academic achievement because they are in less effective bilingual program, ESL pullout, with no schooling in the first language (L1).

Given that there is a substantial increase in the number of CLD students in the United States, this study undertakes an examination of this population. There is, however, no easy formula to achieve this goal. Helping CLD students requires policymakers and educators to consider two important issues: 1) the importance of the learner’s first language and 2) CLD students’ attitudes towards first language (L1) and second language (L2). This chapter is divided into two sections. The first section discusses the background of the proposed study while the second section discusses the proposed study.

Background

Since the language minority students who participate in this study are Arabic-speaking students, an introduction on the history of Arabs in United States is discussed next. After that, (1) the role of the first language and (2) attitudes towards L1 and L2 are discussed.

History of Arabs in America. According to Suleiman (1999), Arab immigration to North America has come in two main waves. The first wave occurred from the 1870s through World War II and the second wave began after World War II and continued to the present. Suleiman also indicated that most Arab immigrants in the first wave came from the greater Syria region, and in particular present-day Lebanon. These immigrants were predominantly Christian. Arab immigrants in the second wave came from different parts of Arab world and in particular from: Palestine, Lebanon, Syria, Egypt, Iraq and Yemen. They were mostly Muslim.

Arab Americans live in all 50 states. However, 94% of Arab Americans live in five metropolitan areas: Detroit, Los Angeles, New York/New Jersey, Chicago, and Washington, DC. The Iraqi and Assyrian/Chaldean communities reside predominately in Michigan, Illinois, and California (Suleiman, 1999). According to Cankar (2000), after the Gulf War of 1991, the largest number of new Arab immigrants to Michigan came from Iraq, Lebanon, and Jordan. Today, eighty percent of Arab families in Michigan reside in three metropolitan counties: Macomb, Oakland, and Wayne.

According to Samhan (2006),

By far the most concentrated areas of Arab American settlement, however, are in southeastern Michigan, especially the distinctly Arabic neighborhoods in the city of Dearborn. Michigan's vibrant expanse of ethnic, civic, and religious institutions have made it the new cultural and political magnet for the community nationwide. Unlike anywhere else in the country, Arab Americans make up 20% of Dearborn's population and more than 40% of the students enrolled in public schools. (p. 4)

Samhan (2006) also asserted that Arab Americans, as an ethnic group, value education. Forty percent hold bachelor or graduate degrees, 17% have obtained a post-graduate degree and 85% of Arab-Americans have high school diplomas. Altaf (n.d.), on the other hand, reported that 7% are in graduate schools, 22% are in colleges, 58% are enrolled in elementary and high school and 13% attend pre-school.

Given that there is an increase in the Arab American population of Dearborn in Wayne county, Michigan since the Gulf War of 1991 (Cainkar, 2000) and given that this community is committed to educational ambition, there is a need to examine this population's educational attainment. Therefore, this investigator focuses on educational experiences of this population.

The Role of first language. It is important to realize that not all non-native speakers come to American schools with an equal academic experience. Students come from diverse backgrounds with some individuals having adequate academic experience, with others having limited or no academic experience. According to Freeman and Freeman (2002), language learners are serviced in programs, which assume that all students are equal. The authors argue that it is important to identify the various types of English language learners. They divide English language learners into three groups: 1) Newly arrived with adequate formal schooling, 2) newly arrived with limited formal schooling, and 3) long-term English learners. Only the first two groups are discussed in this study.

The first group, the newly arrived with adequate formal schooling, consists of students with two defining characteristics. They have arrived in the U.S. within the last five years, and they have had adequate formal schooling in their native country. Freeman and Freeman (2002) showed that having strong educational background and literacy in the students' first language, helps these students to catch up academically at a relatively fast pace since they have already

developed academic language and skills in their first language (L1). The theoretical basis for this is that literacy skills of their L1 will transfer to their content-areas in English. However, this group struggles hard to achieve the same level as native English speakers on standardized tests. Furthermore, even though many of these students have learned English as a foreign language in their native countries; they often lack conversational fluency in English.

The second group, the newly arrived with limited formal schooling, includes students who arrived in the U.S. during the last five years with limited formal schooling and literacy in their L1 as well as limited English proficiency. Freeman and Freeman (2002) showed that the limited formal schooling in these students' home countries results in these students experiencing difficulty in reading and writing in their L1; lacking basic concepts in different subject areas, falling behind their grade level in math, facing difficulty in developing conversational fluency in English; scoring low in standardized tests, and finally, lacking the necessary understanding of the dynamic of school organization and the way they should behave.

As a result of the above, CLD students' L1 academic knowledge which develops through formal education can significantly benefit the English language learners' (ELLs) academic performance in their L2. The L1 academic knowledge can affect ELLs' academic performance in L2 in two ways: First, it provides the academic content knowledge which can help these students to develop academic language proficiency and academic achievement in L2. Second, it develops the literacy skills in L1, which can transfer to L2.

Most notably, Cummins' theories on bilingualism (Cummins, 1981a, 1981b, 1989, 2000; Baker, 2006) provide considerable evidence for L1 effects on academic language proficiency and academic achievements in L2. Cummins (1989) regarded the underlying cognitive/academic proficiency which is common across languages and which he named "common underlying

proficiency” (CUP) as an essential tool for the transfer of the cognitive/academic or literacy-related skills to occur. He claims that transfer from the minority language to the majority language is more likely to occur when there is a greater exposure to literacy in the majority language and a social pressure to acquire it. Cummins (1989) proposed the concept of CUP as opposed to Separate Underlying Proficiency (SUP). Cummins formalized his thinking in a theory in bilingualism known as the balance theory.

One important role of formal education in L1 is also stressed through the goal in developing children’s literacy skills, which are considered good predictors of their academic success. Establishing L1 literacy skills is believed to be crucial for these skills to be transferred from L1 to L2. According to Krashen (1996), the issue of literacy transfer can be addressed by presenting the following three-fold argument: 1) The underlying process of reading is similar across languages even with dissimilar languages; 2) the process of literacy development is similar across languages; and 3) There is a positive correlation between literacy development in the first language and the second language.

There are also empirical studies (Bosher & Owekamp, 1992; Calderon, 2003; Carson & Kuehn, 1992; Carson, Carrell, Silberstein, Kroll & Kuehn, 1990; Dakroub, 2002; Earl-Castillo, 1990; García-Vázquez, Vázquez, López & Ward, 1997; Jiang & Kuehn, 2001; Laija-Rodriguez, Ochoa & Parker, 2006; Meschyan & Hernandez, 2002; ; Padilla & Gonzalez, 2001; Ramirez & Shapiro, 2007; Shepherd, 2006; Sparks, Patton, Ganschow, Humbach & Javorsky, 2008; Upton & Lee-Thompson, 2001; Wakabayashi, 2002; Walter, 2004; Wang, Park & Lee, 2006) that emphasize the importance of formal education in L1 and native language proficiency as a basis for developing primary academic knowledge and literacy skills which can be transferred easily to the L2. These studies argued that this transfer might help English language learners realize

academic achievement and narrow the achievement gap between them and the majority language students.

Accordingly, it appears that formal education in L1 is a necessary step in developing the needed academic knowledge and literacy skills upon which the CLD students can rely in their L2 academic achievement. Thus, this investigator examined the relationship between formal education that CLD students received in their home land and their English and mathematics proficiency. Another factor equally important is CLD students' attitudes towards L1 and L2. These attitudes are discussed in the next section.

Attitudes towards L1 and L2. In addition to realizing the importance of L1, CLD students' attitudes toward L1 and L2 can also have a direct impact on CLD students' English language proficiency and academic achievement. For example, Ellis (1994) indicated the great effect of learner attitudes towards L2 on L2 proficiency.

According to Baker (1988), attitude is a hypothetical construct which cannot be observed directly but it can be inferred thus help explain particular behaviors. She also regarded attitude to a language as a central issue in development or decay of that language. This can explain the idea behind her theory of input and output. Baker (1988) argued that attitude is considered to be a causal or input variable when it causes certain actions or behaviors, while it is an output or outcome variable when a specific action leads to a particular attitude.

One model that specifically discussed the role of learner's attitudes towards L2 was Gardner's socio-educational model. There are four components in Gardner's (1985) model: (1) social and cultural background, (2) individual differences (intelligence, language aptitude, motivation/attitude and situational anxiety), (3) learning context (formal or informal) and finally (4) the outcomes which can be linguistic or non linguistic. Only two components of Gardner's

model are of an interest of the proposed study: the second component, individual differences and the last component, the outcomes. These are discussed in detail in chapter 2.

To the best of this researcher's knowledge, there is little research that investigates the effect of students' attitudes towards L1 on L2 proficiency (Lee, 2002; Sanchez, 2006). As for the impact of attitudes towards L2 on L2 proficiency, a number of studies (Bialystok & Frohlich, 1978; Gardner, Masgoret & Tremblay, 1999, 1999; Masgoret & Gardner, 2003; Nguyen, Shin & Krashen, 2001; Randhawa & Korpan, 1973; Ushida, 2005; Yager, 1998) showed that there is a relationship between attitudes towards L2 and proficiency in that L2. Since attitudes towards L1 and L2 play a significant role in students' academic achievement, there is a need to investigate students' attitudes towards L1 and L2. Therefore, this study proposes to examine these attitudes. Against this background, it is essential to investigate both the role of L1 schooling and students' attitudes towards L1 and L2 on the language proficiency and academic achievement in L2. This study may enrich the body of knowledge concerning successful instruction of CLD students. Given the above discussion, the components of the proposed study are discussed next.

Proposed Study

This section includes: (1) problem statement; (2) significance and need for the proposed study; (3) purpose of the study; (4) research questions; (5) research hypotheses; (6) null hypotheses; (7) definitions of terms; and (8) assumptions of the study.

Problem statement. Because of the increase in the number of CLD students in the United States in the last two decades and the low achievement of those CLD students, it may be fruitful to explore the relationship between formal education in L1 and attitudes towards L1 and L2 of L1 speaking middle school students in a suburban public school district and English language proficiency and academic achievement in mathematics.

Significance and need for the proposed study. The need for this study stems from four main reasons. First, there is an increasing number of CLD students in U.S., especially those whose native language is Arabic (Shin and Bruno, 2003). Few studies have investigated the relationship between the formal education in L1 of Arabic speaking students and the academic achievements of these language-minority students. Thus, this study may bridge the research gap in this area. Second, this study investigates the relationship between Arabic-speaking students' attitudes towards their native language and their attitudes towards L2, English language proficiency and academic achievement. To the best of this investigator's knowledge, there is little or no research that investigates the relationship between attitudes of Arab American students towards L1 and achievement in L2. This study is the first one that explores this area.

Third, some educators advocate for maintaining language-minority students' first language while others consider it detrimental. This then leads to a heated discussion about the effectiveness of programs that instruct CLD students in L1 and L2. Therefore, shedding light on the role of L1 may provide additional insights regarding that debate. Fourth, this study may provide teachers, counselors, administrators and other educational practitioners with an awareness of the problems that CLD students actually face. Such awareness may reduce teachers' underestimation of CLD students who already have developed major cognitive and academic skills in L1 in their home country; and encourage teachers to help other CLD students who had inadequate or no formal education in their home land.

Purpose of the study. The purpose of this study is to describe the relationship between formal education (adequate and limited) in the Arabic language of Arabic-speaking middle school students in a suburban school district and their attitudes towards L1 (Arabic) and L2 (English) on one hand, and English language proficiency and academic achievement in mathematics on the other hand.

Research questions. The following are the research hypotheses of this study:

- 1- Is there a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA)?
- 2- Is there a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP)?
- 3- Is there a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and English language proficiency as measured by the English Language Proficiency Assessment (ELPA)?
- 4- Is there a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP)?

Research hypotheses. The following are the research hypotheses of this study:

- 1- There is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA).
- 2- There is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and mathematics academic achievement as measured by the Michigan Education Assessment Program (MEAP).
- 3- There is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and English language proficiency as measured by the English Language Proficiency Assessment (ELPA).
- 4- There is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP).

Null hypotheses. The specific null hypotheses to be examined are:

- 1- There is no statistically significant relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA).
- 2- There is no statistically significant relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school

students, and mathematics academic achievement as measured by the Michigan Education Assessment Program (MEAP).

- 3- There is no statistically significant relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and English language proficiency as measured by the English Language Proficiency Assessment (ELPA).
- 4- There is no statistically significant relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP).

Definitions of terms. The following terms are defined as applied in this study.

Academic achievement. It is measured by the Michigan Education Assessment program (MEAP) which assesses students in four content areas: language arts, math, science and social studies (MDE, 2007-2008).

English language proficiency. It is measured by the Michigan English Language Proficiency Assessment (MI-ELPA), which tests speaking, reading, listening, writing and comprehension skills of English language learners anywhere from kindergarten through grade 12 (MDE, 2006).

General measure of language proficiency. A molar and abroad construct according to, which researchers measure language proficiency. For example, researchers use literacy as a measure of language proficiency.

Specific measure of language proficiency. A molecular and fine construct according to, which researchers measure language proficiency. For example, researchers investigate sub-skills

in languages such as phonological skills, oral-reading proficiency and writing as a method of measure of language proficiency.

Attitudes. Consists of cognitive, affective and action components. Attitudes vary in degree of favorability. They are learnt not inherent and tend to persist but they can be modified by experience (Baker, 1988). In this study, attitudes towards Arabic (L1) and English (L2) were measured by a survey adapted from two existing measures.

Assumptions. This study assumes that: a) students develop literacy skills in L1 if they have had some formal education in L1 and b) Bilingual instruction programs are programs that instruct students in their L1 and L2.

Chapter 2: Review of Literature

This chapter consists of two sections. The first section discusses the theoretical framework of two variables: 1) formal education in L1 and 2) students' attitudes towards L1 and L2 in L2 development and academic achievement. The second section includes empirical research discussing these variables.

Theoretical Framework

Theoretical perspective on formal education in L1. There are several theories, which focus on the role of formal education in L1 as well as native language proficiency in second language development and academic achievement. One theorist whose work greatly enriched this particular area of research is Cummins (1981a, 1981b, 1989, 2002). According to Baker (2006), Cummins' theories on language minority students followed an earlier naïve picture-theory of bilingualism known as the Balance Theory.

The Balance Theory depicts bilinguals as having two "language balloons" inside their heads. As one of the language balloons inflates the other deflates. Baker (2006) indicated that according to the Balance Theory, bilinguals are regarded as inferior to monolinguals because each of the bilinguals' two language balloons expands at the expense of the other during the process of achieving different cognitive functions whereas monolinguals have a well filled and an established ability stemming from their first language. Subsequently, Cummins (1981b) named this as the Separate Underlying Proficiency Model of Bilingualism (SUP). According to the SUP, the bilingual's two languages operate separately and independently, so the concepts that were learned in one language should be re-learned whenever a new language is introduced to the brain. Therefore, no transfer of skills and practices takes place from L1 to L2. Contrary to this view, Cummins (1981b) argued that languages are not separated in the cognitive system and

they operate from the same central processing system, which he named the Common Underlying Proficiency (CUP). Relying on the same underlying system permits skills, particularly linguistic abilities to be transferred between languages in the brain. Based on the SUP/CUP distinction, Cummins (1981b) argued that although L1 and L2 may be different in their surface features, they have common cross-linguistic proficiency components, which can assist language minority students in accomplishing cognitively demanding communicative tasks. This notion is crucial to the proposed study as it clearly shows that L1 and L2 are not disconnected but they develop from the same cognitive system. Thus, according to CUP, L1 can presumably play a major role in L2 academic achievement. Accordingly, Cummins (1989) developed the Linguistic Interdependence Principle:

To the extent that instruction in L_x is effective in promoting proficiency in L_x, transfer of this proficiency in L_y will occur provided there is adequate exposure to L_y (either in school or environment) and adequate motivation to learn L_y. (p. 44)

To illustrate, Spanish L1 students in programs instructing in both their L1 and L2 (English) and which are based on Spanish instruction for developing reading and writing skills construct a deep conceptual and linguistic proficiency upon which literacy skills in L2 can be developed (Cummins, 1989). Cummins was mainly interested in common underlying proficiency, which makes the transfer of cognitive/academic proficiency or literacy-related skills across languages possible. Central to this study is that the Linguistic Interdependence Principle which suggests that a child's second language competence is partly dependent on the level of competence that had been already achieved in the native language. Thus, second language development heavily depends on language-minority students' achievement in their L1 (Baker, 2006).

Focusing on language-minority students' academic development, Cummins (1981b) mentions that one factor that contributes to minority students' academic failure is the confused notion of proficiency. In order to resolve the confusion about proficiency, Cummins (2000) made a distinction between two kinds of skills: Basic Interpersonal Communicative Skills (BICS) and Cognitive and Academic Language Proficiency skills (CALP). BICS is used in context-embedded situations in which interlocutors have paralinguistic cues such as body language, prior knowledge, or context. On the other hand, CALP is used in context-reduced situations in which interlocutors have few or no paralinguistic cues to rely on in meaning-construction; instead, interlocutors rely on the language itself. This means that it normally takes more time to develop CALP than BICS. In fact, Cummins (2000) noted that it takes immigrant students approximately two years of L2 exposure for their conversational proficiency to attain peer-appropriate levels while it takes them an average of five to seven years to reach grade norms in academic English.

Herrera and Murry (2005) attributed the increased duration for mainstream students to achieve CALP to the difficulty of constructing meaning using new academic concepts and cognitive processes. The difficulty of this process multiplies for bilingual students who have become proficient in social conversation but are still academically and cognitively underdeveloped.

Additionally, Baker (2006) argued that context-reduced, cognitively demanding communication develops inter-dependently and can be advanced by one of the bilingual's languages or interactively by both languages. For example, learning word analysis skills can be applied in both languages—developing them in the first language supports their use in the second language. Accordingly, as proposed in this study, formal education in L1 is supposed to result in the development of cognitive and academic skills that are essential for minority students' L2

development cutting down on the time required to achieve peer-appropriate and grade-appropriate L2 proficiency.

Another theory by Cummins (1981b) in which he stressed the important role of native language development in second language achievement is Threshold Theory. According to this theory, the relationship between bilingualism and cognition can be described by the notion of two thresholds. Each threshold stands for a level of language competence that affects the child. Achieving the first threshold helps the child avoid the negative consequences of bilingualism while the second threshold is the level beyond which the positive effects of bilingualism can be experienced (Cummins, 1981b).

Corson (2001) stated that the Threshold Hypothesis has become influential in explaining the differences in the performance of language minority students in second language programs and has been supported by research in Australia, Italy and India. Corson mentioned that in order to avoid the cognitive disadvantages of bilingualism and experience its positive effects on the cognitive system, the Threshold Hypothesis necessitates that bilingual children attain a minimum level of competence or threshold in the first language. As for Baker (2006), The Threshold Theory provides an explanation for the failure of some minority language children taught through a second language in developing adequate L2 competency and in benefiting from weak forms of bilingual education. As a solution, Baker (2006) recommends Dual Language programs that allow children to use their more developed home language. This will result in an improved performance compared to the outcomes of immersion and transitional bilingual programs. Therefore, the Threshold Hypothesis provides additional support to the central claim in this research, namely that formal education in L1 is necessary for L2 development.

Several other researchers arrived at similar conclusions in support of the claim that L1 education accelerates academic achievement in L2 for language minority students. Among those researchers were Thomas and Collier (1997, 2002). Thomas and Collier's research from 1985 to 2001 examined various educational programs provided for CLD students in U.S. public schools and the resulting effects of these programs on CLD students' academic achievements. The summaries of their longitudinal research study, which focused on the types of school programs designed for CLD students in the US and these students' academic achievement from K-12 was one of the most important pieces of research in bilingual education. Among the several elements of student background Thomas and Collier (1997, 2002) examined in their study were socioeconomic status, primary language, second language proficiency upon entry to school, and most importantly, prior schooling.

There are several findings of Thomas and Collier's research, which are fundamental to this study. First, CLD students require five to seven years to reach the 50th percentile benchmark (average performance by native speakers) on standardized L2 (English) reading tests if they had a minimum of two to three years of schooling in L1 in their home country while they require seven to ten years to reach that goal with no prior L1 schooling. Second, when CLD students receive their education in both their L1 and L2 in the United States, it takes them relatively shorter period of time (four to seven years) to reach the 50th percentile benchmark in L2 (English) tests than when they are taught in L2-only programs. The question is: Why does schooling in L1 result in better L2 academic performance? According to Baker (2006), children taught in their L1 develop higher order cognitive and linguistic skills in addition to L1 skills. These skills will consequently transfer to the L2 leading to its development. The third relevant finding reported by Thomas and Collier (2002) was as follows: When the number of years of L1

schooling, whether in home country or host country, was four or more years, prior L1 schooling appeared to be more determinant of L2 proficiency than socioeconomic status. In line with these findings, the current study proposes that L1 education as measured by the number of years of L1 schooling may play a significant role in L2 academic achievement.

In fact, having realized the vital role of the first language, Thomas and Collier (1997) developed the Prism Model to represent the different learning needs and diverse assets that CLD students bring to schools. Central to the Prism Model are four aspects of CLD students' background: 1) L1 and L2 academic development, 2) L1 and L2 language development, 3) L1 and L2 cognitive development, 4) and at the heart of the model, the social and cultural processes. All four dimensions of the model: linguistic, academic, cognitive and socio-cultural aspects of both languages need special attention for CLD students to be successful in schools. This model clearly shows that L1 can play a major role in the L2 academic achievement as each of its components takes into account the role of L1. Thus, this model lends more support for this study through emphasizing the importance of the academic, cognitive and language development in L1.

The important role of L1 in L2 development and academic achievement is also attested in the domain of literacy skills and not just L1 education. Among the several researchers that looked into that was Krashen. One of Krashen's hypotheses that relate to second language acquisition is known as the Input Hypothesis. According to this hypothesis, better learning occurs when CLD students receive understandable or comprehensible input in L2. Specifically, new information is best incorporated by the L2 learner when the input is one step beyond his or her current level of competence. According to Krashen (2003), comprehensible input can be provided through the use of the learner's L1. In particular, he argued that the first language can

speed up second language acquisition in two ways: 1) the first language provides background knowledge rendering second language input more comprehensible, and 2) developing literacy skills in the first language is a shortcut to second language literacy. In fact, Krashen's argument was inspired by Cummins' views. For example, Cummins (1981a) stated that the use of the minority students' L1 builds the necessary linguistic and intellectual skills. Consequently, the concepts and knowledge developed in L1 can be easily transferred to L2 making L2 input comprehensible. Based on Cummins' (1981b) notion of the Common Underlying Proficiency and a collective review of a reasonable amount of evidence from research in favor of the transfer hypothesis, Krashen (1996) presented the following findings. First, the underlying process of reading is similar across languages even with dissimilar languages. Second, the process of literacy development is similar across language. Third, literacy development in L2 is positively correlated with literacy development in L1.

Having realized the significant role of L1 in L2 acquisition, Krashen (1981) recommended three major requirements that any program must have in order to promote CLD students' second language acquisition: 1) providing comprehensible input in the L2, 2) maintaining subject matter education, and 3) developing children's first language. As a matter of fact, Krashen (1981) stated that maintaining subject matter is key to cognitive and intellectual development that is necessary for second language acquisition. This entails that in many situations, subject matter instruction be done through instruction in the first language to prevent language minority students from falling behind in subject matter knowledge.

Other researchers through the notion of transfer of literacy also implied the role of L1 in L2 acquisition. For example, Goodman viewed (1978/1982) reading as a psycholinguistic process in which the meaning of a linguistic surface representation encoded by the writer is

(re)constructed by the reader. In other words, reading involves an interaction between language and thought, in which a writer presents thoughts and readers try to construct meaning from the writer's language. Looking carefully at the reading process, Goodman and Goodman (1970/1982) went further by describing the reading process as a psycholinguistic "guessing game" which requires different processes of sampling, predicting, confirming and correcting and through which readers try to use grapho-phonetic, syntactic and semantic resources of information to achieve the goal of comprehension or reconstruction of meaning.

Goodman (1973) argued that reading is a process similar across all languages with slight variations to allow for the language's orthographic and grammatical peculiarities. Goodman's (1978/1982) belief in the existence of psycholinguistic universals in reading led him to conclude that regardless of language similarity, learning to read a second language should be easier given one's ability to read in another language. Thus, Goodman, from the psycholinguistic perspective he offers, adds another pillar of support to the paradigm of language transfer.

Finally, the socio-cultural constructivist framework of literacy provides another support for the role of L1 in L2 development. The socio-cultural constructivist view of literacy owes much of its merits to Bruner (1996). According to Bruner, learners make use of different resources such as cultural tools, texts, ways of thinking and symbols in order to construct reality and make meaning. Within this framework, Pérez (1998a) dismisses the view of literacy as consisting of decontextualized linguistic skills such as knowledge of words and sounds of letters and so on. This is so because being literate not only requires the necessary basic skills of reading and writing but also requires viewing literacy within a social, contextualized and culturally relative context.

Looking at literacy from this perspective, Pérez (1998b) also suggested that giving children the opportunity to access and use their cultural and linguistic knowledge and skills in school assists L2 literacy development. Specifically, developing literacy in the native language and culture provides children meaning-construction advantages that aid in L2 literacy development. The above three theoretical perspectives all provide support for the importance of L1 education, albeit implicitly (i.e. through L1 literacy development), in L2 development, which this study investigated. In the next section, this investigator discusses the theoretical perspectives of another factor that affects academic achievement in L1 which is students' attitudes towards L1 and L2.

Theoretical perspective on students' attitudes towards L1 and L2. There are a number of theoretical models, which focus on the role of individual differences in second language acquisition. These include: 1) Lambert's social psychological model, 2) Schumann's acculturation model, 3) The social context model of Clément, and 4) Giles and Byrne's intergroup model (Gardner, 1985a). Although these models alluded to the role of attitudes in second language learning, their primary focus was not aimed at that end. One model that specifically discussed the role of learner's attitudes towards L2 was Gardner's socio-educational model that had its roots in Lambert's model.

What distinguished Gardner's (1985a) model is its clear and direct association with empirical research due to the operationally definable and assessable nature of its major variables. Gardner's (1985a) socio-educational model included four different variables whose interaction results in the acquisition of a language. These variables are: The social milieu, individual differences, language acquisition contexts and learning outcomes. To the interest of this study, only two themes or stages of the socio-educational model are discussed: the second stage which

is the individual differences and the last or fourth stage which is learning outcomes. The second stage in Gardner's socio-educational model, individual differences, is comprised of four variables: intelligence, language aptitude, motivation and situational anxiety. Gardner (1985a) stated that other variables like attitudes are not included as separate individual differences as their effects are implicit in other variables like motivation. In the most recent version of his socio-educational model, Gardner (2001) differentiated between two attitudinal variables: integrativeness and attitudes towards the learning situation that influence motivation to learn L2. Gardner (2001) defined integrativeness as a genuine interest in learning the second language in order to come close to the other language community. According to Gardner (1985a), integrativeness is measured by the degree of openness to other ethnic groups or languages while attitudes towards the learning situation are assessed by things such as the reaction to the course and teacher.

The two attitudinal variables, integrativeness and attitudes towards the learning situation affect motivation to learn the second language. Together, these three elements: integrativeness, attitudes towards the learning situation and motivation constitute integrative motive. Accordingly, an integratively motivated language learner is one who is motivated to learn a second language, has a desire to identify with the language community and positively evaluates the learning situation. Collectively, integrative motivation along with another variable, language aptitude, influences language achievement (Gardner, 2001).

Although integrativeness and attitudes towards the learning situation are considered as pillars of support to motivation, it is the latter variable that directly influences achievement in the L2. According to Gardner (1985a, 2001), motivation is the driving force in any situation. In the socio-educational model, motivation is comprised of three elements: 1) the effort expended to

learn the language; for example, reading more or doing extra work, 2) the desire to learn the language, and 3) the affect or attitudes towards learning the language. Together, all these elements and not any single element by itself can be used as an index of motivation to distinguish less motivated and more motivated learners. However, Gardner (2007) indicated that motivation is not a simple construct to define for the various characteristics of a motivated individual. For Gardner, a motivated individual is goal-directed, self-confident, attentive, exerts effort, has persistence, has desire, has positive affect (attitude), is aroused, has expectancies, and has reasons (motives). However, since motivation is affected by two attitudinal variables and is being composed of attitudes towards learning the language among other things, attitudes towards languages is given special attention in this study.

The other stage, which is of interest to this study is the fourth stage in Gardner's model. The fourth stage in Gardner's model is concerned with outcomes. Gardner (1985a) specified two outcomes from second language learning experience: linguistic and non-linguistic outcomes. Linguistic outcomes refer to second language proficiency including knowledge of vocabulary, grammar, fluency and pronunciation. On the other hand, non-linguistic outcomes refer to attitudes and values, which develop from the language learning experience. The inclusion of attitudes as non-linguistic outcomes in Gardner's (1985a) model suggests that his model is not static but dynamic and cyclical. Specifically, nonlinguistic outcomes (e.g. attitudes) feed back into the model and influence motivation. This further demonstrates the essential role of attitudes in the process of second language learning especially with attitude being an input and output element in Gardner's model.

Krashen in his Affective Filter Hypothesis also brought the role of attitudes in second language acquisition to the forefront. In this hypothesis, Krashen (1981) used the term affective

filters (Dulay & Burt, 1977) to refer to the emotional states of learners. He believed in the importance of learners' emotional states in second language learning for their direct effect on learners' attitudes towards learning. Krashen suggested that learners who develop a positive attitude towards language learning have their filters set low. When learners have their affective filters set low, they can process the input effectively, allowing acquisition to take place. In contrast, when learners experience anxiety and fear in the classroom, their affective filters will be set high, which hinders the learners' processing of input. This usually happens when learners find themselves under pressure as when they are forced to speak without being ready or when they are discouraged from using their first language.

In fact, based on strong evidence showing better performance by learners who do not reject their own language than those who do, Krashen (1981) suggested that maintaining minority students' first language might counteract negative attitudes towards language learning leading to improved performance. Additionally, Krashen indicated that maintaining subject matter in the first language (or the second language) can be effective in reducing the affective filters of language minority students leading to better attitudes towards school in general. In turn, this will positively reflect on language minority students' achievement. Given the importance of attitudes towards the languages known or spoken by the learner, this study investigated the role of attitudes towards the language being learned in addition to the attitudes towards one's native language in L2 development and academic achievement. In the following two sections, the empirical research investigating the effects of the role of 1) formal education in L1 and 2) attitudes towards L1 and L2 in L2 language proficiency and academic achievement are presented.

Empirical Framework

Empirical perspective on formal education in L1. A number of studies investigated the general role of formal education in L1 in the development of second language proficiency and academic achievement (Bosher & Owekamp, 1992; Calderon, 2003; Jiang & Kuehn, 2001; Laija-Rodriguez et al., 2006; Earl-Castillo, 1990; Padilla & Gonzalez, 2001; Shepherd, 2006; Wakabayashi, 2002). With the aim of investigating the effect of L1 formal education in second language proficiency, the following scholars looked at one or more aspects of second language proficiency.

In one study, Wakabayashi (2002) examined the effect of initial schooling in Japanese as L1 in developing English language proficiency through assessing participants in three skills: reading, writing and speaking in the two languages. A total of 48 Japanese high school students who attended an English medium international school in Japan participated in this study. The participants were divided into two groups. One group included students whose schooling was primarily in English and another included students who had been schooled initially in Japanese and then acquired English. The results of tests measuring the three skills showed that there is no significant difference between students initially educated in Japanese and students primarily schooled in English. So the former group was able to catch up with their peers who were educated initially in an English speaking country.

In the same vein, Jiang and Kuehn (2001) examined the role of L1 educational background and native language proficiency on English academic language proficiency. However, these researchers examined participants' performances in two skills only, namely reading and writing. Jiang and Kuehn's study only included 22 volunteers who were divided into two groups. The first group consisted of late immigrant students with a minimum of 10-11 years

of education in their home country. The second group consisted of early immigrant students with less than 10 years of education in the US. After comparing the results of the pre-test with post-test, the researchers observed that both groups made statistically significant gains with the late group having significantly more gains than the early group. The researchers also found positive correlation between L1 education and L2 writing, $r=.324$. The researchers attributed the results to the transfer of academic language skills from L1 to L2.

Unlike Wakabayashi (2002) and Jiang and Kuehn (2001), Shepherd (2006) investigated the effect of continuity of schooling in L1 (Spanish) on English reading alone. Shepherd tested 94 ESL immigrant students and divided them into two groups, one with continuity in L1 education and another with discontinuity in L1 education. His results indicated that there is a statistically significant difference in English proficiency between students with discontinuity in L1 education in their home country and with continuity in L1 education.

Like Sheperd (2006) , Laija-Rodriguez et al. (2006) have also investigated the cross linguistic relationship between Cognitive academic language proficiency (CALP) in Spanish as measured by Woodcock-Munoz Language Survey (WMLS) and Reading in English as measured by Curriculum Based Measurement Oral Reading Probes. They studied 77 students. The simple regression analyses indicated a significant but weak relationship between Spanish CALP and reading in English.

Earl-Castillo (1990) also was interested in studying the role of education in L1 on the oral proficiency in L2 as measured by John Test. She investigated 282 public assistance recipients enrolled in ESL program. She ended up her research concluding positive correlation between L1 education and L2 oral proficiency.

Other researchers (Bosher & Owekamp, 1992; Calderon, 2003; Padilla & Gonzalez, 2001) examined the role of schooling and academic proficiency in L1 on the academic achievement of non-native speaker students in US. For example, Calderon (2003) examined the role of both Spanish and English language proficiency in general on the academic achievement in science of Spanish-speaking students with formal schooling in their L1. For Calderon, the academic performance of students with formal education in L1 can be affected by language proficiency in both languages. Calderon investigated a total of 40 students. These were divided into two groups. The first group included students with adequate formal schooling in L1. The second group of students included those who took longer time to develop academic English and to which he referred to as long-term English language learners. The data analysis showed that the majority of adequate formal schooling students who demonstrated proficiency in both Spanish and English received higher scores in science than those who did not demonstrate proficiency in both languages.

In the same manner, Padilla and Gonzalez (2001) studied 2,167 high school students who are either Mexican or Mexican American with the aim of investigating the role of schooling in Mexico on the academic achievement of those students as measured by self-reported Grade Point Average (GPA). They also divided their sample into two groups: one with schooling in Mexico and another with no schooling in Mexico. A t-test revealed that non-U.S. born students reported high GPAs than their U.S. born counterparts. The researchers ended up their research concluding the positive impact of schooling in Mexico on students' GPA.

Bosher and Rowekamp (1992) investigated the role of completing high school in native countries and in US on the academic success as measured by only GPA. They investigated only 56 refugee/immigrant students and international students enrolled in an academic "bridge"

program in a university. They separated the students in two groups: the first group completed their high school in home country (refugee/immigrant students and international students) while the second group completed high school in US (only refugee/ immigrant students). They found out that among a number of background variables, years of schooling in native country had the strongest correlation with GPA.

Overall, all the previous studies showed that L1 formal education contributed to developing second language proficiency and academic achievement. However, the cited investigations have a number of limitations. First, all of these studies did not provide a systematic and clear description of the L1 formal education, which the participating students received. These researchers relied on the number of years of schooling in L1 as the only measure of formal education in L1. Some of them (Calderon, 2003; Sheperd, 2006) did not even specify how many years of schooling in L1 their participants had. Given the variability of classroom experience and the quality of education it may not be sufficient to use the number of years of schooling as a criterion of formal education. Second, although these studies indicated formal education in the L1 may affect students' L2 proficiency and academic achievement, no study ever reported how many years of schooling in L1 are required at a minimum for CLD students to perform well in L2. Third, the sample sizes of only two studies were enough large (Earl-Castillo, 1990; Padilla & Gonzalez, 2006), which can put the validity of the results into question. Fourth, only in one study, namely Wakabayashi (2002), provided a clear measure of the dependent variable, i.e. English language proficiency, since he divided it into three different specific skills while other researchers either measured only one or two specific skills namely reading and writing or even evaluated proficiency as a general construct. Providing data about specific skills is more informative about participants' performance. Finally, two studies measured academic

achievement by only GBA (Bosher & Owekamp, 1992; Padilla & Gonzalez, 2001). Using additional measures of academic achievement might be more informative especially when that Padilla and Gonzalez (2001) relied on self-reported GPA which might be inaccurate.

Nevertheless, the above studies have some positive characteristics that are worth mentioning. First, it is desirable to divide the sample into two groups, one with formal education and another with limited or no education in L1 because it is easier to track the difference between the two groups and to examine the effect of formal education; 2) It is more informative to include two variables, English language proficiency and academic achievement, as the outcomes of having formal education in L1.

Taking into account both the limitations and the strengths mentioned above, this study addressed some of the cited studies' limitations by a) adding another important variable, in addition to formal education in L1, which is students' attitudes towards L1 and L2 and its role in English proficiency and academic achievement and b) using a larger sample size to address the reliability of the results. In addition, this study replicated the cited studies by a) dividing the sample into two groups: one with adequate formal education and another with limited formal education, b) using two instead of one variable, namely, English language proficiency and academic achievement. This can provide more holistic information about a number of independent variables that can affect participants' achievement.

Since native language proficiency is one aspect that schooling seeks to develop, it can be used as an index of formal education. Accordingly, the effect of native language proficiency on second language proficiency and academic achievement can additionally enlighten readers on the role that schooling in L1 plays in developing second language. Thus, this investigator included

studies examining the role of native language proficiency in second language proficiency and academic achievement.

Empirical perspective on native language proficiency. A number of studies investigated the role of native language proficiency in promoting language proficiency and academic achievement in the second language. Some studies investigated the native language proficiency in general by examining literacy skills in L1 and their transfer to L2 (García-Vázquez et al., 1997; Carson et al., 1990; Dakroub, 2002) while other studies investigated a number of sub-skills in L1 and their roles in L2 proficiency (Carson & Kuehn, 1992; Meschyan & Hernandez, 2002; Ramirez & Shapiro, 2007; Sparks et al., 2008, Upton & Lee-Thompson, 2001; Walter, 2004; Wang et al., 2006).

To start with studies that examined native language proficiency in general (See chapter 1 for the definition), García-Vázquez et al. (1997) found a significant correlation between Spanish proficiency as measured by the WOODCOCK Language Proficiency Battery and standardized achievement scores as measured by the Iowa Tests of Basic Skills and Iowa test of educational development for students from sixth through twelfth grade. The strongest correlation was found between written language and all of the standardized achievement scores. Likewise, Carson et al. (1990) showed a stronger relationship between reading abilities between L1 and L2 than between the writing abilities in the two languages by measuring participants through only a single test for reading and another for writing. The researchers thus concluded that reading ability transfer from L1 to L2 much easier than writing ability.

In another study, Dakroub (2002) investigated the relationship between Arabic literacy and academic achievements in English reading, language and mathematics of Arab-American middle school students in a suburban middle school in Southeast Michigan. Dakroub (2002)

studied students from sixth, seventh, and eighth grade levels, which he divided to two groups: one with high literacy and another with low literacy in Arabic based on an Arabic literacy test developed by the researcher. Results indicated that students who were classified as having high Arabic language literacy outperformed those with low Arabic language literacy on the measure of academic achievement in the three subject areas.

Unlike the studies discussed above, other investigators studied some specific skills (See chapter 1 for definition) in the first language and their relationships to other specific skills in the second language. For example, looking at the role of cognitive skills in L1 in L2 proficiency, Upton and Lee-Thompson (2001) investigated the effect of L1 cognitive strategies on how L2 readers used these resources as aids to understanding L2 texts. They examined 20 native speakers from three different proficiency levels in L2 (intermediate, advanced, and post ESL). The results of their study showed that L2 readers used their L1 for more than mental translation; they used their L1 to accomplish various meta-linguistic functions such as wrestling with word and sentence-level problems, confirming comprehension, predicting text structure and content and monitoring text characteristics and reading behaviors. However, the reliance on L1 strategies declined as L2 proficiency increased.

Likewise, Walter (2004) examined two notions from cognitive psychology in relation to transfer of reading comprehension skills from L1 to L2: building of a mental representation of text and working memory. She tested 41 English language learners and divided them according to their Proficiency level in English into lower intermediate and upper-intermediate groups. The results showed that the transfer of reading comprehension from L1 to L2 is associated with transfer of structure-building ability from L1 to L2, which was linked to working memory in L2.

Other researchers investigated the role of various phonological skills in L1 in L2 reading. For example, Meschyan and Hernandez (2002) investigated the effect of decoding skills of native English speaking students in second language learning of Spanish in a full academic year of introductory Spanish. The researchers found participants with good native language word decoding skill achieved better scores in competency tests that measure Spanish vocabulary, grammar and reading comprehension and earned higher grades in Spanish. In another study, Wang et al. (2006) investigated different phonological skills and their effect on reading in L2. The researchers studied the effects of phonological skills including onset detection, rhyme detection and phoneme deletion in Korean (L1) on real word and pseudoword reading of English (L2) of only 45 children in three different grades. The researchers found a significant correlation between the previous phonological skills in L1 and the two kinds of reading in L2.

Studying reading-related skills, Ramirez and Shapiro (2007) examined the relationship between oral reading fluency in L1 and in L2 of only 68 students from first through fifth grades three times during the academic year. Except for fourth graders, the examination of correlations between Spanish oral reading fluency and English oral reading fluency within grades and across time periods were statistically significant. In a related study, Sparks et al. (2008) investigated the relationship between reading comprehension in L1 and L2 by following 54 learners from 1st through 10th grade. The results showed that L1 reading comprehension skill in elementary school was a significant predictor of L2 reading comprehension several years later in 10th grade.

Investigating another literacy skill, Carson and Kuehn (1992) investigated the role of L1 academic writing ability in the development of L2 academic writing ability of only 48 English language learners in different proficiency levels. The researchers tested participants' writings in L1 and L2 in separate sessions each of which lasted only 45 minutes. This study provided

evidence that competence in L1 writing indeed transfers to L2. However, attaining a certain level of L2 proficiency is necessary for transfer to happen.

The above suggests that native language proficiency predominantly plays a major role in second language proficiency and academic achievement in L2. However, the cited investigations have a number of limitations. First, some studies investigated the native language proficiency in a general manner without specifically concentrating on a certain skill or sub-skill in the native language (García-Vázquez et al., 1997; Carson et al., 1990; Dakroub, 2002). This approach is less effective and informative in tracking the effect of native language proficiency than an approach that focuses on particular skills. Second, a number of studies used a small sample size (Carson & Kuehn, 1992; Ramirez and Shapiro, 2007; Sparks et.al, 2008; Upton and Lee-Thompson, 2001; Walter, 2004; Wang et al., 2006). Accordingly, the findings of these studies may not be generalized. Third, researchers in one study in particular (Carson & Kuehn, 1992) allotted only 45 minutes for the writing tests. With such short time, it might be difficult for participants to demonstrate all their writing abilities. Additionally, this time window is usually what it takes to write a first draft. Fourth, using one type of testing in measuring reading skills of participants such as cloze-test puts the validity of the data into question since reading includes many sub-skills, which can be evaluated individually (Carson et al., 1990). Finally, relying only on one self-developed measure of literacy makes the results questionable (Dakroub, 2002).

On the other hand, the previous studies also had a number of strengths that are worth mentioning. First, investigating specific skills in native language provides more accurate data about participants' proficiency (Carson & Kuehn, 1992; Meschyan & Hernandez, 2002; Ramirez & Shapiro, 2007; Sparks et al., 2008, Upton & Lee-Thompson, 2001; Walter, 2004; Wang et al., 2006). Second, dividing the population into different groups according to their proficiency levels

in either L1 or L2 is an accurate approach in tracking differences among participants (Carson & Kuehn, 1992; Upton & Lee-Thompson, 2001; Walter, 2004; Wang, Park, Lee, 2006). Third, one advantage of testing participants from different grades is that results are more generalizable than if the whole population is from one grade (García-Vázquez et al., 1997; Ramirez & Shapiro, 2007; Sparks et al., 2008; Wang et al., 2006). Fourth, two studies in particular were longitudinal. Sparks et al. (2008) studied participants over lengthy period of time (ten years). Also, Meschyan and Hernandez (2002) investigated their participants over one academic year. In such longitudinal studies, useful information about long-term transfer from L1 to L2 can be provided. Fifth, using different objective tests in the same study can introduce informative data about participants' achievement (García-Vázquez et al., 1997). Finally, one study investigated the effect of native language proficiency on both second language proficiency and academic achievement in math. This can give clear and representative information about the effect of native language proficiency (Dakroub, 2002).

Taking into account both the limitations and strengths of the cited investigations, this study replicated two of the strengths of the previous studies: 1) investigating the effect of formal education in L1 on two dependent variables, second language proficiency and academic achievement, 2) recruiting participants from different grade levels, from fourth through eighth grade. In addition, this study addressed one of the studies' limitations by using a larger sample size. Although, formal schooling in L1 plays a significant role in second language proficiency and academic achievement, another often-ignored factor that affects L2 proficiency is minority students' attitudes towards L1 and L2. The next section discusses the empirical perspective of attitudes towards L1 and L2 on English language proficiency and academic achievement.

Empirical perspective on students' attitudes towards L1 and L2. A number of studies investigated the role of attitudes towards L1 and L2 in the development of second language proficiency and academic achievement (Bialystok & Frohlich, 1978; Gardner et al., 1999; Masgoret & Gardner, 2003; Lee, 2002; Nguyen et al., 2001; Randhawa & Korpan, 1973; Sanchez, 2006; Ushida, 2005; Yager, 1998). However, to the best of the researcher's knowledge, there is a lack in research regarding the role of attitudes towards L1 on second language development.

To start with the studies that investigating the role of attitudes towards L1 in second language proficiency and academic achievement, Lee (2002) found a positive correlation between the students' language and cultural identity and their academic achievement as measured by students' GPA. He surveyed 105 U.S. born Chinese-American and Korean-American students. Lee used GPA as the only indicator of participants' academic achievement in school. Additionally, he used 10 closed-ended questions questionnaire devoted mainly to maintain native culture and heritage rather than to maintain language.

Sanchez (2006) examined the relationship between the attitudes towards L1 (Spanish) and L2 (English) and academic achievement of 144 Mexican-origin students. To measure students' attitudes towards language, the researcher relied on a survey administered by her. For measuring academic achievement, she used different measures from students' school records and they are: GPA, test scores in reading and Math and likelihood of graduation from 8th grade. The researcher found out a weak significant correlation between students' attitudes towards L1 and academic achievement and no significant correlation was found between attitudes towards L2 and academic achievement.

Unlike Lee (2002) and Sanchez (2006), Nguyen et al. (2001) investigated the relationship between competence in L1 (Vietnamese) and competence in L2 (English) but they also collected data regarding participants' attitudes towards their L1. The researchers examined 588 students by measuring their competence in English using Stanford Achievement Test. In addition, they measured the oral performance in both L1 and L2 and the attitudes of their participants through a questionnaire. The researchers found high levels of reported competence in both L1 and L2 and a close to zero correlation between English literacy and self-reported competence in Vietnamese which the researchers interpreted it as an evidence that the competence in L1 is not a barrier to second language acquisition. As for the participants' attitudes towards L1, the researchers reported that most of the participants expressed their strong support for their first language and their beliefs in the importance of maintaining their L1. The researchers also stated that most of the participants reported high level of competence in speaking English.

With the aim of investigating the effect of attitudes towards L2, some scholars looked at the effects of attitudes toward L2 on one or more aspects of second language proficiency or on second language proficiency in general. For example, Bialystok and Frohlich (1978) examined a number of individual differences including the effects of students' attitudes towards L2 on their oral and written achievement in the second language. To measure students' attitudes of second language learners, the researchers used the Attitude/Motivation Test Battery (AMTB) (1985b). This test is as advantageous as it is high in reliability and validity as it measures different aspects of attitudes and motivation. They found that there was a significant effect of attitudes towards L2 on the writing task only.

Similarly, Yager (1998) examined a total of 30 students grouped into three levels (beginning, intermediate and advanced) with the aim of investigating the effect of cultural and

linguistic attitudes of second language learners in Spanish on their second language fluency. The second language fluency of participants was measured only through Oral Proficiency Interview (OPI). In OPI, a number of native speaker judges evaluate participants' fluency in three particular areas: Spanish in general (S), Grammar (G) and pronunciation (P). Students' attitudes were measured through a questionnaire constructed by the investigator. The researcher found a significant correlation between greater enjoyment of Spanish pronunciation, which is one measure of attitudes and motivation, and greater gains in native-like pronunciation by students in the beginning level.

Unlike Bialystok and Frohlich (1978) and Yager (1998), other scholars (Gardner et al., 1999; Masgoret & Gardner, 2003; Randhawa & Korpan, 1973; Ushida, 2005) investigated the role of attitudes towards L2 on second language development in general. Gardner et al. (1999) investigated the role of socio-cultural factors which 109 participants experience early in life when they learnt second language in high school, their current attitudes and their self-perception of second language proficiency. To measure a number of contextual factors and the current attitudes of the participants, the researchers used the AMTB (1985b). The result led the researchers to trace a causal relation linking all the previous variables together as they demonstrated the influence of the contextual factors on the participants' current attitudes and consequently on achievement.

In another study, Masgoret and Gardner (2003) investigated the relationship between five attitude/motivation variables: attitudes towards learning situation, integrativeness, motivation, integrative orientation and instrumental orientation, and second language achievement. They used a different statistical design, namely meta-analysis of a number of studies conducted by Gardner and associates. All the studies included in the meta-analysis used AMTB for measuring

the attitude/motivation variables. The previous studies used various measures such as self-rating, objective tests and grades to measure second language achievement. The results showed that all the five attitude/motivation variables were positively related to achievement. However, the correlation between motivation and second language achievement was higher than the correlation between other attitude/motivation variables and second language achievement. The researchers interpreted this result by arguing that other attitudinal variables influence motivation and indirectly affect achievement.

Ushida (2005) also investigated the role of students' attitudes in second language learning in a general manner by looking at various learning outcomes such as module tests, final exam, midterm grades and the final grades of a total of 30 participants. The researcher used the Attitude/Motivation Test Battery for measuring participants' attitudes. The results showed a positive relationship between students' attitudes and achievement especially in module tests.

Randhawa and Korpan (1973) also studied the role of attitudes towards learning French as a second language and achievement in French in a general manner but with more subjectivity. The researchers measured achievement in second language by asking teachers to grade their pupils on a 5-point descriptive scale (A, B, C, D, and F). To measure attitudes towards learning and other related variables, the researchers constructed their own scale. The results showed attitudinal variables especially tolerance towards learning French was important for effective learning of French as a second language.

To sum up, all the previous studies showed that there is a significant role of attitudes towards L1 and L2 in second language achievement. However, the cited investigations have a number of limitations. First, measuring second language proficiency and academic achievement in a general manner is less informative than if they had been measured by specific language skill

or subject area (e.g., Masgoret & Gardner, 2003; Ushida, 2005). Second, Gardner et al. (1999) used students' retrospections of a number of contextual factors that they experience when they were in high school. Such data are memory-based and thus they are subject to distortion. In addition, Gardner et al. (1999) and Nguyen et al. (2001) relied on self-reporting measure of the participants' proficiency in second language. It would have been more reliable if the self-reporting of language proficiency was used in combination with an objective assessment for language achievement as self-reporting assessment is contaminated with social desirability responses. Third, Yager (1998) used an OPI as the sole measure of oral language proficiency. OPI may not be a sufficiently sensitive measure of changes in proficiency over a short or long period of time. Fourth, Randhawa and Kapan (1973) relied on measuring achievement in second language on teachers' evaluation and that was based on a descriptive scale. Such a measure is likely to involve considerable subjectivity. It would have been more reliable if the researchers also used objective tools for assessing participants' achievement. Fifth, Lee (2001) used a questionnaire with only one question on attitudes towards language while the remaining nine questions were concerned with attitudes towards the culture. Ideally, half of the questions should address attitudes towards language while the other half should be allotted to attitudes towards culture. Finally, Yager (1998) and Ushida (2005) used a small sample size which again severely limits the generalizability and representativeness of the findings of their studies.

Despite their weaknesses, the cited investigations have a number of strengths that are worth mentioning. First, Bialystok and Frohlich (1978), Gardner et al., 1999, Masgoret and Gardner (2003) and Ushida (2005) used the Attitude/Motivation Test Battery (AMTB). Second, some studies examined second language proficiency by testing specific skills such as oral or writing skills or measuring academic achievement by using different measures. This provides

more detailed and accurate information about participants' performance (e.g., Bialystok & Frohlich, 1978; Nguyen et al, 2001; Yager, 1998). Third, one study in particular used multi-methodology in measuring second language proficiency such as module tests, final exams, midterm grades and the final grades (e.g. Ushida, 2005). This provides complete and holistic information about the participants' performance. Finally, some researchers used large sample size which can increase the generalizability and representativeness of the findings of their studies (Gardner et al., 1999; Nguyen et al., 2001; Sanchez, 2006).

Taking into consideration both the limitations and strengths of the above studies, this investigator replicated one of the strengths namely using components of Attitudes/Motivation Test Battery that is relevant to one of her independent variable. In addition, this study addressed some of the limitations of the cited investigations. First, this study has a sample size of 86 participants unlike Yager (1998) and Ushida (2005), who used a small sample size. Second, unlike all the cited studies which investigated the role of attitudes towards L1 or L2 on either second language proficiency or academic achievement, this investigator assessed the affect of attitudes towards L1 and L2 on second language proficiency and academic achievement specifically in mathematics. Third, this study used an objective assessment for measuring second language proficiency namely ELPA. Other researchers such as Yager (1998) and Gardner et al. (1999) used subjective assessments for measuring second language proficiency such as OPI and self-reporting perception of participants' performance.

To summarize, this review of literature provides substantial support for the effect of (1) the previous experience of language minority students in schooling in L1 and (2) their attitudes towards their native language and second language on academic achievement and language proficiency in L2. Taken into account the critique of the research studies reported above, this

investigator addressed some of these critiqued issues in this study. In the next chapter, the investigator presents a detailed discussion of the methodology that is used in conducting the study.

Chapter 3: Methodology

The purpose of this study is to examine: 1) the relationship between formal education (adequate and limited) in the Arabic language of Arabic-speaking middle school students in a suburban school district; 2) and their attitudes towards L1 (Arabic) and L2 (English) and English language proficiency and academic achievement in mathematics. The methodology reported below address the four research questions and the four related hypotheses. This chapter includes research design, setting and participants, instrumentation, procedure, and data analysis.

Research Design

A causal-comparative research design has been selected to conduct this study. According to Fraenkel and Wallen (2006), researchers in causal-comparative research try to decide on the cause or consequences of differences that already exist between two groups or more. In causal-comparative research, researchers investigate the nature of existing conditions rather than manipulate subjects, treatments or conditions. Causal-comparative research is also referred to as *ex post facto* research (from the Latin for after the fact) because both the effect(s) and the cause(s) already have occurred unlike in experimental studies in, which investigators create a difference between two or more groups and then compare the groups' performances to determine the effect of the manipulated difference (Fraenkel & Wallen, 2006).

In this study, causal-comparative design examines the relationship between formal schooling in L1, attitudes towards L1 and L2 (independent variable) and English language proficiency as well as academic achievement in mathematics (dependent variables).

Setting and Participants

The sample for this study included students from third grade to eighth grade in suburban public school district in Southeastern Michigan. By contacting the school district, the researcher

found out that the bilingual program implemented in the research site is a transitional bilingual program. By definition, a transitional bilingual program allows minority-language students to use their home language in classrooms until they become adequately proficient in the second language and capable of moving to mainstream classes (Baker, 2006).

At the beginning, 20 participants were involved to pilot test the Students' Attitudes Survey. After data collected from the pilot test, two steps were carried out. First, the researcher reviewed the responses of participants to accordingly evaluate if the survey questions were basically understood by the participants. Thus, she examined carefully to decide if she needs to add or delete some items, combine two items, or modify the wording of existing items. Second, the investigator consulted the statistician to check the reliability of the instrument. The reliability of the students' attitudes survey was assessed using Cronbach's Alpha coefficient. The reliability of items related to attitudes towards L2 (English) was between .86 and .95 while the reliability of items related to attitudes towards L1 (Arabic) was between .70 and .87. So, the students' attitudes survey has a good level of reliability (See Table 1).

Table 1: *Reliability of the Items in Students' Attitudes Survey*

Scale Type	Number of Items	Cronbach's Alpha	
		L1	L2
7-point items	7	.87	.95
5-point items	11	.70	.86

In this study, the total number of participants is 86. Participants were selected on a nonrandom, purposive sampling basis as they must meet specific criteria to be included in the sample. The two criteria for inclusion in this study are: 1) that participants were not born in US and 2) that they have some type of schooling in L1. The investigator gave the two criteria to the

administrators of the schools who then identified the students from their school and provided back a list of potential participants to the investigator.

Instrumentation

The instruments for collecting data in this study include the following: parent demographic survey, students' attitudes survey, Math component of the Michigan Educational Assessment program (MEAP) and scores on the English Language Proficiency Assessment (ELPA).

Parent demographic survey. The selected students were given a parent demographic survey and were asked to give it to their parents. Parents were assured that all information collected from the survey are confidential and that no individual parent or student are identifiable from the information which they provide. The items in this survey include a combination of forced-choice or fill-in-the-blank questions. The goal of this survey is to collect data regarding the participant's (their children) previous education in their native countries (number of years of education which represent the first independent variable). Other items are used for descriptive purposes necessary to develop a profile for the students who are participating in the study (i.e. whether using special education services, participation in bilingual classes, socioeconomic status and number of years of living in the United States). Also, some other items are used to get some demographic family information such as parents' ages, education, occupation, length of residence in the USA and fluency in English. Such information can help in understanding the data better at a later time (See Appendix A for the parent demographic survey and appendix B for its translated version).

Students' attitudes survey. The second main instrument in this study is the students' attitudes survey. The investigator went through a systematic approach in constructing this instrument. The approach is divided into five main steps. These steps are described below.

First step: Building basic knowledge in constructing surveys. This investigator began building some basic knowledge about constructing surveys because they are one of the most appropriate instruments for measuring attitudes. There are a number of sources that give guidelines in constructing surveys (Fowler, 1993; Sheatsley, 1983; Williams & Protheroe, 2008). Sheatsley (1983) indicated that a well-designed questionnaire should meet three criteria: a) meet the objective of the research, b) obtain the most complete and accurate information and c) realize that the previous two criteria need to be reached within the available time and resources. According to Fowler (1993), a well-designed questionnaire has to be self-explanatory, easy to use, restricted to closed answers, few in the number of items and clear in reading. As for Williams and Protheroe (2008), they provided researchers with a number of tips for constructing surveys: start with interesting questions, give a title for the survey, consider incentives for participation, avoid technical terms, put questions in logical order, and provide instructions. Sheatsley, Fowler, and Williams and Protheroe's guidelines have been implemented in constructing the survey designed by this investigator.

Williams and Protheroe (2008) also indicated that the most important rule before developing a survey is to search for well-developed existing surveys, which investigators can modify to suit their needs. For assessing attitudes, Henerson, Morris and Fitz-Gibbon (1978) also pinpointed four advantages of using already existing measures. First, researchers are then able to compare their results with research that used the same instruments before. Second, they can

benefit from the experiences of researchers who used those instruments. Third, they can save time. Fourth, they can be provided with reliability and validity information.

Second step: Examining instruments used in research studies. Taking into account the above advice of using already existing surveys, this investigator reexamined all the instruments used in the relevant studies that were cited in chapter 2. This investigator therefore created a matrix that: identifies research studies, identifies five instruments used in those research studies and finally provides reasons for their inclusion or exclusion (See appendix C). The five instruments were: (1) Attitude/Motivation Test Battery (AMTB) (1085b), (2) Baker's scale for measuring attitudes towards Welsh and bilingualism (1992), (3) Randhawa and Korppan's (1973) scale, namely Attitude toward learning French as a second language (ALFS), (4) Yager's (1998) scale, and (5) Lee's (2001) scale.

The scales of Randhawa and Korppan (1973), Yager (1998) and Lee (2001) were the three instruments this investigator decided not to use for the following reasons. First, only one to three items were directly devoted to the specific variables in this study. Second, reliability and validity of only ALFS were reported. AMTB and Baker's scale on the other hand were selected to be used in the constructed survey for this study, for the reasons discussed in the third and fourth steps respectively.

Third step: Choosing to include AMTB items. There are four reasons for selecting AMTB (1985b). First, AMTB is the instrument most frequently used by the studies cited in chapter 2. Second, AMTB is developed by Gardner and Symthe (1981) (See appendix D) and Gardner is a known researcher in attitudes and second language learning. He developed a model describing the role of attitudes and motivation in second language achievement. In addition, Gardner has updated both his model and his instrument continuously. Third, information

regarding reliability and validity of the AMTB is reported. AMTB demonstrated median internal consistency estimates of .91 and .89 (Gardner, 1985b). It also demonstrated both construct validity and predictive validity (Gardner & MacIntyre, 1992). Finally, and most importantly, AMTB has sub-scales that address the variables of this study and therefore it is highly appropriate to use those scales for this study.

In order to systematically select items from AMTB, this investigator organized these items into three categories. The first category was items that this investigator definitely chose because they met the following criteria: related to the proposed study, capable of measuring attitudes towards L1 as well as L2. The second category was items that she definitely chose not to include because they did not address the variables of this study. The third category was an undecided category as to whether those items should be included or not. (A matrix was created which showed the sorting of these items, See Appendix E.)

The investigator was inclined not to include the items in the undecided category as they have almost no relationship to the variables of this study. However, the investigator was open-minded to consider a second opinion from Bhavnagri (Personal Communication, August 22, 2009). Thus, she consulted Bhavnagri who also agreed that the items were not suitable to this study. Given that there was 100% agreement between both this investigator and Bhavnagri, these items were finally moved from an undecided category to a definitely no category and thus excluded from this study.

This process resulted in selecting items from three sub-scales of the AMTB and they are: Desire to Learn, Motivational Intensity and Attitudes towards Learning L2. Items that were adapted from the two sub-scales, Desire to Learn and Motivational Intensity are multiple-choice questions, while the items that were adapted from the sub-scale of Attitudes Towards Learning

L2 are on a 7-point Likert scale, ranging from 1 (strongly Disagree) to 7 (strongly Agree). The items in the AMTB investigated French as a second language. This investigator asked the same items but for investigating English and Arabic.

Fourth step: Choosing to include Baker's scale items. There are two reasons for selecting Baker's scale (1992). First, the items on the Baker's scale address variables of this study and therefore it is highly appropriate to use those items for this study. Second, Baker's scale in attitudes and language backgrounds were of acceptable reliability, above 0.85 (See appendix F). This investigator selected items from Baker's scale in exactly the same manner as that of AMTB. Here, too, the undecided items were finally not chosen for the same reason as in AMTB, namely because they did not relate to aims of this study (See appendix G which has a matrix documenting this process.)

Items that were adapted from Baker's scale are on a 5-point Likert scale, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Items in Baker's scale investigated Welsh as a minority language. This investigator asked the same items but for investigating both English and Arabic. Baker also had appropriate style and format for gathering data regarding language usage from participants. Therefore this format was also used in the Background Information section in the final survey.

Fifth step: Combining items from the two selected instruments to construct the final survey. The final survey was constructed in the following manner. The first 26 items are from AMTB and they include both multiple-choice and agreement scale questions. The next 22 items are from Baker's scale and they include only agreement scale questions. Having completed the construction of the items on the survey, this investigator next designed a section titled, Background Information that gathers personal data at the front of the survey. This background

information includes age, gender, grade and language usage (See appendix H for the students' attitude survey and appendix I for its translated version.)

Michigan Education Assessment Program (MEAP). Michigan Education Assessment Program (MEAP) tests are based on the Model Core Curriculum Outcomes and the Content Standards that have been approved by the Michigan State Board of Education. MEAP tests are criterion-referenced which means that students' progress is assessed in accordance with Michigan content standards and performance standards. The primary purpose of the current MEAP is to determine what students have learned and their present levels of achievement in specific four content areas: language arts, math, science, and social studies. It serves as a suitable method for achieving accountability for all Michigan schools (MDE, 2007-2008).

Two types of scores are obtained on the MEAP. The first score is a continuous measure that is developed using specific formulas. The second score is an ordinal measure that includes four levels (a) advanced [Level 1]; (b) proficient [Level 2]; (c) partially proficient [Level 3]; and (d) not proficient [Level 4]. The levels are determined by having a statewide committee that includes teachers, administrators, counselors, curriculum specialists, parents, and business leaders, who work together to develop cut scores that determines what score belongs to each level. Levels 1, 2, and 3 are considered passing by the state. While the continuous scores vary among the different tests, the levels are consistent across all tests (MDE, 2007-2008).

In addition, Student performances are evaluated in accordance with established achievement standards, and are used to determine if students have met the standards or not. Student performances on the tests are not compared to other student performances. MEAP scores do not indicate a grade level equivalency as a measure of student achievement (MDE, 2007-2008).

The MEAP tests have been tested for reliability. Reliability has been tested using Cronbach's Alpha formula for internal consistency, which tests the homogeneity of the items or the degree to which the responses to each item correlate with the total score. The internal consistency of the items in MEAP assessment meets high technical standards. However, no specific Cronbach coefficient alpha were reported (MDE, 2007-2008).

Validity of the tests is determined using three types of validity: criterion, construct, and content. Criterion validity is obtained through assessing the extent to which the current test can predict future performance. Construct validity is determined by measuring the parts or dimensions of assessment in order to verify their relations to the construct that is intended to measure. Finally, Content validity is measured by verifying the content of the assessment items as defined by the Michigan Curriculum Framework (MDE, 2007-2008).

Michigan English Language Proficiency Assessment (MI-ELPA). Michigan English Language Proficiency Assessment (MI-ELPA) was developed in response to Title III of the NCLB Act of 2001. This act requires school districts to assess their limited English proficient (LEP) students annually from kindergarten through 12th grade. The NCLB Act requires LEP students to demonstrate improved English proficiency annually and to meet state academic content and achievement standards (MDE, 2007).

MI-ELPA measures four components of English proficiency: (a) speaking, (b) listening, (c) reading, and (d) writing. Comprehension is also assessed using a composite of items from the Listening and Reading sections of the MI-ELPA. The five sections of the MI-ELPA included multiple-choice, constructed response, short response, and extended-response items. The number of test items varies by grade level. For example, K-2 students have to answer 69 items, with students in grades 9 through 12 assessed using 80 items. The speaking section of the assessment

includes 12 constructed-responses for grades 3 through 5 and 13 items for all other grade levels (MDE, 2007). Table 2 presents the number and type of items for each section of the MI-ELPA at each grade level.

Table 2: *Test Items by Type of Items for Each Section of the MI-ELPA*

Grade span	Listening	Speaking	Reading	Writing		Comprehension	Total Number of Items Per Grade Span
	MC	CR	MC	MC	CR	MC	MC + CR
K-2	21	13	22	7	6	33	69
3-5	21	12	21	13	5	36	72
6-8	21	13	23	13	4	32	74
9-12	24	13	25	13	5	33	80

Note: MC = multiple-choice; CR = constructed response

Source: Michigan Department of Education, 2007, p. 7

Harcourt Incorporated (the contractor for ELPA administration and reporting processes) developed the items. They used a bank of field-tested ELL items, passages and stimuli. The test items were originally developed for the Stanford English Language Proficiency (SELP). Specialists in assessment used item specifications to review each of the items to ensure that: 1) absence of bias and sensitive topics, 2) item soundness, 3) item soundness, absence of bias in items, 4) appropriateness of topic, vocabulary and language structure for each grade level and 5) match to Michigan ESL standards (MDE, 2007).

Trained assessors scored MI- ELPA. The multiple-choice items are either correct or incorrect. The constructed and short response items are scored using a rubric developed by test constructors to eliminate bias in scoring. The raw scores on the MI-ELPA are transformed into scale scores, which are used to determine performance levels. The MI-ELPA scores are then divided into four proficiency levels: (a) basic, (b) low intermediate, (c) high intermediate, and (d)

proficient (MDE, 2007). Table 3 provides an explanation of the four performance levels. Students' English proficiency is based on their performance and proficiency levels determine their placement into mainstream classes.

Table 3: *MI-ELPA Performance Levels*

Performance Level	Explanation
Proficient	The student's performance indicates sufficient or well-developed English language acquisition in the areas of listening, reading, writing, and speaking as defined for Michigan students at this grade level.
High Intermediate	This student's performance indicates near-sufficient or mostly-developed English language acquisition in the areas of listening, reading, writing, and speaking as defined for Michigan students at this grade level.
Low Intermediate	This student's performance indicates partial or developing English language acquisition in the areas of listening, reading, writing, and speaking as defined for Michigan students at this grade level.
Basic	This student's performance indicates minimal or no English language acquisition in the areas of listening, reading, writing, and speaking as defined for Michigan students at this grade level.

Note: Michigan Department of Education, 2006, p. 7-8

As defined by the MDE (2006), a cut score is "the minimum expected scale score for a proficient student" (p. 8). The scores vary across the grade levels of the student, with scores increasing at each grade level. Three levels of cut scores are defined as:

- *Intermediate low* (between the beginning and intermediate low performance levels)
- *Intermediate high* (between the intermediate low and intermediate high performance levels)
- Proficient (between the intermediate high and proficient performance levels). (MDE, 2007, p. 53).

MDE (2007) showed that ELPA uses a vertical scale that allows comparisons across the four test levels (k-2, 3-5, 6-8, 9-12). This type of scoring system provides scores for students on

the different tests for the four performance levels on the same scale. An example of the use of a vertical scale is the use of the same thermometer for winter and summer temperatures. Temperatures are lower in the winter, with comparisons provided using the same scale of measurement. In much the same way, student outcomes can be compared, with students in lower grades having lower scores and students in higher grades having higher scores indicating that the students in the higher scores have learned more. The use of vertical scaling provides schools with a tool to monitor and quantify progress across levels (MetriTech, Inc., 2006)

The test items were assessed for internal consistency using Cronbach coefficient alpha statistics. The reliability of the items generally was greater than .85 with the exception of the listening test for kindergarten students. The total test score reliabilities ranged from .89 for kindergarten through .96 for ninth grade students. These findings indicated that the MI-ELPA had adequate to excellent reliability, with scores for students in higher grades having greater reliability (MDE, 2007).

Evidence of validity of the MI-ELPA was determined through test content (content validity), internal structure (construct validity), and relationships to other variables (criterion validity). The items in the Harcourt ELL item bank were examined to determine if they accurately measured Michigan Learning Standards. Construct validity was used to determine the consistency of each item with the overall test. Point bi-serial correlations were used to determine the extent to, which an item discriminated between high and low proficient students (MDE, 2007).

Procedure

After receiving permission from the school district where the study conducted and the Human Investigation Committee (See Appendix J), the investigator contacted the principals of

the elementary and middle schools that were selected to be used in this study. At this meeting, the investigator explained the purpose of the study and provided assurances that the school and all students involved in the study will not be identifiable in the study. In addition, the researcher also asked the principals for a mailing list of students in the third through eighth grade who meet the criteria for inclusion in the study. This mailing list was used to send active consent forms (See Appendix K) and for the translated version (See Appendix L) to parents of these students. The consent form explains the purpose of the study, indicates their children's involvement in the research, and asks permission for the researcher to include the parents' and their children in the research. Two copies of the consent form were mailed to the parents via the United States Postal Service. The researcher included a preaddressed, postage-paid envelope for the parents to return the signed consent form to the researcher.

The parents also asked to complete a short demographic survey to obtain information about the family and their children. This form should not require more than 10 minutes to complete. The parents were asked to return one copy of the consent form by using in the enclosed envelope. Telephone numbers for the researcher and the HIC office are included on the consent form if the parent has any questions about their child's participation in the study.

As some parents might have limited English literacy, the consent forms were translated into Arabic. Copies of both forms (English and Arabic) were sent to the parents. The investigator had an expert in the Arabic language translate the consent form and the parent demographic survey. A second expert in Arabic verified that the translation is appropriate. Parents were not paid; however, they received a gift of appreciation (gift cards) when they sent back the demographic surveys with their children.

The investigator developed survey packets for the students. The survey packet included an adolescent assent form (See Appendix M), the translated version (See appendix N) and a copy of the survey. The students who met the criteria for the study and whose parents gave permission to participate met with the investigator in small groups. The researcher reviewed the adolescent assent form with the students who are 13 years or older and asked if they have any questions. After answering any questions that are posed, the investigator had the students sign and return one copy of the assent form. They were asked to retain the second copy for their records. For students who are between 7-12 years old, verbal assent was used. This means that those students were asked if they are willing to participate. The assent was documented purely by whoever completes the survey.

After the adolescent assent forms were returned, the investigator distributed the surveys. Because the students have various levels of English language proficiency, the investigator read the items on the survey to the students and assisted any who are having difficulty in understanding the meaning of the questions. The students were asked to work alone and not discuss the survey with other students who may be participating in other small groups. The students were not allowed to remove the surveys from the area where they are meeting with the researcher. After completing surveys, students received an educational gift of appreciation (five dollars or under).

The investigator coded the surveys with a sequential number. The purpose of the coding is to match the parent demographic survey, the student survey, and data from student records. The three sources of data received the same sequential number. The investigator created a log that includes the parent and student name, the code number, date the parent consent and demographic survey was mailed. As the parent consent was returned, the investigator coded a

survey packet with the student number and name. The reason for placing the name on the survey packet is to assure that the proper student receives the survey. The investigator was the only person who has access to the Excel file on which this information was stored. The Excel file is password protected and stored on the computer in the researcher's home. At the end of the data collection period, the investigator erased the Excel file to remove the link between the names of the participants and the code numbers.

As for obtaining MEAP and MI-ELPA test scores of participants, the district provided the investigator with the test scores.

Data Analysis

Data were analyzed by applying descriptive and inferential statistics using SPSS-Window, ver. 17.0.

Descriptive statistics. The investigator used frequency distributions, measures of central tendency and dispersion to summarize responses on the Parent Demographic Survey. She used frequency distributions, cross-tabulations, measures of central tendency and dispersion to summarize data from the students' attitudes survey. The above descriptive statistics are thus advantageous in summarizing the data collected (Fraenkel & Wallen, 2006).

After summarizing, the data from the Parent Demographic Survey were organized into two groups. The first group is the one with adequate formal schooling and the second group is the one with limited or no formal schooling. The median for the number of years was calculated to obtain the number of years at the 50th percentile. The median is 30 months. Students whose formal education is over 30 months were included in the first group and labeled as "Adequate Formal Schooling". While, students whose formal education is below 30 months or with no schooling were included in the second group and labeled as "Limited Formal Schooling".

The data from students' attitudes survey were also organized in order to develop subgroups. The division of groups according to their attitudes towards L1 and L2 differ according to the statistical procedures used to analyze the research questions. More information regarding the division of the sample into sub-groups according to their attitudes is provided in the following section.

The students' attitudes survey has three types of rating scales. The first 12 items have three responses with a scoring system giving 3 for positive response, 2 for neutral response and 1 for negative response. The second 14 items are on an agreement scale with a 7-point Likert scale, ranging from 1 (strongly Disagree) to 7 (strongly Agree). The third and last are 22 items are also on an agreement scale but with a 5-point Likert scale, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree). Given this variation in the ranges of 3, 5, and 7 point scales, this investigator found that it is important to change the Likert- scale items into 3 levels variables which are positive, neutral and negative.

Inferential statistics. In addition, the investigator used inferential statistical procedures to address the research questions and test the hypotheses developed for the study. The statistical test that used is 2x2 factorial univariate analysis of variance (UNI-ANOVA). In a factorial ANOVA design, two independent variables (Factor 1 and Factor 2) were manipulated simultaneously within the context of same experiment. This type of design is quite common in the behavioral sciences, for the important reason that it greatly expands the sorts of questions one can study in a research (Keppel & Zedeck, 1989). Using ANOVA as a statistical test, this investigator examined the relationship of formal schooling in L1 and attitudes towards L1 and L2 on academic achievement in mathematics. However, it was urgent to analyzed positive attitudes towards L1 and L2 together and negative attitudes towards L1 and L2 together. All decisions on

the statistical significance of the inferential analyses were made with a criterion alpha level of .05.

For analyzing categorical variables, nominal by nominal directional measures such as Lambda, and Goodman & Kruskal's Tau are implemented to test if the independent variable significantly identifies the categories of the dependent variable (Goodman & Kruskal, 1954). In such statistical procedure, it was necessary to have attitudes towards L1 (positive and negative) and attitudes towards L2 (positive and negative) be analyzed separately. The statistical analyses that were used to address each of the research questions and associated hypotheses are presented in Table 4.

Table 4: *Statistical Analyses*

Research questions/ Hypotheses	Variables	Statistical analyses
1- Is there a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA)?	<u>Dependent variable: English language proficiency (ordinal)</u> As measured by English Language proficiency Assessment (ELPA) 1. Basic 2. Low Intermediate 3. High Intermediate 4. Proficient	
H ₁ There is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students and English language proficiency as measured by the English Language Proficiency Assessment (ELPA).	<u>Independent variable: Groups (Nominal)</u> Students with adequate formal schooling Students with limited formal schooling	Nominal by nominal directional measures (Lambda, and Goodman & Kruskal's Tau) implemented to test if the independent variable significantly identifies the categories of the dependent variable.
3- Is there a relationship between Arabic speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire and English language proficiency as measured by English Language Proficiency Assessment (ELPA)?	<u>Dependent variable: English language proficiency (Ordinal)</u> as measured by English Language Proficiency Assessment (ELPA) 1. Basic 2. Low Intermediate 3. High Intermediate 4. Proficient	The cell frequencies and percentages of the cross-tabulations and test statistics and associated p value reported.
H ₃ there is a relationship between Arabic speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire and English language proficiency as measured by English Language Proficiency Assessment	<u>Independent variable: Groups (Nominal)</u> Students with positive attitudes towards L1 and L2 Students with negative attitudes towards L1 and L2	

Research questions/ Hypotheses	Variables	Statistical analyses
(ELPA)		
2- Is there a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking students mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP)?	<p><u>Dependent variable: Math achievement (Interval)</u> Mathematics academic achievement as Measured by the Michigan Education Assessment Program (MEAP).</p>	A 2x2 Factorial ANOVA implemented.
H ₂ There is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking students mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP).		Because of the non-significant interaction between the factors, only the main effects of the factors were investigated.
4- Is there a relationship between Arabic speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire and mathematic academic achievement in L2 (English) as measured by Michigan Education Assessment Program (MEAP)?	<p><u>Factor1: Attitude (Nominal)</u> 1. Students with positive attitudes towards L1 and L2 2. Students with negative attitudes towards L2 and L2</p> <p><u>Factor2: Schooling (Nominal)</u> 1. Students with adequate formal schooling 2. Students with limited formal schooling</p>	The descriptive statistics for groups, the factorial ANOVA F values, and associated p values, and partial Eta-squares (the effect size measures) reported for the main and interaction effects.
H ₄ there is a relationship between Arabic speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire and mathematic academic achievement in L2 (English) as measured by Michigan Education Assessment Program (MEAP).		

Chapter 4: Data Analysis and Results

This chapter is divided into two sections: descriptive analysis and inferential analysis. Descriptive analysis is for the data obtained from students' attitudes survey, parent demographic survey. Inferential analysis is for data gathered from the surveys, Michigan Educational Assessment Program (MEAP), and English language proficiency Assessment (ELPA) for 86 participants who were selected on a non-random sampling basis.

Descriptive Analysis

The descriptive statistical procedures were used to summarize, organize and simply the information collected from the Surveys. Examples of descriptive statistical procedures that were used in this study are: frequency distribution, means, median, standard deviations and percentages. The data gathered from both parents' demographic survey and students' attitudes survey were analyzed and presented in tables for clarification. These data provide enough information about the characteristics of participants, their parents as well as participants' attitudes towards L1 and L2. The descriptive analysis of parent demographic survey is presented next. With demographic survey, information about parents is reported followed by information on participants who are students. This is followed by the descriptive analysis of the students' attitudes survey.

Parents' demographic survey.

Parents' age, place of birth and number of children in household. As shown in Table 5, fathers mostly on the age group between 36-45 years (52.9%) as well as mothers (45.3%) while fathers who fell in the over 55 years old age group made the smallest percentage of participating fathers in this study (11.6%). As for mothers, the smallest percentages of them fell in 46-55 years old group. As for place of birth, 65.1% of father (56), 58.1% of mothers (50) and were born in

Yemen. Whereas, the rest were born in the following countries: Egypt, Iraq, Jordan, Palestine, Morocco, Libya, Lebanon, Saudi, Syria, US and Italy (See Table 6). As for the number of children in household (this includes participants and their siblings), 30.2% of the parents (26) have three kids while 5.8% have six kids (5).

Table 5: *Frequency Distribution for Age of Fathers and Mothers*

	Ranges	Frequency	Valid Percent
Father	26-35	15	17.6
	36-45	45	52.9
	46-55	15	17.6
	Over 55	10	11.8
Mother	26-35	33	38.8
	36-45	39	45.9
	45-55	13	15.3

Table 6: *Frequency Distribution for Place of birth of Fathers, Mothers and Participants*

Countries	Father		Mother		Participant	
	N	%	N	%	N	%
Egypt	2	2.3	2	2.3	2	2.3
Iraq	7	8.1	7	8.1	7	8.1
Jordan	2	2.3	2	2.3	3	3.5
Lebanon	7	8.1	7	8.1	7	8.1
Libya	6	7.0	6	7.0	6	7.0
Morocco	1	1.2	1	1.2	1	1.2
Palestine	2	2.3	1	1.2	1	1.2
Saudi	1	1.2	1	1.2	1	1.2
Syria	1	1.2	1	1.2	1	1.2
Yemen	56	65.1	50	58.1	57	66.3
US	-	-	7	8.1	-	-
Italy	-	-	1	1.2	-	-
Total	86	100	86	100	86	100

Parents' education, occupation, number of years in USA and their English fluency. As for the educational levels of fathers, 54.7% (47) of fathers have less than high school while 4.7% (4) have bachelor's degree and 9.3 (8) have graduate degree. For mothers, 72.1% (62) have less than high school, 4.7% (4) have bachelor's degree and 2.3 % (2) have graduate degree. As for occupations of fathers, most of fathers have low-income and technical jobs while most of mothers are housewives. As for the number of years in USA (See Table 7), the mean for fathers is 13.14 years (SD=11.23), while the mean for mothers is 7.17 years (SD=8.70). For father's fluency in English, the highest percentage of fathers indicated that they are fluent, 32.6% (28) while the lowest percentages of fathers do not speak English, 12.8% (11). As for mothers' fluency in English, it is totally the opposite, the highest percentage of mothers do not speak English, 48.8% (42) while the lowest percentage of mothers are fluent, 15.1% (13).

Table 7: *Mean Number of Years of Living in USA of Mothers and Fathers*

	N	Mean	SD
Q59 Number of years in US/Father	85	13.14	11.23
Q60 Number of years in Us/Mother	82	7.17	8.70

Participants' place of birth, schooling in home country and number of years in USA.

66.3% of participants (57) were born in Yemen, while the rest were born in the following countries: Egypt, Iraq, Jordan, Lebanon, Libya, Morocco, Palestine, Saudi and Syria (See Table 6). As shown in Table 8, the mean for the number of years in US for participants is 3.22 (SD=2.49) while the mean for the number of years of schooling of participants in home countries is 2.82 (SD=1.90). For asking about their children attending school in home country, 91.9% (79) showed that their children attend school in home country while 8.1% (7) showed that their children did not attend school in their countries (See Table 9).

Table 8: *Mean Number of Participants Living in USA and their Schooling in Home Countries*

	N	Mean	SD
Q61 Number of years in US/Child	86	3.22	2.49
Q63/Number of years of schooling	86	2.82	1.90

Table 9: *Frequency Distribution for Schooling of Participants in Home Countries*

	N	100%
Schooling in home country	79	91.9
No schooling in home country	7	8.1
Total	86	100

Participants attending bilingual programs and special education. For attending bilingual program, 97.7% (84) of the students who participated in this study attend bilingual programs while 2.3% (2) do not attend bilingual programs. As for special education, 97.7% (84) of the participants do not attend special education while 2.3% (2) attend special education. This section thus concludes all the information gathered from parents. The next section provides information from students who participated in this study.

Students' attitude survey. As for demographic information about participants, 3.5% (3) are third graders, 19.8% (17) are fourth graders, 19.8% (17) are fifth graders, 23.3% (20) are six graders, 18.6 (16) are seventh graders and 15.1 (13) are eight graders. As for gender of participants, 47.7% (41) are male while 52.3% (45) are female.

Languages that participants use with different people. As for the languages that the participants use with their fathers, 33.7% (29) use always Arabic and 1.2% (1) uses English more often than Arabic. As for the languages that the participants use with their mothers, 59.3% (51) always use Arabic and 1.2% (1) always uses English. As for languages use with siblings, 33.7% (29) use Arabic and English equally while 9.8% (8) always use English. As for language use with friends in classrooms, 41.9 (36) always use English, 8.1% (7) use always Arabic and the same percentage use Arabic more often than English. As for the use of languages with friends outside school, 8.1% (7) always use Arabic and 40.3% (35) always use English. As for use of languages with friends in playground, 4.7% (4) always use Arabic and 45.3% (39) always use English. For languages use with teachers, 3.5% (3) always use Arabic and 53.5% (46) always use English. As for use of languages with neighbors, 26.7% (23) use Arabic and English equally and 14.0% (12) use English more often than Arabic (See Table 10).

Table 10: *Frequency Distribution of Items Related to Languages Participants Use with Different People*

Languages participants use with	Always L1		L1> L2		L1= L2		L1< L2		Always L2	
	N	%	N	%	N	%	N	%	N	%
Dad	29	34.5	24	28.6	27	32.1	1	1.2	3	3.6
Mom	51	60.0	11	12.9	21	24.7	1	1.2	1	1.2
Siblings	14	16.5	11	12.9	29	34.1	23	27.1	8	9.4
School Friends	7	8.1	7	8.1	25	29.1	11	12.8	36	41.9
Outside school friends	7	8.1	8	9.3	24	27.9	12	14.0	35	40.7
Playground friends	4	4.7	8	9.3	24	27.9	11	12.8	39	45.3
Teachers	3	3.5	6	7.0	23	26.7	7	8.1	47	54.7
Neighbors	17	19.8	16	18.6	23	26.7	12	14.0	18	20.9

Languages that people use with participants. As for languages that different people use with participants, 45.3% (39) showed that their father always use Arabic with them while 3.5% (3) indicated that their fathers use English more often than Arabic. As for language uses of mother with participants, 69.8% (60) always use Arabic with their children, 1.2% (1) use English more often than Arabic and the same percentage always use English with their children. As for the languages that siblings use with participants, 10.5% (9) use Arabic more often than English and 29.1% (25) use Arabic and English equally.

As for language use of friends in schools with participants, 4.7% (4) indicated that school friends always use Arabic and 41.9% (36) showed that their friends always use English. As for language use of friends outside school with participants, 3.5% (3) showed that their friends out school always use Arabic and 44.2% (38) indicated that their friends outside school always use English. As for language use of friends in playground with the participants, 4.7% (4)

indicated that friends in playground use Arabic more often than English and 41.9% (36) showed that their friends in playground always use English.

As for language use of teachers with the participants, 2.3% (2) indicated that teachers always use Arabic, 3.5% (3) showed that their teachers use Arabic more often than English, 23.3% (20) reported that teaches Arabic and English equally with them, 11.6 % (10) indicated that teachers use English more often than Arabic and 59.3% (51) showed their teachers always use English. As with neighbors, 20.9% (18) of participants indicated that their neighbors always use Arabic with them, 11.6% (10) indicated that their neighbors use Arabic more often than English, 24.4% (21) indicated that their neighbors use Arabic and English equally, 18.6% (16) indicated that their neighbors use English more often than Arabic and 24.4% (21) showed that their neighbors use always English with them (See Table 11).

Table 11: *Frequency Distribution for Items Related to Languages People Use with Participants*

Languages that people use with participants	Always L1		L1> L2		L1= L2		L1< L2		Always L2	
	N	%	N	%	N	%	N	%	N	%
Dad	39	46.4	20	23.8	22	26.2	3	3.6	0	.0
Mom	60	70.6	10	11.8	13	15.3	1	1.2	1	1.2
Siblings	15	17.6	9	10.6	25	29.4	20	23.5	16	18.8
School Friends	4	4.7	11	12.8	20	23.3	15	17.4	36	41.9
Outside school friends	3	3.5	6	7.0	26	30.2	13	15.1	38	44.2
Playground friends	5	5.8	4	4.7	26	30.2	15	17.4	36	41.9
Teachers	2	2.3	3	3.5	20	23.3	10	11.6	51	59.3
Neighbors	18	20.9	10	11.6	21	24.4	16	18.6	21	24.4

Languages participants use in different activities. Moving to the language use of participants in accomplishing different activities; first, for being in mosques, 66.3% (57) indicated they always use Arabic while they are in mosques, 16.3 (14) use Arabic more often than English and 1.2 % (1) uses English more often in Arabic. Second, for watching TV, 36.0% (31) use always English and 7.0% (6) always use Arabic. Third, for reading newspapers and magazines, 54.7% (47) always use English, 5.8% (5) always use English and the same percentage use Arabic more often than English. Fourth, for listening to records and cassettes, 45.3% (39) always use English and 8.1% (7) use Arabic more often than English. Fifth, for listening to radio, 47.7% (41) use always English, 9.3% (8) use Arabic more often than English and the same percentage use English more often than Arabic,. Sixth, for using computer and internet, 80.2% (69) always use English and 1.2% (1) always uses Arabic (See Table 12).

Table 12: *Frequency Distribution for Items Related to Languages Participants Use in Different Activities*

Languages participants use in	Always L1		L1> L2		L1= L2		L1< L2		Always L2	
	N	%	N	%	N	%	N	%	N	%
Being in the mosque	57	66.3	14	16.3	11	12.8	1	1.2	3	3.5
Watching TV and DVD	6	7.0	10	11.6	27	31.4	12	14.0	31	36.0
Reading newspapers and magazines	5	5.8	5	5.8	18	20.9	11	12.8	47	54.7
Listening to records and cassettes	14	16.3	7	8.1	15	17.4	11	12.8	39	45.3
Listening to radio	12	14.0	8	9.3	17	19.8	8	9.3	41	47.7
Using computer and internet	1	1.2	2	2.3	9	10.5	5	5.8	69	80.2

Data related to attitudes towards L1. Table 13 lists the mean responses and standard deviations for each question regarding the attitudes towards L1 which were analyzed into 3 levels: positive, neutral and negative. It shows that questions 20, 21, 22, 23 asking about attitudes towards L1 have the highest means (M= 4.06, 4.27, 3.33, and 4.30 respectively). Such sample mean responses for these questions implied that participants agree. While the lowest highest mean responses were for questions 24, 25 and 26 which implied participants' disagreement (M= 1.45, 1.43, 1.48). As Table 14 shows, the highest percentage of participants (76.7%) had positive attitudes to Q 41 "Arabic is worth learning" while lowest percentage (1.2%) had a positive attitude to Q11 "Speaking Arabic with families in neighbors". For the negative responses, the highest percentage of participants (89.5%) had negative attitudes to Q24 "I hate Arabic" while the lowest percentage of participants (3.5%) had negative attitude to Q46 "We need to preserve Arabic".

Table 13: *Mean Number of Items Related to Students' Attitudes towards L1*

	N	Mean	SD
Q20 Learning Arabic is great	86	4.06	1.43
Q21 I enjoy learning Arabic	86	4.27	1.18
Q22 I plan to learn Arabic	86	4.33	1.12
Q23 I love learning Arabic	86	4.30	1.20
Q24 I hate Arabic	86	1.45	1.00
Q25 Learning Arabic is a waste of time	86	1.43	.91
Q26 Learning Arabic is dull	86	1.48	1.09
Q38 I like hearing Arabic	86	2.02	1.15
Q39 I like speaking Arabic	86	1.87	1.06
Q40 Arabic is difficult to learn	86	3.30	1.55
Q41 Arabic is worth learning	86	1.80	1.16
Q42 I prefer to be taught Arabic	86	2.42	1.39
Q43 I like to marry Arabic Speaker	86	2.33	1.31
Q44 I'd like my children to speak Arabic	86	2.28	1.16
Q45 I prefer to watch TV in Arabic than Eng	86	2.83	1.34
Q46 We need to preserve Arabic	86	1.73	.90
Q47 I'll likely use Arabic as an adult	86	2.08	1.13
Q48 Children should be made to learn Arabic	86	2.15	1.12

Table 14: *Frequency Distribution of Items Related to Attitudes towards LI*

	Negative		Neutral		Positive	
	N	%	N	%	N	%
Q7 Arabic song	23	27.1	17	20.0	45	52.9
Q8 Speaking Arabic out of school	8	9.3	40	46.5	38	44.2
Q9 Arabic TV programs	4	4.7	54	62.8	28	32.6
Q10 Arabic play	11	12.8	55	64.0	20	23.3
Q11 Arabic families in neighborhood	1	1.2	41	47.7	44	51.2
Q12 Reading Arabic magazines and papers	12	14.0	37	43.0	37	43.0
Q20 Learning Arabic is great	16	18.6	6	7.0	64	74.4
Q21 I enjoy learning Arabic	13	15.1	3	3.5	70	81.4
Q22 I plan to learn Arabic	9	10.5	5	5.8	72	83.7
Q23 I love learning Arabic	12	14.0	4	4.7	70	81.4
Q24 I hate Arabic	7	8.1	2	2.3	77	89.5
Q25 Learning Arabic is a waste of time	4	4.7	4	4.7	78	90.7
Q26 Learning Arabic is dull	8	9.3	1	1.2	77	89.5
Q38 I like hearing Arabic spoken	61	70.9	15	17.4	10	11.6
Q39 I like speaking Arabic	64	74.4	16	18.6	6	7.0
Q40 Arabic is difficult to learn	43	50.0	12	14.0	31	36.0
Q41 Arabic is worth learning	66	76.7	11	12.8	9	10.5
Q42 I prefer to be taught Arabic	46	53.5	21	24.4	19	22.1
Q43 I like to marry Arabic speaker	46	53.5	28	32.6	12	14.0
Q44 I'd like my children to speak Arabic	47	54.7	28	32.6	11	12.8
Q45 I prefer to watch TV in Arabic than Eng	34	39.5	27	31.4	25	29.1
Q46 We need to preserve Arabic	66	76.7	17	19.8	3	3.5
Q47 I'll likely use Arabic as an adult	57	66.3	19	22.1	10	11.6
Q48 Children should be made to learn Arabic	51	59.3	28	32.6	7	8.1

Data related to attitudes towards L2. Table 15 lists the mean responses and standard deviations for questions related to attitudes towards L2. It shows that questions 13, 14, 15 and 16 have the highest means (M= 4.60, 4.60, 4.71, and 4.63 respectively). So, the sample mean responses for these questions implied that participants agree with the statements regarding L2. While the lowest mean responses were for questions 17, 18 and 19 which implies that participants' disagreement with the statement (M= 1.51, 1.42, 1.47). As Table 16 shows, the highest percentage of participants (75.6%) had positive attitude to Q 31 "I prefer to be taught in English" while the lowest percentage (1.2%) had a positive attitude to Q2 and Q 3 "Speaking English out of school and watching English TV programs".

Table 15: *Mean Number of Items Related to Students' Attitudes towards L2*

	N	Mean	SD
Q13 Learning Eng is great	86	4.60	.83
Q14 I enjoy learning Eng	86	4.60	.87
Q15 I plan to learn Eng	86	4.71	.81
Q16 I love learning Eng	86	4.63	.85
Q17 I hate Eng	86	1.51	1.00
Q18 Learning Eng is a waste of time	86	1.42	.90
Q19 Learning Eng is dull	86	1.47	.97
Q27 I like hearing English spoken	86	1.53	.93
Q28 I like speaking English	86	1.49	.98
Q29 Eng is difficult to learn	86	3.53	1.51
Q30 Eng is worth learning	86	1.49	.95
Q31 I prefer to be taught Eng	86	1.71	1.04
Q32 I like to marry Eng speaker	86	3.17	1.53
Q33 I'd like my children to speak Eng	86	2.02	1.20
Q34 I prefer to watch TV in Eng than Arabic	86	2.33	1.26
Q35 We need to preserve Eng	86	1.60	.92
Q36 I'll likely use Eng as an adult	86	1.71	.87
Q37 Children should be made to learn Eng	86	2.05	1.23

Table 16: *Frequency Distribution of Items Related to Attitudes towards L2*

	Negative		Neutral		Positive	
	N	%	N	%	N	%
Q1 English song	10	11.6	17	19.8	59	68.6
Q2 Speaking Eng out of school	1	1.2	36	41.9	49	57.0
Q3 Eng TV programs	1	1.2	43	50.0	42	48.8
Q4 Eng play	13	15.1	52	60.5	21	24.4
Q5 Eng families in neighborhood	4	4.7	30	34.9	52	60.5
Q6 Reading Eng magazines and papers	4	4.7	25	29.1	57	66.3
Q13 Learning Eng is great	3	3.5	4	4.7	79	91.9
Q14 I enjoy learning Eng	3	3.5	7	8.1	76	88.4
Q15 I plan to learn Eng	4	4.7	1	1.2	81	94.2
Q16 I love learning Eng	3	3.5	6	7.0	77	89.5
Q17 I hate Eng	6	7.0	2	2.3	78	90.7
Q18 Learning Eng is a waste of time	5	5.8	3	3.5	78	90.7
Q19 Learning Eng is dull	6	7.0	2	2.3	78	90.7
Q27 I like hearing English spoken	74	86.0	8	9.3	4	4.7
Q28 I like speaking English	77	89.5	3	3.5	6	7.0
Q29 Eng is difficult to learn	48	55.8	15	17.4	23	26.7
Q30 Eng is worth learning	78	90.7	1	1.2	7	8.1
Q31 I prefer to be taught Eng	65	75.6	16	18.6	5	5.8
Q32 I like to marry Eng speaker	26	30.2	26	30.2	34	39.5
Q33 I'd like my children to speak Eng	54	62.8	23	26.7	9	10.5
Q34 I prefer to watch TV in Eng than Arabic	47	54.7	23	26.7	16	18.6
Q35 We need to preserve Eng	71	82.6	11	12.8	4	4.7
Q36 I'll likely use Eng as an adult	65	75.6	20	23.3	1	1.2
Q37 Children should be made to learn Eng	60	69.8	15	17.4	11	12.8

Inferential Analysis

Two main inferential statistical procedures were used to investigate the research hypotheses. The first statistical test is 2x2 factorial univariate analysis of variance (UNI-ANOVA). This test was used to examine the effect of formal education in L1 (adequate or limited) and students' attitudes towards L1 and L2 on academic achievement in Math as measured by MEAP. The second statistical test is nominal by nominal directional measures such as Lambda, and Goodman & Kruskal's Tau. This test was used to investigate the effect of formal education in L1 and students' attitudes towards languages on English language proficiency as measured by ELPA. Both tests were used to determine the statistical significance between variables and to decide on the probability of rejecting or not rejecting the null hypotheses (Fraenkel & Wallen, 2003). The interpretation and discussion of hypotheses 1 and 3 were reported first in this chapter as they both use the same statistical procedure. Hypotheses 2 and 4 were next reported for they too have the same statistical procedure.

Hypotheses 1 and 3. The first hypothesis states that there is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA).

The medium for the number of years of schooling in home countries was 30 months. This medium was obtained in order to divide the sample into two groups: 1) with limited or no schooling and 2) with adequate schooling. This procedure resulted in 43 participants in each group. To start with group with limited schooling, as Table 17 shows, 5 participants achieved basic level in ELPA, 32 participants scored intermediate level, 2 participants achieved proficient level and finally 4 achieved advanced- proficient. As for adequate formal schooling group, 12

scored basic level, 27 intermediate level, 3 achieved proficient level and 1 achieved advanced-proficient (See Figure 1). As showed in Table 18, there is no significant relationship between schooling in L1 and English language proficiency ($\tau=.023$, $p=.130$). Therefore, the null-hypothesis which states that there is no statistically significant relationship between (a) adequate formal education and (b) limited formal education and English language proficiency as measured by the English Language Proficiency Assessment (ELPA), was retained.

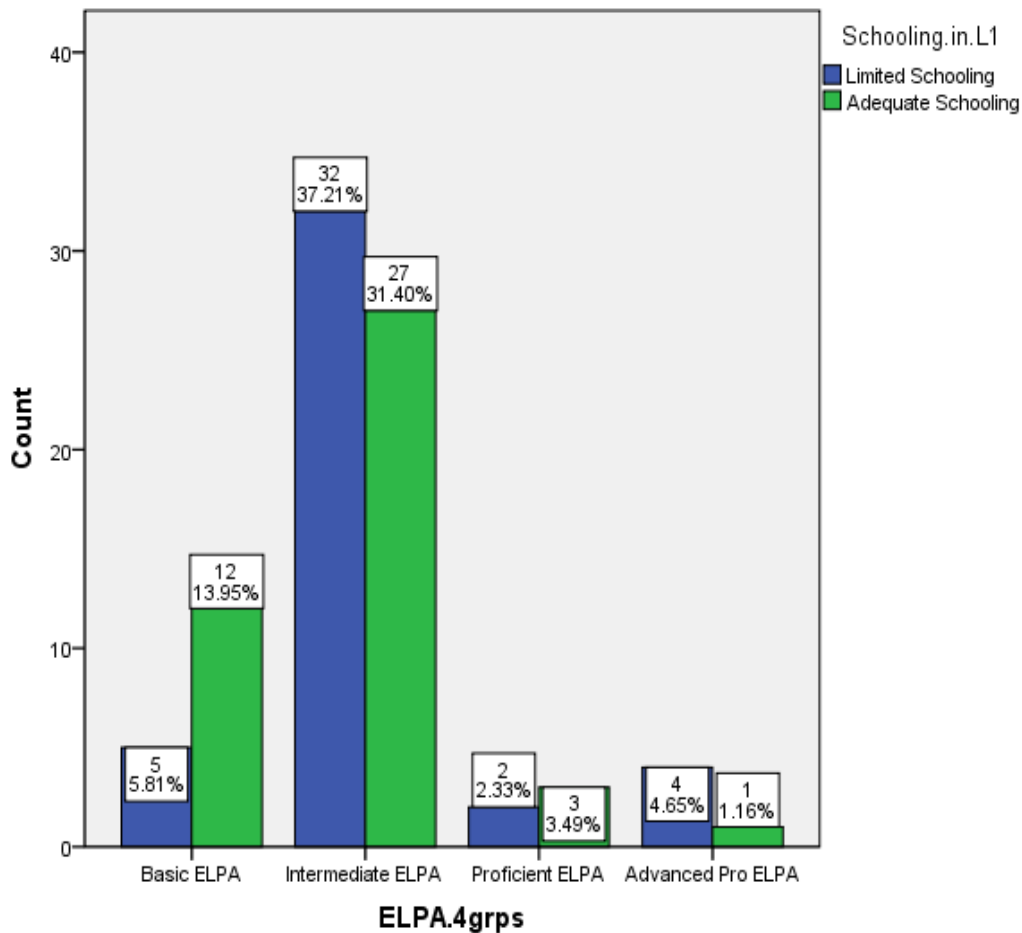
Table 17: *Cross-tabulation for Achievement in ELPA and Schooling in L1*

ELPA		Schooling.in.L1		Total
		Limited schooling	Adequate Schooling	
Basic	Count	5	12	17
	% within ELPA.4grps	29.4%	70.6%	100.0%
	% within Schooling.in.L1	11.6%	27.9%	19.8%
	% of Total	5.8%	14.0%	19.8%
Intermediate	Count	32	27	59
	% within ELPA.4grps	54.2%	45.8%	100.0%
	% within Schooling.in.L1	74.4%	62.8%	68.6%
	% of Total	37.2%	31.4%	68.6%
Proficient	Count	2	3	5
	% within ELPA.4grps	40.0%	60.0%	100.0%
	% within Schooling.in.L1	4.7%	7.0%	5.8%
	% of Total	2.3%	3.5%	5.8%
Advanced Proficient	Count	4	1	5
	% within ELPA.4grps	80.0%	20.0%	100.0%
	% within Schooling.in.L1	9.3%	2.3%	5.8%
	% of Total	4.7%	1.2%	5.8%
Total	Count	43	43	86
	% within ELPA.4grps	50.0%	50.0%	100.0%
	% within Schooling.in.L1	100.0%	100.0%	100.0%
	% of Total	50.0%	50.0%	100.0%

Table 18: *Directional Measures for Schooling in L1 and ELPA Achievement*

			Value	Sig.
Nominal	Lambda	Symmetric	.114	
		by ELPA.4 grps	.000	
Nominal	Goodman and Kruskal	Schooling in L1	.186	
		ELPA.4 grps	.023	.130 ^e
		Tau	.062	.174 ^e

Figure 1. Distribution of participants across four proficiency level of ELPA with schooling in L1.



The third hypothesis states that there is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic) and L2 (English) as measured by an adapted questionnaire, and English language proficiency as measured by the English Language Proficiency Assessment (ELPA).

The attitude questions regarding L1 and L2 were grouped together to divide the sample into four groups: 1) group with positive attitude towards L1, 2) group with negative attitude toward L1, 3) group with positive attitude towards L2 and 4) group with negative attitude toward L2. This procedure resulted in different number of participants in each group. To

start with group with positive attitudes towards L1, as shown in Table 19 and Figure 2, 3 participants achieved basic level in ELPA, 9 participants scored intermediate level and no participant achieved proficient level nor advanced proficient level. As for negative attitudes towards L1 group, 10 scored basic level, 29 achieved intermediate level, and no participant achieved proficient level nor advanced proficient level. As it is shown in table 19, that there is no significant relationship between positive and negative attitudes towards L1 and English language proficiency ($t=.009$, $p=.705$).

Moving to L2 and specifically to the group with positive attitudes, 3 achieved the basic level, 10 achieved intermediate level and no participant achieved proficient level nor advanced proficient level. As for the group with positive attitude, 6 scored basic level, 37 achieved intermediate level and 5 participants in proficient level as well as in advanced proficient level (See Table 20 and Figure 3). As shown in Table 20, there is no significant relationship between positive and negative attitudes towards L2 and English language proficiency ($t=.013$, $p=.494$). Therefore, the null-hypothesis, which states that there is no statistically significant relationship between Arabic speaking middle school students' attitudes towards L1 (Arabic) and L2 (English) and English Proficiency Assessment as measured by (ELPA) was retained.

Table 19: *Cross-tabulation for ELPA Achievement Levels and Attitudes towards L1*

ELPA	L1		Total
	Positive attitude	Negative attitude	
Basic	3 (23.1%)	10 (76.9%)	13 (100.0%)
Intermediate	9 (23.7%)	29 (76.3%)	38 (100.0%)
Proficient	0 (.0%)	4 (100.0%)	4 (100.0%)
Advanced Proficient	0 (.0%)	3 (100.0%)	3 (100.0%)
Total	12	46	58

NOTE. Goodman & Kruskal Tau: $\tau = .009$, $p > .05$.

Table 20: *Cross-tabulation for ELPA Achievement Levels and Attitudes towards L2*

ELPA	L2		Total
	Positive attitude	Negative attitude	
Basic	3 (33.3%)	6 (66.7%)	9 (100.0%)
Intermediate	10 (21.3%)	37 (78.7%)	47 (100.0%)
Proficient	0 (.0%)	5 (100.0%)	5 (100.0%)
Advanced Proficient	0 (.0%)	5 (100.0%)	5 (100.0%)
Total	13	53	66

NOTE. Goodman & Kruskal Tau: $\tau = .013$, $p > .05$.

Figure 2. Distribution of participants according to their attitudes towards L1 and their achievement in ELPA.

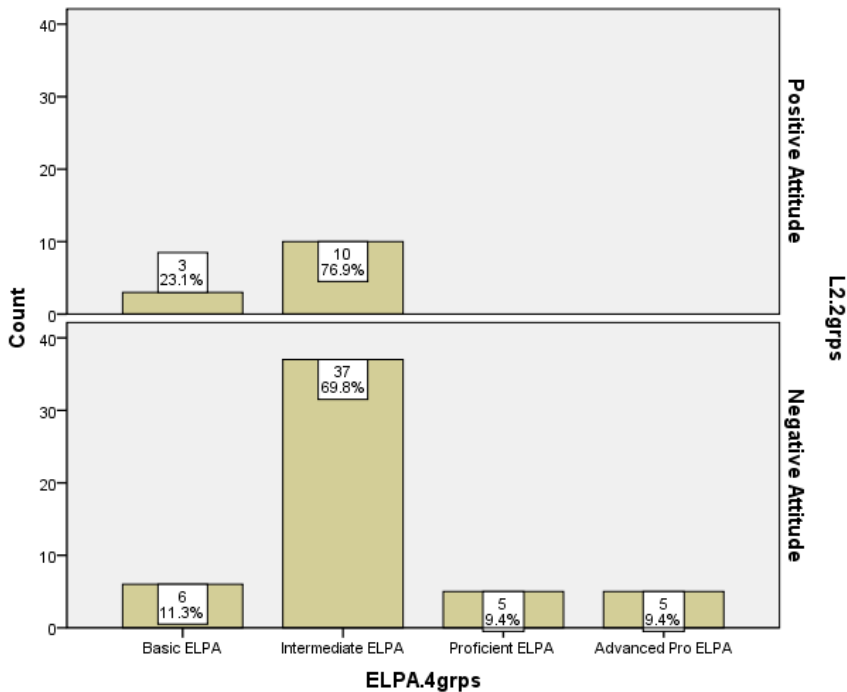
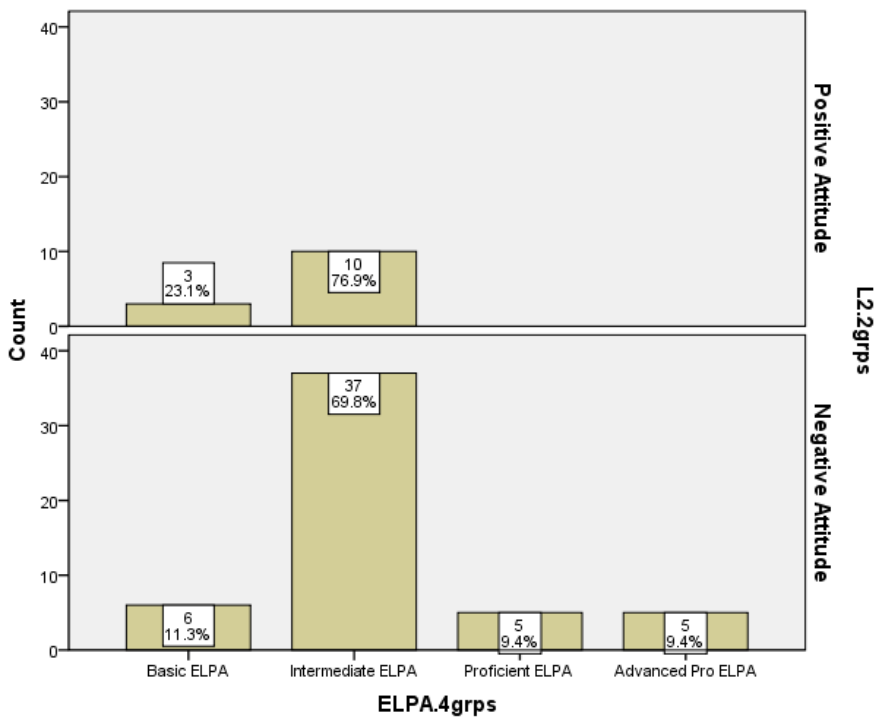


Figure 3. Distribution of participants according to their attitudes towards L2 and their achievement in ELPA.



Hypotheses 2 and 4. The second hypothesis states that there is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP).

As shown in Table 21, 43 participants have adequate formal schooling and the same number has limited formal schooling. In Table 22, it shows that there was no significant relationship between formal schooling in L1 and academic achievement in Math ($F = .98$, $df = 1, 56$, $p = .33$, partial $\eta^2 = .01$). Thus, the null hypothesis which states that there is no statistically significant relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and mathematics academic achievement as measured by MEAP was retained.

Table 21: *Mean Number of Kind of schooling in L1*

Schooling in L1	N	Mean	SD
Limited	43	576.65	146.12
Adequate	43	596.98	135.64
Total	86	586.81	140.51

Table 22: *Analysis of Variance for Attitudes towards Language and Schooling in L1*

Source	Type III		Partial Eta Squared	Mean Square	F	Sig.
	Sum of Squares	Df				
Attitude L1&L2	7445.341	1	.007	7445.341	.382	.539
Schooling in L1	19167.716	1	.019	19167.716	.983	.326
AttitudeL1 L2*schooling in L1	39295.109	1	.037	39295.109	2.016	.162
Error	1013778.265	52		19495.736		
Total	21770900.00	56				

The fourth hypothesis states that there is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic) and L2 (English) as measured by an adapted questionnaire, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP).

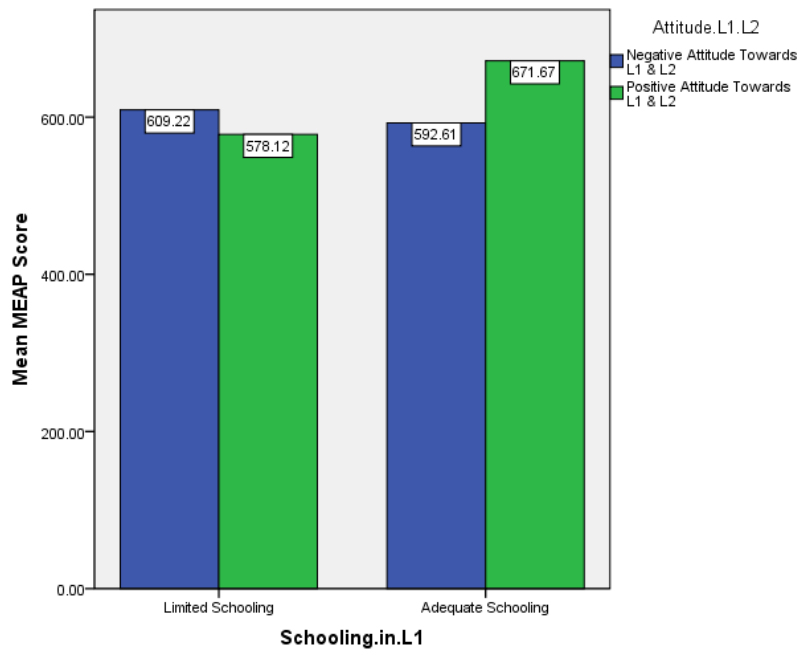
The participants are divided into two groups according to their attitudes; G1: Students with positive attitudes towards L1 and L2, and G2: Students with negative attitudes towards L1 and L2 (See Table 23). As shown earlier in Table 22, there is no significant relationship between attitudes towards L1 and L2 and academic achievement in Math ($F = .38$, $df = 1, 56$, $p = .54$, partial $\eta^2 = .02$). Also, Figure 4 displays the mean MEAP scores for the students who had negative versus positive attitudes clustered within the limited and adequate schooling.

Therefore, the null hypothesis which states that there is no statistically significant relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic) and L2 (English) and mathematics academic achievement as measured by MEAP was retained.

Table 23: *Frequency Table of Attitudes towards L1 and L2*

	Frequency	Valid Percent	Mean	SD
Students with positive attitudes towards L1 and L2	29	51.8	598.15	123.59
Students with negative attitudes towards L1 and L2	27	48.2	616.83	155.83
Total	56	100.0	607.82	140.25

Figure 4. Mean MEAP score of participants with negative and positive attitudes with L1 schooling.



Chapter 5: Discussion

The purpose of this study was to investigate the relationship between formal schooling in L1 (limited or adequate) and students' attitudes towards L1 and L2, and English language proficiency and academic achievement in math of 86 Arabic speaking third graders through eighth graders. The study was based on the review of literature, which claimed that a significant relationship between the variables mentioned above.

As for the first independent variable namely formal education in L1, the theoretical framework is based on Cummins's (1981b) model of bilingualism, Common Underlying Proficiency (CUP), which stresses the existence of cognitive/academic proficiency which is common across languages. Through CUP, transfer of cognitive/academic proficiency or literacy skills becomes possible across languages (Cummins, 1989). Krashen (1996) rationalized the transfer hypothesis by claiming that the process of literacy development is similar across languages and literacy development in L1 is positively correlated with L2 literacy development. Other researchers (Bosher & Owekamp, 1992; Calderon, 2003; Carson & Kuehn, 1992; Carson et al., 1990; Dakroub, 2002; Earl-Castillo, 1990; García-Vázquez et al., 1997; Jiang & Kuehn, 2001; Laija-Rodriguez et al., 2006; Meschyan & Hernandez, 2002; ; Padilla & Gonzalez, 2001; Ramirez & Shapiro, 2007; Shepherd, 2006; Sparks et al., 2008; Upton & Lee-Thompson, 2001; Wakabayashi, 2002; Walter, 2004; Wang et al., 2006) examined the effects of formal education in L1 and native language proficiency on academic achievement and English language proficiency.

As for the second independent variable namely attitudes towards L1 and L2, the theoretical framework is grounded on Gardner' (1985) socio-educational model which depicts the role of second language learners' attitudes towards L2 in achieving success in L2.

Also, Krashen (1981) brought the role of attitudes in second language acquisition to the forefront through his Affective Filter Hypothesis, which proposes that the emotional states of students affect the achievement of CLD students as they allow or hinder the processing of input to take place. Krashen explained that maintaining minority students' first language might counteract negative attitudes towards language learning leading to improved performance in L2 and academic achievement in general.

A number of researchers assured Gardner's theory through their researches (Bialystok & Frohlich, 1978; Gardner et al., 1999; Masgoret & Gardner, 2003; Nguyen et al., 2001; Randhawa & Korpan, 1973; Ushida, 2005; Yager, 1998). Regarding attitudes towards L1, a few number of studies (Lee, 2002; Sanchez, 2006) investigated the relationship between attitudes towards L1 and second language achievement.

Both descriptive and inferential statistical procedures used in this study to provide a clear understanding of the data as well as to investigate the relationships between the variables. This study presented a total of four research hypotheses and they are:

- 1- There is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA).
- 2- There is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and mathematics academic achievement as measured by the Michigan Education Assessment Program (MEAP).

- 3- There is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and English language proficiency as measured by the English Language Proficiency Assessment (ELPA).
- 4- There is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP).

In view of the analysis of the data and the review of literature, the findings related to each of the research questions are discussed below.

Discussion of Hypothesis 1

The first research hypothesis stated that there is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and the English language proficiency as measured by the English Language Proficiency Assessment (ELPA).

As it was reported in chapter 4, the null hypothesis was retained since the analysis of the data shows that there is no significant relationship between schooling in L1 and English language proficiency ($\tau=.023$, $p=.130$). Therefore, the above research hypothesis was not supported. This study's findings are not similar to other studies that been done earlier. To illustrate, A number of researchers (Jiang & Kuehn, 2001; Earl-Castillo, 1990; Shepherd, 2006; Laija-Rodriguez et al, 2006; Wakabayashi, 2002) investigated the role of L1 education in developing second language proficiency did find a significant relationship between the two variables.

This discrepancy between the findings of this study and earlier studies could perhaps be explained in the following manner. All the earlier studies investigated the effect of L1 education in L2 proficiency through measuring L2 proficiency in one or two skills. In this study, the English language proficiency is measured by the holistic score of ELPA. ELPA has sub-scores for students' performance in four skills: Listening, Reading, writing and speaking. However, this investigator did not have access to these sub-scores. The holistic ELPA score does not shed light on the relationship between independent and dependent variables. Perhaps, if individual sub-scores were available to this investigator, then this investigator could have addressed the individual contribution of each of the four skills and its relationship to the independent variables which might have led to findings similar to the findings of earlier studies that are reported next. First example, Jiang and Kuehn (2001) found a positive correlation between L1 education and L2 writing. Second example, Shepherd (2006) who found significant difference in English reading between two groups: one with continuity L1 education and another with discontinuity in L1 education. Third example, Laija-Rodriguez et al. (2006) found a weak but significant relationship between CALP in L1 and English reading. Fourth example, Earl-Castillo (1990) concluded a positive correlation between L1 education and L2 oral proficiency.

Discussion of Hypothesis 2

The second research hypothesis stated that there is a relationship between (a) adequate formal education and (b) limited formal education in Arabic language of Arabic-speaking middle school students, and mathematics academic achievement as measured by the Michigan Education Assessment Program (MEAP).

The null hypothesis was retained since the analysis of the data shows that there is no significant relationship between schooling in L1 and academic achievement in math ($F = .98$, $df = 1, 56$, $p = .33$, partial $\eta^2 = .01$). Therefore, the above research hypothesis was not supported.

This finding is not similar to the findings of other studies. For example, (Bosher & Owekamp, 1992; Calderon, 2003; Padilla & Gonzalez, 2001) found a relationship between schooling and academic proficiency in L1 on the academic achievement of non-native speaker students in USA. This discrepancy between the findings of this study and earlier studies could perhaps be explained in the following manner. In the case of Bosher and Owekamp (1992) and Padilla and Gonzalez (2001), they investigated the academic achievement in USA using Grade Point Average (GPA) rather than concentrating on the achievement of students in particular subjects, such as math which is what this study did. Perhaps one reason why this study did not have a finding similar to the findings of studies done by Bosher and Owekamp (1992) and Padilla and Gonzalez (2001) is that their GPA measure includes student's performance not only in math, but also in all other subjects aggregated together. Given this study has specific measure only for math; it is not quite comparable to overall GPA performance. In other words, their performance in subjects other than math could have enhanced the GPA score. Thus, that high GPA score is related to the independent variable (formal education in L1) but that is due to the contribution of subjects other than math.

As for Calderon (2003), he investigated proficiency in both L1 and L2 on academic achievement measured by science. First, the measurement of academic achievement in this study is math while the measurement of academic achievement in Calderon's study is Science. Although both of courses are academic subjects, they are not the same. Therefore, that may explain why this study's findings did not show similar outcomes. Moreover, Calderon studied

the effect of proficiency in both L1 and L2 on academic achievement in science. Given that this study investigated the role of schooling in L1 only and with no inclusion of English language proficiency, it is not quite similar or equal of implementing proficiency in both languages. Thus, the achievement in science could have been affected by the proficiency in both languages. That may be a second reason why this study's findings did not show similar outcomes. In the next section, a discussion regarding common reasons as to why the above research hypotheses were not supported is presented.

Common Discussion Applicable to Hypotheses 1 and 2

There are five possible explanations as to the reasons why the above two research hypotheses were not supported. First, the education outside American schools but within the community perhaps closes the gap between adequate schooling group and limited schooling group. This can be explained in the following manner. The mean number of years of students' living in USA is 3.22. That many years might be adequate for young students to learn English and acquire knowledge to positively influence their academic achievement and their English language proficiency.

During these 3.22 years, these students have been exposed to media, books and communication in English. For example, 65.1% of students with limited schooling reported that their teachers use always English when they speak to them. Additionally, 48.8% of them reported that their friends from outside the school always use English with them and 46.5% of them reported that their friends from inside the school always use English when communicating with them. Lastly, 58.1% of them reported that they always read in English. As for the media, students with limited schooling reported that 74.4% of them use of computer and internet always in English. Furthermore, 34.9% of them reported that they watch TV always in English and

37.2% reported that they listen to records and cassettes always in English. The above mentioned usage of English may have closed the gap between adequate schooling group and limited schooling, which in turn may have closed the gap at their proficiency in English. Perhaps, as result, no relationship was thus found between adequate and limited schooling groups in terms of English language proficiency and academic achievement.

Second, the majority of participants in this study, 34 (59.6%) with limited schooling and 23 (40.4%) with adequate schooling came from Yemen. One of the biggest challenge that face children in Yemen is getting access to school, especially girls (UNCIF, 2004). Although the Yemeni government in the early 1970s started efforts to provide good education for all children, there remains substantial difference between the education in rural and urban areas and between education of boys and girls. Additionally, a lot of poor families cannot afford to send their kids to schools due to high costs of education.

Felishman (2009) linked the poor level of education in Yemen to the economical level of students who sell water and newspapers after schools, which lack the most important equipments such as books, chairs and desks. The poor quality of education in Yemen leads one to argue that those students in this study with adequate schooling (40.4%, 23 out of 43) are in fact not different from students with limited schooling (79.1%, 34 out of 43). So more than half of the sample came from Yemen, which may explain why there is no significance between the two groups.

Third, the median of the number of years of schooling in L1 that was used in this study to divide the sample into two groups: one with adequate schooling and another with limited schooling is 30 months. Students with 30 months and above were considered as having adequate schooling while below 30 months were considered as having limited schooling. This median was

decided based on this sample and perhaps another sample may have different medians. Therefore, this median as a criterion for dividing the sample into two groups, one with adequate schooling and another with limited schooling is somewhat arbitrary in nature. Perhaps in reality, under 30 months of schooling is not limited schooling but maybe adequate schooling. If that is the case, it is no surprise that there is no difference between adequate schooling group and limited schooling group.

Fourth, Given that Walsh-Sarneckl and Tanner (2010) reported that the achievement gap among minorities and other students narrowed in the MEAP exam, this investigator conjectures the gap between adequate schooling groups and limited schooling group in her sample was also narrowed. According to these newspapers reporters, the best sign for this improvement is in the math scores, which were progressed among all grades and demographics including students with limited proficiency in English. The spokeswoman for the Michigan Department of Education, Jan Ellis, justified the substantial progress in the MEAP math and reading achievement is due to clearer grade-level expectations (Walsh-Sarneckl & Tanner, 2010). So, probably it is these grade-level expectations that may have resulted in ameliorating the difference between mainstream students and others. This investigator therefore conjectures that these same grade-level expectations perhaps also ameliorated the difference between Arabic-speaking students with adequate schooling and limited schooling in Arabic. This might be the reason why there was no significant relationship between formal education in Arabic and English language proficiency and academic achievement.

Fifth, the discontinuity of schooling that many students experience as reported by teachers of one of the surveyed schools with a high concentration of Yemini students may have led to the achievement level observed in this study. Specifically, it is possible that some students were

included in the adequate schooling group despite not having adequate schooling in Yemen because they frequently interrupted their Yemenis education in Arabic language by visiting USA by time to time. Therefore, such kind of interrupted Yemenis schooling can impact those students who were categorized as having adequate schooling; while in reality they were having limited schooling in Arabic language in Yemen.

Discussion of Hypothesis 3

The third research hypothesis stated that there is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and English language proficiency as measured by the English Language Proficiency Assessment (ELPA). The null hypothesis was retained as the analysis of the data shows that there was no significant relationship found between attitudes towards L1 and L2 and proficiency in L2. Therefore, the above research hypothesis was not supported.

The reason behind this finding might be related to the way the sample was divided. For the purpose of analyzing the data regarding this hypothesis, the researcher found that it is necessary to divide the sample into four groups as follows: G1: Students with positive attitudes towards L1; G2: Students with negative attitudes towards L1; G3: Students with positive attitudes towards L2; and G4: Students with negative attitudes towards L2. Such division of the sample ended up the groups with few numbers of participants for the most part (See Table 19 & 20). In balanced group sizes, the statistical tests are more reliable or robust to violation of underlying assumptions such as normality and constant variance. A "robust" statistical test indicates the validity of the computed probability in order to make decisions on hypothesis testing even though the assumptions upon which it is based are violated (Ito, 1980). The fixed-

effects ANOVA F-test is said to be robust with respect to heterogeneous variances when group sizes are equal (Glass et al., 1972).

Additionally, this finding is not similar to the findings of other researcher (Bialystok & Frohlich, 1978; Gardner et al., 1999; Masgoret & Gardner, 2003; Nguyen et al., 2001; Randhawa & Korpan, 1973; Ushida, 2005; Yager, 1998) who investigated the effect of attitudes towards L2 in the proficiency in L2 and did find a significant relationship between the two. One reason behind this dissimilarity in the findings of this study and other studies might be because of the differences in the method of measuring second language proficiency.

For example, Randhawa and Kapan (1973) measured achievement in second language by asking teachers to make personal judgments and give grade A, B, C, D or F without any specific criteria . ELPA on the other hand, is a measure which has s has individual scores for reading, writing, listening and speaking skills and total holistic score for many items. Hence, ELPA is likely to be more accurate and objective comparing to Randhawa and Kapan's measure. Also, Yager (1998) used an Oral Proficiency Interview (OPI), which is also different than ELPA. He used OPI as the sole measure of oral language proficiency. OPI may not be a sufficiently sensitive measure of changes in proficiency over of time. In the same manner, Gardner et al. (1999) and Nguyen et al. (2001) relied on self-reporting measure of their participants' proficiency in second language. Self-reporting measure is likely to be subjective as students are more likely to present themselves in the most favorable light. Accordingly, different measures may lead to different results. When measurements or methods are different, it affects objectivity, accuracy and consistency in findings.

Only two studies (Ushida, 2005; Bialystok and Frohlich, 1978) used measures of second language proficiency that is similar to ELPA such as academic tests and grades. However,

Ushida (2005) has a small sample size (30 participants) which can limit the generalizability and representativeness of the findings of his study. As for Bialystok and Frohlich (1978), they measured English language proficiency by examining the oral and writing skills. While in this study, the measure of second language proficiency relied on a holistic score of ELPA. Had this investigator have access to the individual scores of ELPA, she may have found positive relationship between attitude towards L1 and L2 and English language proficiency. Then this investigator's finding would have been similar to Bialystok and Frohlich's findings which was that there was a significant effect of attitudes towards L2 on the writing task.

Discussion of Hypothesis 4

The fourth research hypothesis stated that there is a relationship between Arabic-speaking middle school students' attitudes towards L1 (Arabic language) and L2 (English) as measured by an adapted questionnaire, and mathematics academic achievement in L2 (English) as measured by the Michigan Education Assessment Program (MEAP). The null hypothesis was retained as the analysis of the data shows that there was no significant relationship found between attitudes towards L1 and L2 and academic achievement in math. Therefore, the above research hypothesis was not supported.

One reason behind this result could be the group sizes that were used for analyzing the data related to this hypothesis. The sample was divided into two groups: G1: Students with positive attitudes towards L1 and L2; G2: students with negative attitudes towards L1 and L2. Both groups had small sample size (See Table 23) and both groups had small effect sizes which are enough to cause insignificance in relation between the variables. In general, the larger the sample size, the smaller sampling error tends to be although one can never be sure what will happen in a particular experiment. The "effect size" indicates the size of the effect being sought

in the population. The larger it is, the easier it will be to significantly detect. By definition, statistical power is a function of sample size and effect size (Cohen, 1989).

Additionally, the finding related to this hypothesis is dissimilar to the findings of other studies. Both Lee (2002) and Sanchez (2006) investigated the relationship between attitudes towards L1 and L2 and academic achievement. As for Lee, he found a significant relationship between students' language and cultural identity and their academic achievement. However, Lee relied on only GPA as measure of academic achievement. As noted earlier, GPA is a holistic measure of overall academic achievement and it integrates the scores of a number of courses together. So, the high GPA the participants got might be due to confounding variables such as achievement in other scores of different subjects. When attitude towards L1 are then correlated with GPA, the relationship is less clear. In this study, the investigator is using only the achievement in math as a measure of academic achievement and this measure cannot suitably compare to the whole GPA score.

Also, for measuring attitudes towards L1, Lee relied on 10 closed-ended questions questionnaire. In this questionnaire, there was only one question on attitudes towards language while the remaining nine questions were concerned with attitudes towards the culture. Ideally, half of the questions should address attitudes towards language, while the other half should be allotted to attitudes towards culture, in order to have a reliable measure of attitudes. Thus, it might not be the attitudes towards L1 that had the effect on the academic achievement in Lee's study but rather the attitude toward L1 culture. As for Sanchez (2006), she did find a significant correlation between attitudes towards L2 and academic achievement. However, it is a very weak correlation.

Limitations of the Study

The first limitation of this study is that the measure of formal education in L1 is the number of years of schooling that participants had in their home countries. This measure may not be the most effective measure to determine the effect of formal schooling in L1. First, the numbers of years of schooling does not guarantee that students received a high quality education. Given the variability of schooling experience and the quality of education, it may not be sufficient to use the number of years of schooling as the only criterion of formal education. This investigator did not gather any information other than the number of years of schooling in home countries. This study needed to examine and assess also the kind of schooling that students received in their home countries. There are two options that can perhaps address the above stated limitation. The first options is to collect some information about the quality of education that participants received in their home countries such as full-time versus interrupted education, and/or private versus public education. The second option is to assess participants' academic knowledge in Arabic through a test constructed by this investigator. This assessment would then be an accurate measure for the effect of formal education in L1.

The second limitation of this study is that this investigator only received the final performance score on ELPA and not individual sub-scores for four different skills: reading, writing, listening and speaking. Had this investigator have accessibility to these individual scores, she could have then performed further statistical analysis. Through these additional statistical analyses, the investigator might have found a relationship between formal education in L1 or students attitudes towards L1 and L2 and their achievement in one of the individual skills.

Directions for Future Research

Given that this study did not find a significant relationship between formal education in L1 and attitudes towards L1 as independent variables and English language proficiency and academic achievement as Dependent variables, this investigator proposes the following research possibilities in the future which address the above stated limitations. Upon returning to home country, Kuwait; this investigator has a modest plan to continue investigating the same variables with few changes to accommodate differences in the educational system of Kuwait. The future research plan will target two groups of students: Kuwaiti private high school graduates and Kuwaiti public high school graduates who both join foreign universities in Kuwait, such as American or Australian universities. The reason behind having two groups from two different kinds of schools is the language of instruction that is used in each kind of school. The main language of instruction in private schools is English, while the language of instruction in public schools is Arabic. In addition, the populations of private schools are usually foreigners from English-speaking countries while the majority of population of public schools is Arabic speaking students from Kuwait and other Arabic countries.

There are two purposes for this future research. The first purpose is to examine the effect formal education in Arabic that public school students received in their academic achievement and English language proficiency comparing with their counterparts who graduate for private high schools. The second purpose is to investigate the impact of students' attitudes towards L1 and L2 in their academic achievement and English language proficiency. Through this future research, this investigator will thus attempt to have a clearer picture of the role of the formal education in Arabic, which is the variable investigated in this present study.

The participants in this future research will be divided to two groups: public school Arabic speaking students and private school English speaking students. Thus, the investigator will replace adequate versus limited schooling as independent variable with a different focus where all students will have adequate schooling. The comparison then will be between the language instruction that they received in high school and its impact on their college performance. Thus, this proposed future research would be an extension of the present study.

In USA, this investigator has had difficulty in accessing individual sub-scores of ELPA. This will not be the case in Kuwait. This investigator will have access to the universities' admission tests which have sub-scores and grand total scores of students' performance in: a) English language proficiency and b) academic achievement.

Hence, this future research needs to be done to answer the following research questions:-

- 1- Is there a difference between Arabic speaking students who received their instruction in their own language (in public high school) and English speaking students receiving their instruction in their own language (in private high school) in terms of:
 - A- English language proficiency as measured by the foreign universities' admission tests?
 - B- Academic achievement as measured by the foreign universities' admission tests?
- 2- Is there a relationship between attitudes towards L1 and L2 of all Arabic and English speaking students as measured by a questionnaire developed for this study and:
 - A- English language proficiency as measured by the foreign universities' admission tests?
 - B- Academic achievement as measured by the foreign universities' admission tests?

Specifically, this proposed future research will have the following research hypotheses:

- 1- There is no a difference between Arabic speaking students who received their instruction in their own language (in public high school) and English speaking students receiving their instruction in their language (in private high school) in terms of:
 - A- English language proficiency as measured by the foreign universities' admission tests.
 - B- Academic achievement as measured by the foreign universities' admission tests.
- 2- There is a relationship between attitudes towards L1 and L2 of all Arabic and English speaking students as measured by a questionnaire developed for this study and:
 - A- English language proficiency as measured by the foreign universities' admission tests.
 - B- Academic achievement as measured by the foreign universities' admission tests.

Conclusion

Despite the fact that this investigation did not support any of the hypotheses, this investigator would like to conclude that she still has learned a wide variety of academic as well as interpersonal skill sets. Examples of academic skills that this investigator learned are: study skills, library research skills, empirical research skills, logical and analytical skills and writing skills. As for interpersonal skills, this investigator has been learned to work closely and have continuous dialogue with the chair, committee members, research consultants, librarian, principals, teachers, students and parents. Most importantly, this investigator learned that no matter what stresses and obstacles she faces in the research path, it is necessary to make this

research experience a growingly pleasant experience. All these skills can be of great support to this investigator in her future career.

In conclusion, regarding non significant research findings, this investigator would like reexamine her hypotheses because there is sufficient empirical evidence as reviewed in her research literature regarding the relationships between the variables she examined. However, in the future research that was proposed earlier, this investigator will conduct her research with different focus: a) more suitable measures b) on different population and c) slightly different research questions generated from this study.

Appendix A: Parent Demographic Survey

Parent Demographic Survey

1- Parent's Age – Please select one category for each parent.

Mother	Age	Father
	25 years or younger	
	26 to 35 years	
	36 to 45 years	
	46 to 55 years	
	Over 55 years	

2- How many children under 18 years of age are living in your home? _____

3- Parent's Education – Please select one category for each parent.

Mother	Highest Level of Education	Father
	Less than high school	
	High school graduation/GED	
	Some College	
	Associate's Degree/Technical School	
	Bachelor's Degree	
	Graduate Degree	
	Other	

4- What is your occupation type? (Do not put where you work, but what you do. Ex. Teacher, doctor, truck driver, engineer, etc.)

Father _____

Mother _____

5- Where were you born? (Please specify the country of birth.)

Father _____

Mother _____

Your Surveyed child _____

6- Indicate the number of years that you have lived in the United States.

Father _____ years

Mother _____ years

Your surveyed child _____ years

7- Did your surveyed child attend school in a country other than the United States?

Yes No

8- If yes, how many years did your surveyed child attend school in that country?

_____ years

9- In what country did your surveyed child attend school?

10- Is your surveyed child participating in bilingual education classes in his/her current school?

Yes No

11- Does your surveyed child receive any special education services other than bilingual education?

Yes No

12- Please rate your fluency with English:

Father

- | | |
|---|---|
| <input type="checkbox"/> Fluent | <input type="checkbox"/> Somewhat fluent |
| <input type="checkbox"/> Not fluent, but understand English | <input type="checkbox"/> Do not speak English |

Mother

- | | |
|---|---|
| <input type="checkbox"/> Fluent | <input type="checkbox"/> Somewhat fluent |
| <input type="checkbox"/> Not fluent, but understand English | <input type="checkbox"/> Do not speak English |

Appendix B: The Translated Version of the Parent Demographic Survey

البحث السكاني

1. أعمار الأبوين- يرجى إختيار إحدى الفئات التالية لكل من الأبوين.

الأب	العمر	الأم
	25 سنة أو أقل	
	26 سنة إلى 35 سنة	
	36 سنة إلى 45 سنة	
	46 سنة إلى 55 سنة	
	أكثر من 55 سنة	

2. كم من الأولاد دون سن 18 سنة يقطنون في البيت؟ _____

3. المستوى التعليمي للأبوين- يرجى إختيار فئة واحدة لكل من الأبوين على حدة.

الأب	آخر مستوى تعليمي تم إكماله	الأم
	دون الثانوية	
	خريج المرحلة الثانوية أو ما يعادلها	
	إحدى الكليات	
	درجة الزمالة/ المدارس التطبيقية	
	الإجازة الجامعية	
	إجازة في الدراسات العليا	
	أخرى	

4. ما هي نوع المهنة التي تزاولها؟ (يرجى ذكر نوع العمل لا مقره. مثال: معلم، طبيب، سائق شاحنة، مهندس، إلخ.)

_____ الأب

_____ الأم

5. ما هو مكان الميلاد؟ (يرجى ذكر الدولة.)

_____ الأب

الأم

إبنكم/إبنتك المعني في هذا البحث

6. أذكر عدد السنوات التي قضيتها في الولايات المتحدة.

الأب

الأم

إبنكم/إبنتك المعني في هذا البحث

7. هل سبق أن إلتحق إبنكم/إبنتك المعني في هذا البحث بمدرسة في إحدى الدول غير الولايات المتحدة؟

لا نعم

8. إذا كانت الإجابة بنعم، كم سنة قضى إبنكم/إبنتك في المدرسة بتلك الدولة؟

سنة/سنوات _____

9. ماهي الدولة التي إلتحق فيها إبنكم المعني بهذا البحث بتلك المدرسة؟

10. هل يحضر إبنكم/إبنتك المعني بهذا البحث فصول تعليمية ثنائية اللغة بمدرسته الحالية؟

لا نعم

11. هل يتلقى إبنكم/إبنتك المعني في هذا البحث أي نوع من خدمات التعليم الخاص غير التعليم ثنائي اللغة؟

لا نعم

12. يرجى تقييم فصاحتك باللغة الإنجليزية.

الأب

فصيح بعض الشيء لا أتحدث الإنجليزية فصيح غير فصيح، ولكن أفهم الإنجليزية

الأم

فصيح بعض الشيء لا أتحدث الإنجليزية فصيح غير فصيح، ولكن أفهم الإنجليزية

Appendix C: Matrix Examining Tools of Measurements

Name of sources and authors	Measurement scale	Reason for using some scales and not others.
<p>Ushida (2005). The role of students' attitudes and motivation in second language learning in online language course.</p> <p>Bialystok & Frohlich (1978). Variables of classroom achievement in second language learning.</p> <p>Masgoret & Gardner (2003). Home background characteristics and second language learning.</p> <p>Gardner et al. (1999). Attitudes, motivation, and second language learning: A meta-analysis of studies conducted by Gardner and associates.</p>	<p>These studies used Attitude/Motivation Test Battery (AMTB) to measure attitudes and other motivational variables. It has 11 sub-scales to address five categories:</p> <p>1-Integrativenss. 2- Attitudes toward learning situation. 3-motivation (motivation intensity-desire to learn-attitudes towards learning). 4-instrumental orientation. 5-language anxiety.</p>	<p>Reasons to use AMTB?</p> <ol style="list-style-type: none"> 1- Scholarly and well-established measure of attitudes and other related variables. 2- Used in many studies which were not reported in the review literature of this study as they are not closely related to the variables. 3- It WAS established in 1985. However, its constructors keep updating it. 4- Validity and Reliability reported. 5- Gardner (1985b) mentioned that research in other different countries used this scale such as Finland, Belize, and Philippines. 6- Capable of measuring attitudes towards languages in general and attitudes towards learning the languages in specific
<p>Baker (1992). Attitudes and language.</p>	<p>Baker constructed an instrument to measure students' attitudes towards minority language (Welsh) and attitudes towards bilingualism (Welsh and English). The instrument is divided into six parts.</p> <p>1-Part one 2-Part two 3-Part three 4-Part four 5-Part five 6-Part six</p>	<p>Reason to use Baker's instrument:</p> <ol style="list-style-type: none"> 1- Baker intended to measure general attitudes towards the minority language and its learning which is related to my research interest. 2- Reliability and validity reported 3- The scale asks some important questions regarding the language background of students. A concept that can help this investigator in understanding data latter. 4- Capable of measuring attitudes towards languages in general and towards leaning the languages in specific.

<p>Randwa & Korpan (1977). Assessment of some significant affective variables and the prediction of achievement in French.</p>	<p>Randhawa & Korpan constructed their own instrument which they called Attitude toward learning French as a second language (ALFS). Two parts of the instrument adapted from Gardner's scale while the attitude part constructed by the author.</p>	<p>Reasons for not choosing it: Although Reliability information and Validity are available, It includes only 26 items of which not all of them are devoted to general attitudes and attitudes toward learning French.</p>
<p>Lee (2001). The significance of language and cultural education on secondary achievement: A survey of Chinese-American and Korean American students.</p>	<p>A Scale constructed by the investigator to measure students' attitudes towards different aspects of their heritage and not only their native language.</p>	<p>Reasons for not adapting it: 1- Very short 2- Questions devoted to attitudes towards native language are few. 3- Validity and Reliability are not reported.</p>
<p>Yager (1998). Learning Spanish in Mexico: The effect of informal contact and student attitudes on language gains.</p>	<p>A scale constructed by the investigator to measure five areas: 1-importance of achieving native-like L2 Spanish. 2-student enjoyment of Spanish pronunciation. 3-student enjoyment of Spanish grammar. 4-Instrumental motivation. 5-integrative motivation.</p>	<p>Reasons for not adapting it: 1-Validity and Reliability are not reported. 2-The format of some questions maybe hard or difficult to be answered (questions that require some writing). 3-It includes only 19 items.</p>

Appendix D: Attitude/Motivation Test Battery

Appendix A.1

The Attitude/Motivation Test Battery

INSTRUCTIONS

The following instructions precede the Likert form items. The items are presented in a random order, and for school children each item is typically followed by the scale as indicated in the example below. Other versions used for university level students use the format as suggested by Adorno, Frenkel-Brunswick, Levinson and Sanford (1950).

Following are a number of statements with which some people agree and others disagree. There are no right or wrong answers since many people have different opinions. We would like you to indicate your opinion about each statement by circling the alternative below it which best indicates the extent to which you disagree or agree with that statement.

Following is a sample item. Circle the alternative below the statement which best indicates your feeling.

1. Canadian hockey players are better than Russian hockey players.

Strongly	Moderately	Slightly	Neutral	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree		Agree	Agree	Agree

In answering this question, you should have circled one of the above alternatives. Some people would circle Strongly Disagree, others would circle Strongly Agree, and still others would circle one of the alternatives in between. Which one you circled would indicate your own feelings based on everything you know and have heard. Note, there is no right or wrong answer. All that is important is that you indicate your personal feeling.

Please give your immediate reactions to each of the following items. Don't waste time thinking about each statement. Give your immediate feeling after reading each statement. On the other hand, please do not be careless, as it is important that we obtain your true feelings.

*

Items for the Likert Scales

Attitudes toward French Canadians

1. French Canadians are a very sociable, warm-hearted and creative people.
 2. I would like to know more French Canadians.
 3. French Canadians add a distinctive flavour to the Canadian culture.
 4. English Canadians should make a greater effort to learn the French language.
 5. The more I get to know the French Canadians, the more I want to be fluent in their language.
 6. Some of our best citizens are of French Canadian descent.
 7. The French-Canadian heritage is an important part of our Canadian identity.
 8. If Canada should lose the French culture of Quebec, it would indeed be a great loss.
 9. French Canadians have preserved much of the beauty of the old Canadian folkways.
-

10. Most French Canadians are so friendly and easy to get along with that Canada is fortunate to have them.

Interest in Foreign Languages

1. If I were visiting a foreign country I would like to be able to speak the language of the people.
2. Even though Canada is relatively far from countries speaking other languages, it is important for Canadians to learn foreign languages.
3. I wish I could speak another language perfectly.
4. I want to read the literature of a foreign language in the original language rather than a translation.
5. I often wish I could read newspapers and magazines in another language.
6. I would really like to learn a lot of foreign languages.
7. If I planned to stay in another country, I would make a great effort to learn the language even though I could get along in English.
8. I would study a foreign language in school even if it were not required.
9. I enjoy meeting and listening to people who speak other languages.
10. Studying a foreign language is an enjoyable experience.

Attitudes toward European French People

1. The European French are considerate of the feelings of others.
2. I have a favourable attitude towards the European French.
3. The more I learn about the European French, the more I like them.
4. The European French are trustworthy and dependable.
5. I have always admired the European French people.
6. The European French are very friendly and hospitable.
7. The European French are cheerful, agreeable and good humoured.
8. I would like to get to know the European French people better.
9. The European French are a very kind and generous people.
10. For the most part, the European French are sincere and honest.

Attitudes toward Learning French

Positively Worded Items

1. Learning French is really great.
2. I really enjoy learning French.
3. French is an important part of the school programme.
4. I plan to learn as much French as possible.
5. I love learning French.

Negatively Worded Items

1. I hate French.
2. I would rather spend my time on subjects other than French.
3. Learning French is a waste of time.
4. I think that learning French is dull.
5. When I leave school, I shall give up the study of French entirely because I am not interested in it.

Integrative Orientation

1. Studying French can be important to me because it will allow me to be more at ease with fellow Canadians who speak French.
2. Studying French can be important for me because it will allow me to meet and converse with more and varied people.
3. Studying French can be important for me because it will enable me to better understand and appreciate French Canadian art and literature.
4. Studying French can be important for me because I will be able to participate more freely in the activities of other cultural groups.

Instrumental Orientation

1. Studying French can be important for me only because I'll need it for my future career.
2. Studying French can be important for me because it will make me a more knowledgeable person.
3. Studying French can be important to me because I think it will someday be useful in getting a good job.
4. Studying French can be important for me because other people will respect me more if I have a knowledge of a foreign language.

French Class Anxiety

1. It embarrasses me to volunteer answers in our French class.
2. I never feel quite sure of myself when I am speaking in our French class.
3. I always feel that the other students speak French better than I do.
4. I get nervous and confused when I am speaking in my French class.
5. I am afraid the other students will laugh at me when I speak French.

Parental Encouragement

1. My parents try to help me with my French.
2. My parents feel that because we live in Canada, I should learn French.
3. My parents feel that I should continue studying French all through school.
4. My parents think I should devote more time to my French studies.
5. My parents really encourage me to study French.
6. My parents show considerable interest in anything to do with my French courses.
7. My parents encourage me to practise my French as much as possible.
8. My parents have stressed the importance French will have for me when I leave school.
9. My parents feel that I should really try to learn French.
10. My parents urge me to seek help from my teacher if I am having problems with my French.

Appendix A.2

The following instructions precede the items for the scales, Motivational Intensity, Desire to Learn French, and Orientation Index. The scoring key is not shown on the questionnaire when administered, and the items are presented in a random order.

Please answer the following items by circling the letter of the alternative which appears most applicable to you. We would urge you to be as accurate as possible since the success of this investigation depends upon it.

*

Items for the Scales Using the Multiple Choice Format

Motivational Intensity

Scoring

Key

I actively think about what I have learned in my French class:

- 3 a) very frequently.
- 1 b) hardly ever.
- 2 c) once in awhile.

If French were not taught in school, I would:

- 2 a) pick up French in everyday situations (i.e., read French books and newspapers, try to speak it whenever possible, etc.).
- 1 b) not bother learning French at all.
- 3 c) try to obtain lessons in French somewhere else.

When I have a problem understanding something we are learning in French class, I:

- 3 a) immediately ask the teacher for help.
- 2 b) only seek help just before the exam.
- 1 c) just forget about it.

When it comes to French homework, I:

- 2 a) put some effort into it, but not as much as I could.
- 3 b) work very carefully, making sure I understand everything.
- 1 c) just skim over it.

Considering how I study French, I can honestly say that I:

- 2 a) do just enough work to get along.
- 1 b) will pass on the basis of sheer luck or intelligence because I do very little work.
- 3 c) really try to learn French.

If my teacher wanted someone to do an extra French assignment, I would:

- 1 a) definitely not volunteer.
- 3 b) definitely volunteer.
- 2 c) only do it if the teacher asked me directly.

After I get my French assignment back, I:

- 3 a) always rewrite them, correcting my mistakes.
- 1 b) just throw them in my desk and forget them.
- 2 c) look them over, but don't bother correcting mistakes.

When I am in French class, I:

- 3 a) volunteer answers as much as possible.
- 2 b) answer only the easier questions.
- 1 c) never say anything.

If there were a local French T.V. station, I would:

- 1 a) never watch it.
- 2 b) turn it on occasionally.
- 3 c) try to watch it often.

When I hear a French song on the radio, I:

- 2 a) listen to the music, paying attention only to the easy words.
- 3 b) listen carefully and try to understand all the words.
- 1 c) change the station.

Desire to Learn French

During French class, I would like:

- 2 a) to have a combination of French and English spoken.
- 1 b) to have as much English as possible spoken.
- 3 c) to have only French spoken.

If I had the opportunity to speak French outside of school, I would:

- 1 a) never speak it.
- 3 b) speak French most of the time, using English only if really necessary.
- 2 c) speak it occasionally, using English whenever possible.

Compared to my other courses, I like French:

- 3 a) the most.
- 2 b) the same as all the others.
- 1 c) least of all.

If there were a French Club in my school, I would:

- 2 a) attend meetings once in awhile.
- 3 b) be most interested in joining.
- 1 c) definitely not join.

If it were up to me whether or not to take French, I:

- 3 a) would definitely take it.
- 1 b) would drop it.
- 2 c) don't know whether I would take it or not.

I find studying French:

- 1 a) not interesting at all.

- 2 b) no more interesting than most subjects.
- 3 c) very interesting.

If the opportunity arose and I knew enough French, I would watch French T.V. programmes:

- 2 a) sometimes.
- 3 b) as often as possible.
- 1 c) never

If I had the opportunity to see a French play, I would:

- 2 a) go only if I have nothing else to do.
- 3 b) definitely go.
- 1 c) not go.

If there were French-speaking families in my neighbourhood, I would:

- 1 a) never speak French to them.
- 2 b) speak French with them sometimes.
- 3 c) speak French with them as much as possible.

If I had the opportunity and knew enough French, I would read French magazines and newspapers:

- 3 a) as often as I could.
- 1 b) never.
- 2 c) not very often.

Orientation Index

I am studying French because:

- 1 a) I think it will some day be useful in getting a good job.
- 2 b) I think it will help me to better understand French people and way of life.
- 2 c) It will allow me to meet and converse with more and varied people.
- 1 d) A knowledge of two languages will make me a better educated person.

Appendix A.3
Semantic Differential Assessments of My French Teacher and My French Course
INSTRUCTIONS

The purpose of this part of the questionnaire is to determine your ideas and impressions about your French Course and your French Teacher. We call these things concepts. In answering this section, you will be asked to rate these concepts on a number of scales. On the following pages, there is a concept given at the top of the page, and below that a group of scales. You are to rate each concept on each of the scales in order. Following is how you are to use the scales.

If the word at either end of the scale very strongly describes your ideas and impressions about the concept at the top of the page, you would place your checkmark as shown below:

friendly X : _____ : _____ : _____ : _____ : _____ : _____ unfriendly
friendly _____ : _____ : _____ : _____ : _____ : _____ : X unfriendly

If the word at either end of the scale describes somewhat your ideas and impressions about the concept (but not strongly so), you would place your check-mark as follows:

dangerous _____ : X : _____ : _____ : _____ : _____ : _____ safe
dangerous _____ : _____ : _____ : _____ : _____ : X : _____ safe

If the word at either end of the scale only slightly describes your ideas and impressions about the concept, you would place your check-mark as follows:

fast _____ : _____ : X : _____ : _____ : _____ : _____ slow
fast _____ : _____ : _____ : _____ : X : _____ : _____ slow

If the word at either end of the scale doesn't seem to be at all related to your ideas and impressions about the concept, you would place your check-mark as follows:

useful _____ : _____ : _____ : X : _____ : _____ : _____ useless

If you rated the concept snake, your ratings may have been like the following:

SNAKE

friendly _____ : _____ : _____ : _____ : X : _____ : _____ unfriendly
dangerous X : _____ : _____ : _____ : _____ : _____ : _____ safe
fast _____ : _____ : _____ : _____ : X : _____ : _____ slow
useful _____ : _____ : _____ : X : _____ : _____ : _____ useless

In this example, snake is seen as somewhat unfriendly, extremely dangerous, slightly slow, and neither useful nor useless. There are no right or wrong answers. We want you to indicate your own ideas and impressions. If you have any questions, please ask them now. In answering this part of the questionnaire, work quickly and don't stop to think about each scale. It is your immediate impressions in which we are interested.

Appendix E: Matrix for Selecting Items from AMTB

Definitely yes: I will adapt these items	Undecided: maybe I will adapt these items	No: I will not adapt these items
<p><i>Attitudes towards learning English: Positive worded items.</i>(ranked through Likert scale from strongly agree to Strongly disagree)</p> <p>Learning French is really great I really enjoy learning French I plan to learn as much French as possible I love learning French</p> <p><i>Attitudes towards Learning English. Negative worded items</i> I hate French Learning French is a waste of time. I think that learning French is dull</p> <p><i>Motivational Intensity</i></p> <p>When I hear a French song on the radio, I: a-listen to the music paying attention only to the easy words b- Listen carefully and try to understand all the words. c-change the station</p> <p><i>Desire to learn English</i> If I had the opportunity to speak French, outside of school, I would: a- Never speak it b- Speak French most of the time c- Speak French occasionally</p> <p>If the opportunities arose and I knew enough</p>	<p><i>Attitudes towards learning English: Positive worded items.</i></p> <p>English is an important part of the school programme.</p> <p><i>Attitudes towards Learning English. Negative worded items</i> I would rather spend my times on subjects other than English. When I leave school, I shall give up the study of French entirely because I am not interested in it.</p> <p><i>Motivational Intensity</i> I actively think about what I have learned in my French class: a-very frequently b-hardly ever C-once in awhile</p> <p>If French were not taught in school, I would: a-pick up French in everyday situations. b-not bother learning French at all. c-try to obtain lessons in French.</p> <p>When it comes to French homework, I: a-Put some effort into it, but not as much as I could b-work very carefully, making sure..... c-just skim over it.</p> <p>When I have a problem understanding something we are learning in French class, I: a-immediately ask the teacher for help b-only seek help just before the exam c-just forget about it.</p>	<ul style="list-style-type: none"> • Attitudes towards French Canadians • Interest in foreign Languages • Attitudes toward European French people • Integrative orientation • Instrumental orientation • French class Anxiety • Parental Encouragement • Orientation index • French teacher (four subscales) • French course (four subscales) <p>These items are not related to the proposed study.</p> <p>If there were a local French T.V. station, I would: a-never watch it b-turn it occasionally c-try to watch it often</p> <p><i>Desire to learn English</i> *During French class, I would like: a-to have a combination of French and English spoken b-to have as much English as possible spoken C-to have only French spoken</p> <p>These questions are not applicable to the US context and English status.</p>

<p>French, I would watch French T.V. programmes a-sometimes b-as often as possible c-never</p> <p>If I had the opportunity to see an French play, I would: a-go only if I have nothing else to do b-definitely go c-Not go</p> <p>If there were French-speaking families in my neighborhood, I would: a-never speak French to them b- speaking French with them sometimes c-speak French with them as much as possible</p> <p>If I had the opportunity and knew enough French, I would read French magazines and newspapers a-as often as I could b-never c-not very often</p> <p>These questions can be used to measure both attitudes towards Arabic (L1) as well as English (L2).</p>	<p>Considering how I study French, I can honestly say that I: a-do just enough work to get along b-will pass on the basis of sheer luck or intelligence because I do very little work c-really try to learn French</p> <p>If my teacher wanted someone to do an extra French Assignment, I would: a-definitely not volunteer b-definitely volunteer c-only do it if the teacher asked me directly</p> <p>After I get my French assignments back, I: a-always rewrite them, correcting my mistakes b-just throw them in my desk and forget them c-look them over, but do not bother correcting mistakes.</p> <p>when I am in French class, I: a-volunteer answers as much as possible b-answer only the easier questions c-never say anything.</p> <p><i>Desire to learn English</i></p> <p>I find studying French: a- not interesting at all. b-no more interesting than most subjects C-very interesting.</p> <p>Some questions ask about attitudes in relation to classroom contexts. Such questions cannot be replicated to measure attitudes towards L1. These items eventually moved to the next section.</p>	
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Appendix F: Baker's Scale

Appendix 1: The Research Instruments: English and Welsh Versions

PART ONE

Listed below are some of the things people of your age do when not in school. Please answer each one in terms of whether you do these

VERY OFTEN
FAIRLY OFTEN
SOMETIMES
RARELY
NEVER

(tick / your chosen answer)

1. Go to a Youth Club
2. Go to a Church/Chapel
3. Play Sport
4. Watch T.V./Videos
5. Read Newspapers
6. Read Books out of school
7. Read magazines/comics
8. Go to Discos
9. Go to Yr Urdd
10. Part-time Work
11. Play Records/Cassettes
12. Visit Relatives
13. A Hobby
14. Go to Eisteddfodau
15. Spend time with Boys of my age
16. Spend time with Girls of my age
17. Shopping
18. Walking
19. Go to a Library
20. Do nothing very much

VERY OFTEN (1)	FAIRLY OFTEN (2)	SOME-TIMES (3)	RARELY (4)	NEVER (5)

APPENDIX 1

PART TWO

Here are some questions about the language in which you talk to different people, and the language in which certain people speak to you. Please answer as honestly as possible. There are no right or wrong answers. Leave an empty space if a question does not fit your position.

In which language do YOU speak to the following people? Choose one of these answers:

Always in Welsh
In Welsh more often than English
In Welsh and English about equally
In English more often than Welsh
Always in English

1. Father
2. Mother
3. Brothers/Sisters
4. Friends in the Classroom
5. Friends outside School
6. Teachers
7. Friends in the Playground
8. Neighbours (near my house)

ALWAYS IN WELSH	IN WELSH MORE OFTEN THAN ENGLISH	IN WELSH AND ENGLISH EQUALLY	IN ENGLISH MORE OFTEN THAN WELSH	ALWAYS IN ENGLISH

In which language do the following people speak to you?

1. Father
2. Mother
3. Brother/Sisters
4. Friends in the Classroom
5. Friends outside School
6. Teachers
7. Friends in the Playground
8. Neighbours (near my house)

ALWAYS IN WELSH	IN WELSH MORE OFTEN THAN ENGLISH	IN WELSH AND ENGLISH EQUALLY	IN ENGLISH MORE OFTEN THAN WELSH	ALWAYS IN ENGLISH

Which language do YOU use with the following?

1. Watching T.V./Videos
2. Church/Chapel
3. Newspapers/Comics/Magazines
4. Records/Cassettes
5. Radio

ALWAYS IN WELSH	IN WELSH MORE OFTEN THAN ENGLISH	IN WELSH AND ENGLISH EQUALLY	IN ENGLISH MORE OFTEN THAN WELSH	ALWAYS IN ENGLISH

Die Value status

ATTITUDES AND LANGUAGE

PART THREE

How important or unimportant do you think the Welsh language is for people to do the following? There are no right or wrong answers.

FOR PEOPLE TO:

- ✓ 1. To make friends
- ✓ 2. To earn plenty of money
- ✓ 3. Read
- ✓ 4. Write
- ✓ 5. Watch T.V./Videos
- ✓ 6. Get a job
- ✓ 7. Become cleverer
- ✓ 8. Be liked
- ✓ 9. Live in Wales
- ✓ 10. Go to Church/Chapel
- ✓ 11. Sing (e.g. with others)
- ✓ 12. Play sport
- ✓ 13. Bring up children
- ✓ 14. Go shopping
- ✓ 15. Make phone calls
- ✓ 16. Pass exams
- ✓ 17. Be accepted in the community
- ✓ 18. Talk to friends in school
- ✓ 19. Talk to teachers in school
- ✓ 20. Talk to people out of school

IMPORTANT (i)	A LITTLE IMPORTANT (ii)	A LITTLE UNIMPORTANT (iii)	UNIMPORTANT (iv)

Journal

PART FOUR

*integrating
108*

Here are some statements about the Welsh language. Please say whether you agree or disagree with these statements. There are no right or wrong answers. Please be as honest as possible. Answer with ONE of the following:

- SA = Strongly Agree (circle SA)
- A = Agree (circle A)
- NAND = Neither Agree Nor Disagree (circle NAND)
- D = Disagree (circle D)
- SD = Strongly Disagree (circle SD)

- ✓ 1. I like hearing Welsh spoken..... SA A NAND D SD
- ✓ 2. I prefer to watch T.V. in English than Welsh..... SA A NAND D SD
- ✓ 3. Welsh should be taught to all pupils in Wales..... SA A NAND D SD
- ✓ 4. It's a waste of time to keep the Welsh language alive..... SA A NAND D SD
- ✓ 5. I like speaking Welsh..... SA A NAND D SD
- ✓ 6. Welsh is a difficult language to learn..... SA A NAND D SD
- ✓ 7. There are more useful languages to learn than Welsh..... SA A NAND D SD
- ✓ 8. I'm likely to use Welsh as an adult..... SA A NAND D SD
- ✓ 9. Welsh is a language worth learning..... SA A NAND D SD
- ✓ 10. Welsh has no place in the modern world..... SA A NAND D SD
- ✓ 11. Welsh will disappear as everyone in Wales can speak English..... SA A NAND D SD
- ✓ 12. Welsh is essential to take part fully in Welsh life..... SA A NAND D SD
- ✓ 13. We need to preserve the Welsh language..... SA A NAND D SD
- ✓ 14. Children should not be made to learn Welsh..... SA A NAND D SD
- ✓ 15. I would like Welsh to take over from the English language in Wales..... SA A NAND D SD
- ✓ 16. It's hard to study Science in Welsh..... SA A NAND D SD
- ✓ 17. You are considered a lower class person if you speak Welsh..... SA A NAND D SD
- ✓ 18. I prefer to be taught in Welsh..... SA A NAND D SD
- ✓ 19. As an adult, I would like to marry a Welsh speaker..... SA A NAND D SD
- ✓ 20. If I have children, I would like them to be Welsh speaking..... SA A NAND D SD

Bilingual

ATTITUDES AND LANGUAGE

PART FIVE

Here are some statements about the English and Welsh language. Please say whether you agree or disagree with these statements. There are no right or wrong answers. Please be as honest as possible. Answer with ONE of the following:

SA = Strongly Agree (circle SA)
 A = Agree (circle A)
 NAND = Neither Agree Nor Disagree (circle NAND)
 D = Disagree (circle D)
 SD = Strongly Disagree (circle SD)

- ✓ 1. It is important to be able to speak English and Welsh.....SA A NAND D SD
- ✓ 2. To speak one language in Wales is all that is needed.....SA A NAND D SD
3. Knowing Welsh and English makes people cleverer.....SA A NAND D SD
4. Children get confused when learning English and Welsh.....SA A NAND D SD
- ✓ 5. Speaking both Welsh and English helps to get a job.....SA A NAND D SD
6. Being able to write in English and Welsh is important.....SA A NAND D SD
7. All schools in Wales should teach pupils to speak in Welsh and English.....SA A NAND D SD
8. Road signs should be in English and Welsh.....SA A NAND D SD
- ✓ 9. Speaking two languages is not difficult.....SA A NAND D SD
10. Knowing both Welsh and English gives people problems.SA A NAND D SD
- ✓ 11. I feel sorry for people who cannot speak both English and Welsh.....SA A NAND D SD
12. Children in Wales should learn to read in both Welsh and English.....SA A NAND D SD
- ✓ 13. People know more if they speak English and Welsh.....SA A NAND D SD
- ✓ 14. People who speak Welsh and English can have more friends than those who speak one language.....SA A NAND D SD
- ✓ 15. Speaking both English and Welsh is more for older than younger people.....SA A NAND D SD

APPENDIX 1

SA = Strongly Agree (circle SA)
 A = Agree (circle A)
 NAND = Neither Agree Nor Disagree (circle NAND)
 D = Disagree (circle D)
 SD = Strongly Disagree (circle SD)

- ✓ 16. Speaking both Welsh and English helps people get promotion in their job.....SA A NAND D SD
- ✓ 17. Young children learn to speak Welsh and English at the same time with ease.....SA A NAND D SD
- ✓ 18. Both English and Welsh should be important in Wales.....SA A NAND D SD
- ✓ 19. People can earn more money if they speak both Welsh and English.....SA A NAND D SD
20. I should not like English to take over from the Welsh language.....SA A NAND D SD
21. When I become an adult, I would like to be considered as a speaker of English and Welsh.....SA A NAND D SD
- ✓ 22. All people in Wales should speak Welsh and English.....SA A NAND D SD
- ✓ 23. If I have children, I would want them to speak both English and Welsh.....SA A NAND D SD
- ✓ 24. Both the Welsh and English languages can live together in Wales.....SA A NAND D SD
- ✓ 25. People only need to know one language.....SA A NAND D SD

PART SIX

✓ 1. AGE: years old

2. YEAR IN SCHOOL: 3rd Year
 4th. Year
 5th. Year

✓ 3. GENDER Male
 Female

*Wthas ddiol ydych chi
 wthio i'wraig ydych chi yn ysgol
 yn eiddo'ch ysgol yn eiddo'ch ysgol*

4. How well do YOU think YOU compare with other children of your age in your school.

(a) in MATHS

Near the top.....
 Better than average.....
 About average.....
 Below the average.....
 Near the bottom.....

✓ (b) in being able to speak WELSH (even if you no longer have Welsh language lessons)

Near the top.....
 Better than average.....
 About average.....
 Below the average.....
 Near the bottom.....

5. SURNAME..... CHRISTIAN NAME(S)

Appendix G: Matrix for Selecting Items from Baker's Scale

Definitely yes: I will adapt these items from Baker's scale.	Undecided. Maybe I will adapt these items	Definitely No: I will not adapt these items
<p>Part two: language back ground</p> <p>1- In which language do you speak to the following people?</p> <p>2- In which language do the following people speak to you?</p> <p>3- In which language do you do the following activities?</p> <p>(I think these two questions at the beginning of the proposed survey will help to understand the data latter).</p> <p>Part four: General attitudes. Using Likert scale</p> <p>1-I like hearing Welsh spoken</p> <p>5-I like speaking Welsh</p> <p>6-Welsh is difficult language to learn</p> <p>9-Welsh is a language worth learning</p> <p>18-I prefer to taught in Welsh</p> <p>19-As an adult, I would like to marry a welsh speaker.</p> <p>20-If I have children; I would like them to be Welsh speaking.</p> <p>2-I prefer to watch T.V. in Welsh than English</p> <p>13-We need to preserve the Welsh language</p> <p>8-I am likely to use Welsh as an adult</p> <p>14-Children should be made to learn Welsh</p> <p>These questions can be used to measure both attitudes towards Arabic (L1) and English (2).</p>	<p>*Part four: General attitudes</p> <p>16-It is hard to study science in Welsh</p> <p>12-Welsh is essential to take part fully in English life</p> <p>*These items were eventually moved to definitely no column</p>	<p>Part 1 (youth culture), part 3 (uses of Welsh), part 5 (attitudes towards bilingualism). Part 6 (demographic questions)</p> <p>These scale either irrelevant to the proposed study or the investigator has already used.</p> <p>Part four: General attitudes</p> <p>7-There are more useful languages to learn than Welsh</p> <p>10-Welsh has no place in the modern world</p> <p>11- Welsh will disappear as everyone in Wales can speak English</p> <p>17-you are considered a lower class person if you speak Welsh</p> <p>4-It is waste of time to keep the Welsh language alive</p> <p>15-I would like Welsh to take over from the English language in Wales</p> <p>These questions are not applicable to the status of English as it is definitely different than Welsh.</p>

Appendix H: Students' attitude survey

Students' attitudes survey

Background Information

Age: -----

Gender: Male Female

Grade:-----

A-In which languages do YOU speak to the following people? Please put a check mark in the cells that appear most applicable to you. Check one box for each line.

People	Always in Arabic	In Arabic more often than English	In Arabic and English equally	In English more often than Arabic	Always in English
Father					
Mother					
Brothers/Sisters					
Friends in the classroom					
Friends outside schools					
Teachers					
Friends in the playground					
Neighbors					

B- In which language do the FOLLOWING PEOPLE speak to you?

People	Always in Arabic	In Arabic more often than English	In Arabic and English equally	In English more often than Arabic	Always in English
Father					
Mother					
Brothers/Sisters					
Friends in the classroom					
Friends outside schools					
Teachers					
Friends in the playground					
Neighbors					

C- Which language do YOU use with the following situations?

Situations	Always in Arabic	In Arabic more often than English	In Arabic and English equally	In English more often than Arabic	Always in English
Watching TV/video/DVD					
Being in the mosque or the church					
Reading newspapers and magazines					
Listening to records/ cassettes					
Listening to Radio					
Using computer/ Internet					

Please answer the following items by circling the letter of the alternative which appears most applicable to you. We would urge to be as accurate as possible since the success of this investigation depends upon it.

1- When I hear an English song on the radio, I:

- a- Listen to the music paying attention only to the easy words
- b- Listen carefully and try to understand all the words.
- c- Change the station

2- If I had the opportunity to speak English, outside of school, I would:

- a- Never speak it
- b- Speak English most of the time
- c- Speak English occasionally

3- If the opportunities arose and I knew enough English, I would watch English T.V. programs

- a- Sometimes.
- b- As often as possible.
- c- Never.

4- If I had the opportunity to see an English play, I would:

- a- Go only if I have nothing else to do.
- b- Definitely go.
- c- Not go.

5- If there were English-speaking families in my neighborhood, I would:

- a- Never speak English to them.
- b- Speak English with them sometimes.
- c- Speak English with them as much as possible.

6- If I had the opportunity and knew enough English, I would read English magazines and newspapers

- a- As often as I could.
- b- Never.
- c- Not very often.

7- When I hear an Arabic song on the radio, I:

- a- Listen to the music paying attention only to the easy words.
- b- Listen carefully and try to understand all the words.

c- Change the station.

8- If I had the opportunity to speak Arabic, outside of school, I would:

- a- Never speak it
- b- Speak Arabic most of the time
- c- Speak Arabic occasionally

9- If the opportunities arose and I knew enough Arabic, I would watch Arabic T.V. programs

- a- Sometimes.
- b- As often as possible.
- c- Never.

10- If I had the opportunity to see an Arabic play, I would:

- a- Go only if I have nothing else to do.
- b- Definitely go.
- c- Not go.

11- If there were Arabic-speaking families in my neighborhood, I would:

- a- Never speak Arabic to them.
- b- Speaking Arabic with them sometimes.
- c- Speak Arabic with them as much as possible.

12- If I had the opportunity and knew enough Arabic, I would read Arabic magazines and newspapers.

- a- As often as I could.
- b- Never.
- c- Not very often.

Please indicate your opinion about each statement by circling the alternative below, which best indicates the extent to which you disagree or agree with that statement. There is no wrong or right answer. Please be as accurate as possible.

13- Learning English is really great

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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14-I really enjoy learning English

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

15-I plan to learn as much English as possible.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

16- I love learning English.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

17- I hate English.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

18- Learning English is a waste of time.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

19- I think that learning English is dull.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

20- Learning Arabic is really great

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
----------------------	------------------------	----------------------	---------	-------------------	---------------------	-------------------

21- I really enjoy learning Arabic

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
-------------------	---------------------	-------------------	---------	----------------	------------------	----------------

22- I plan to learn as much Arabic as possible

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
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23- I love learning Arabic

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
-------------------	---------------------	-------------------	---------	----------------	------------------	----------------

24- I hate Arabic.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
-------------------	---------------------	-------------------	---------	----------------	------------------	----------------

25- Learning Arabic is a waste of time.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
-------------------	---------------------	-------------------	---------	----------------	------------------	----------------

26- I think that learning Arabic is dull.

Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree
-------------------	---------------------	-------------------	---------	----------------	------------------	----------------

Please indicate your opinion about each statement by putting a check mark in the cells that appear most applicable to you. There is no wrong or right answer. Please be as honest as possible.

Statements	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
27- I like hearing English spoken					
28-I like speaking English					
29-English is difficult language to learn					
30-English is a language worth learning					
31-I prefer to be taught in English					
32-As an adult, I would like to marry an English speaker					
33-If I have children, I would like them to be English speaking					
34-I prefer to watch T.V. in English than Arabic					
35-We need to preserve the English language					
36-I am likely to use English as an adult					
37-Children should be made to learn English					
38- I like hearing Arabic spoken					
39-I like speaking Arabic					
40-Arabic is difficult language to learn					
41-Arabic is a language worth learning					
42-I prefer to be taught in Arabic					
43-As an adult, I would like to marry an Arabic speaker					
44-If I have children, I would like them to be Arabic speaking					
45-I prefer to watch T.V. in Arabic than English					
46-We need to preserve the Arabic language					
47-I am likely to use Arabic as an adult					
48-Children should be made to learn Arabic					

Appendix I: The Translated Version of students' attitudes survey

إستبيان إنطباعات الطلبة حول اللغة العربية والإنجليزية

معلومات عامة

العمر ----- الجنس ذكر أنثى

المرحلة الدراسية -----

أ. بأي اللغات تتحدث مع الأشخاص التاليين؟ يرجى وضع علامة صح في الخانة التي تنطبق عليك. يرجى وضع علامة صح واحدة فقط لكل سطر.

الشخص	العربية دائما	العربية أكثر من الإنجليزية	العربية والإنجليزية بالتساوي	الإنجليزية أكثر من العربية	الإنجليزية دائما
الأب					
الأم					
الأشقاء/الشقيقات					
أصدقائي في الفصل					
أصدقائي خارج المدرسة					
المعلمين					
أصدقائي في أماكن اللعب					
جيراني					

ب. بأي لغة يتحدث كل من الأشخاص التاليين معك؟

الشخص	العربية دائما	العربية أكثر من الإنجليزية	العربية والإنجليزية بالتساوي	الإنجليزية أكثر من العربية	الإنجليزية دائما
الأب					
الأم					
الأشقاء/الشقيقات					
أصدقائي في الفصل					
أصدقائي خارج المدرسة					
المعلمين					
أصدقائي في أماكن اللعب					
جيراني					

ج. ما هي اللغة التي تستخدمها في المواقع التالية

الموقف	العربية دائما	العربية أكثر من الإنجليزية	العربية والإنجليزية بالتساوي	الإنجليزية أكثر من العربية	الإنجليزية دائما
مشاهدة التلفاز / الفيديو / الأفلام					
في المسجد أو الكنيسة (دور العبادة)					
قراءة الصحف والمجلات					
الإستماع للمسجل أو الأشرطة الصوتية					
الإستماع للراديو					
إستخدام الكمبيوتر أو الإنترنت					

يرجى الإجابة على الأسئلة التالية بوضع دائرة حول الحرف المقابل للإجابة التي تنطبق عليك. يرجى توخي الدقة إذ أن نجاح الإمتحان هذا قائم على ذلك.

1. عند الإستماع لإغنية بالإنجليزية في الراديو فإني

- أ. أستمتع للموسيقى وأنتبه للكلمات السهلة فقط.
- ب. أستمتع بعناية محاولاً فهم جميع الكلمات.
- ج. أقوم بتغيير المحطة.

2. إذا سنحت لي فرصة التحدث باللغة الإنجليزية خارج المدرسة فإني

- أ. لن أتحدثها.
- ب. سأتحدث اللغة الإنجليزية في أغلب الأوقات.
- ج. سأتحدث الإنجليزية أحياناً.

3. لو سنحت لي الفرصة وكنت أعرف القدر الكافي من اللغة الإنجليزية فسأشاهد البرامج التلفزيونية الإنجليزية

- أ. أحياناً.
- ب. قدر الإمكان.
- ج. لن أشاهد أبداً.

4. إذا سنحت لي الفرصة لمشاهدة عرض مسرحي باللغة الإنجليزية فإني:

- أ. سأذهب إن لم يكن لدي شيء آخر أقوم به.
- ب. سأذهب حتماً.
- ج. لن أذهب.

5. لو كانت هناك عائلات متحدثات باللغة الإنجليزية في حيننا فإني:

- أ. لن أتحدث الإنجليزية معهم على الإطلاق.
- ب. سأتحدث معهم بالإنجليزية أحياناً.
- ج. سأتحدث معهم بالإنجليزية قدر الإمكان.

6. لو سنحت لي الفرصة وكنت أعرف القدر الكافي من اللغة الإنجليزية فسأقرأ الصحف والمجلات الإنجليزية

- أ. بقدر الإمكان.
- ب. لن أقرأ أبداً.
- ج. ليس بشكل دائم.

7. عند الإستماع لإغنية عربية في الراديو فإني

- أ. أستمتع للموسيقى وأنتبه للكلمات السهلة فقط.
- ب. أستمتع بعناية محاولاً فهم جميع الكلمات.
- ج. أقوم بتغيير المحطة.

8. إذا سنحت لي فرصة التحدث باللغة العربية خارج المدرسة فإني

- أ. لن أتحدثها.
- ب. سأتحدث اللغة العربية في أغلب الأوقات
- ج. سأتحدث العربية أحيانا.

9. لو سنحت لي الفرصة وكنت أعرف القدر الكافي من اللغة العربية فسأشاهد البرامج التلفزيونية العربية

- أ. أحيانا.
- ب. قدر الإمكان.
- ج. لن أشاهد أبدا

10. إذا أتاحت لي الفرصة لمشاهدة عرض مسرحي باللغة العربية فإني:

- أ. سأذهب إن لم يكن لدي شيء آخر أقوم به.
- ب. سأذهب حتما.
- ج. لن أذهب.

11. لو كانت هناك عائلات متحدثة باللغة العربية في حيتنا فإني:

- أ. لن أتحدث العربية معهم على الإطلاق.
- ب. سأتحدث معهم بالعربية أحيانا.
- ج. سأتحدث معهم بالعربية قدر الإمكان.

12. لو سنحت لي الفرصة وكنت أعرف القدر الكافي من اللغة العربية فسأقرأ الصحف والمجلات العربية

- أ. بقدر الإمكان.
- ب. لن أقرأ أبدا.
- ج. ليس بشكل دائم.

يرجى تحديد رأيك في العبارات التالية بوضع علامة صح في الخانة التي تتناسب مع مدى إتفاقتك مع أو إعتراضك على تلك العبارات.
يرجى وضع علامة صح واحدة فقط لكل سطر. ليست هناك إجابة صحيحة أو خاطئة. الرجاء تحري الدقة القصوى.

العبارات	أعترض بشدة	أعترض لكن ليس تماما	أعترض قليلا	محايد	أتفق قليلا	أتفق لكن ليس تماما	أتفق بشدة
13. تعلم الإنجليزية أمر جميل فعلا.							
14. أنا فعلا أميل لتعلم اللغة الإنجليزية.							
15. أخطط لأن أتعلم اللغة الإنجليزية بقدر المستطاع.							
16. أحب تعلم اللغة الإنجليزية.							
17. أكره اللغة الإنجليزية.							
18. تعلم اللغة الإنجليزية مضيعة للوقت.							
19. أعتقد أن تعلم اللغة الإنجليزية أمر ممل.							
20. تعلم العربية أمر جميل فعلا.							
21. أنا فعلا أميل لتعلم اللغة العربية.							
22. أخطط لأن أتعلم اللغة العربية بقدر المستطاع.							
23. أحب تعلم اللغة العربية.							
24. أكره اللغة العربية.							
25. تعلم اللغة العربية مضيعة للوقت.							
26. أعتقد أن تعلم اللغة العربية أمر ممل.							

يرجى تحديد رأيك في العبارات التالية بوضع علامة صح في الخانة التي تعبر عن مدى إتفاقتك مع تلك العبارات. ليست هناك إجابة صحيحة أو خاطئة. الرجاء تحري أقصى درجات الدقة.

العبارات	أوافق بشدة	أوافق	لا أوافق ولا أعترض	أعترض بشدة	أعترض
27. أحب أن أسمع اللغة الإنجليزية يتم التكلم بها					
28. أحب التحدث باللغة الإنجليزية					
29. اللغة الإنجليزية لغة صعب تعلمها.					
30. اللغة الإنجليزية لغة تستحق التعلم.					
31. أفضل أن أتلقى تعليمي باللغة الإنجليزية.					
32. عندما أكبر أرغب أن أتزوج بمن يتكلم اللغة الإنجليزية.					
33. عندما يصبح لدي أبناء أرغب أن يتحدثوا باللغة الإنجليزية.					
34. أفضل مشاهدة برامج التلفاز الإنجليزية على العربية.					
35. يجب علينا الإبقاء على اللغة الإنجليزية.					
36. من المرجح أن أستخدم الإنجليزية عندما أكبر.					
37. يجب إلزام الأطفال لتعلم اللغة الإنجليزية.					
38. أحب أن أسمع اللغة العربية يتم التكلم بها					
39. أحب التحدث باللغة العربية					
40. اللغة العربية لغة صعب تعلمها.					
41. اللغة العربية لغة تستحق التعلم.					

					42. أفضل أن أتلقى تعليمي باللغة العربية.
					43. عندما أكبر أرغب أن أتزوج بمن يتكلم اللغة العربية.
					44. عندما يصبح لدي أبناء أرغب أن يتحدثوا باللغة العربية.
					45. أفضل مشاهدة برامج التلفاز الإنجليزية على العربية.
					46. يجب علينا الإبقاء على اللغة العربية.
					47. من المرجح أن أستخدم العربية عندما أكبر.
					48. يجب إلزام الأطفال لتعلم اللغة العربية.

Appendix J: HIC Approval Letter



HUMAN INVESTIGATION COMMITTEE
 101 East Alexandrine Building
 Detroit, Michigan 48201
 Phone: (313) 577-1628
 FAX: (313) 993-7122
<http://hic.wayne.edu>



NOTICE OF EXPEDITED APPROVAL

To: Anam Al-Fadley
 College of Education

From: Ellen Barton, Ph.D. _____
 Chairperson, Behavioral Institutional Review Board (B3)

Date: November 02, 2009

RE: HIC #: 108309B3E
 Protocol Title: The Relationship Between Formal Education in Arabic and Arabic Speaking Students'
 Attitudes Towards Languages and English and Mathematics Proficiency

Sponsor:
 Protocol #: 0910007646

Expiration Date: November 01, 2010

Risk Level / Category: 45 CFR 46.404 - Research not involving greater than minimal risk

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* (Category 7*) by the Chairperson/designee for the Wayne State University Behavioral Institutional Review Board (B3) for the period of 11/02/2009 through 11/01/2010. This approval does not replace any departmental or other approvals that may be required.

- Oral Consent Script
- Assent Form (English and Arabic versions, dated 10/1/09)
- School Parental Permission/Research Informed Consent (English and Arabic versions, dated 10/1/09)

-
- Federal regulations require that all research be reviewed at least annually. You may receive a "Continuation Renewal Reminder" approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval **before** the expiration date. Data collected during a period of lapsed approval is unapproved research and can **never** be reported or published as research data.
 - All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
 - Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (<http://www.hic.wayne.edu/hicpol.html>).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the HIC office must be contacted immediately.
2. Forms should be downloaded from the HIC website at **each** use.

*Based on the Expedited Review List, revised November 1998

Appendix K: The Consent Form

[School] Parental Permission/Research Informed Consent

Title of Study: The relationship between formal education in Arabic and Arabic-speaking students 'attitudes towards languages and English and mathematics proficiency

Purpose:

You are being asked (a) to participate in a research study and (b) to allow your child to be in a research study at their school that is being conducted by **Anam Al-Fadley**, from the College of Education of Wayne State University to examine the relationship between Arabic children's education prior to coming to the U.S. as well as their attitudes towards Arabic (L1) and English (L2) and their English and mathematics proficiency. Your child has been selected because he or she is a relatively recent immigrant to the U.S. and had some formal education in the Arabic language.

Study Procedures:

As part of this study, you (only one parent) are being asked to complete a demographic survey which will take approximately 10-15 minutes to fill out.

If you decide to allow your child to take part in the study, your child will be asked to

- Complete a questionnaire and answer survey questions.
- Your child will answer questions about his/her attitudes towards Arabic (L1) and English (L2). Your child can refrain from answering some or all of the survey questions. However, those who decide not to answer some or all of the survey questions will be excluded.
- Spend no more than 15-20 minutes answering the survey questions. However, the whole process may take approximately 35-45 minutes. He/she may choose not to answer all of the questions or stop completing the survey at any time.
- If wish to review the survey questions, please contact Anam Al-Fadley at the number below. A copy of your child's completed questionnaire may be obtained from the researcher upon request.

Benefits:

There may be no direct benefits for you or your child; however, information from this study may benefit other people now or in the future.

Risks:

There are no known risks at this time to you or your child for participation in this study.

Costs:

There are no costs to you or your child to participate in this study.

Compensation:

For taking part in this research study, you will receive a \$10 gift card and your child will receive an educational gift (pens, pencils...etc) of no more than \$5 in value. Rewards will not be prorated for partial participation. Those who fill out all the survey but miss no more than few questions will likely receive the compensation.

Confidentiality:

All information collected about you and your child during the course of this study will remain confidential to the maximum extent allowable by law. Your child will be identified in the research records by a code name or number.

The child and parent surveys will be coded for matching purposes, and once matched with the proper parent, the master list of parent-child match ups will be destroyed, so that there will be no link between the survey responses and any one person.

Information that identifies you or your child personally will not be released without your written permission. However the Human Investigation Committee (HIC) at Wayne State University or federal agencies with appropriate regulatory oversight may review your or your child's record.

Voluntary Participation /Withdrawal:

Your child's or your participation in this study is voluntary. Your decision about enrolling your child in the study will not change any present or future relationships with Wayne State University or its affiliates, your child's school, your child's teacher, your child's grades or other services you or your child are entitled to receive.

Questions:

If you have any questions about this study now or in the future, you may contact Anam Al-Fadley at the following phone number 313-271-1120. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Consent to Participate in a Research Study:

To indicate your voluntarily agreement to participate and to have your child take part in this study, please sign on the appropriate line below. If you choose to have your child take part in this study, you may withdraw them at any time. You are not giving up any of your or your child's legal rights by signing this form. Your signature below indicates that you have read, or

had read to you, this entire consent form, including the risks and benefits, and have had all of your questions answered. You will be given a copy of this consent form.

Name of Participant

Date of Birth

Signature of Parent/ Legally Authorized Guardian

Date

Printed Name of Parent Authorized Guardian

Time

Signature of Parent/ Legally Authorized Guardian

Date

Printed Name of Parent Authorized Guardian

Time

Signature of the researcher

Date

Printed Name of the researcher

Time

Appendix L: The Translated Version of the Consent Form

(المدرسة) اذن ولي الأمر/ القبول للمشاركة في بحث

عنوان الدراسة: العلاقة بين كل من التعليم المدرسي باللغة العربية وإنطباعات الطلاب المتحدثين باللغة العربية عن اللغات بالمهارة في اللغة الإنجليزية والرياضيات.

الهدف من الدراسة:

أنت مدعو (أ) للمشاركة في مشروع بحث و(ب) للسماح لإبنكم بالمشاركة في مشروع بحث بمدرسته والتي تقوم بها إناعام الفضلي، من كلية التربية في جامعة وين ستيت والتي تهدف لبحث العلاقة بين التعليم الذي تلقاه الأبناء قبل قدومهم للولايات المتحدة وإنطباعاتهم حول اللغتين العربية (اللغة الأولى) والإنجليزية (اللغة الثانية) وتأثير كل من ذلك على ادائهم في مادتي اللغة الإنجليزية والرياضيات. وقع الإختيار على إبنكم لكونه مهاجر حديث نسبيًا إلى الولايات و لتلقيه التعليم باللغة العربية سابقًا.

خطوات البحث:

كجزء من هذه الدراسة، أنت (أحد الأبويين فقط) مدعو للقيام بتعبئة بحث سكاني والذي سيستغرق إكماله نحو 10-15 دقيقة.

في حال قيامك بالسماح لإبنكم بالمشاركة في هذه الدراسة، سيتم الطلب من إبنكم:

- تعبئة إستبيان والإجابة على أسئلة بحث.
- سيقوم إبنكم بالإجابة على أسئلة تختص بإنطباعاته حول اللغتين العربية (اللغة الأولى) والإنجليزية (اللغة الثانية). يمكن لإبنكم الإمتناع عن إجابة بعض أو كل أسئلة البحث ولكن سيتم إستبعاد أولئك الذين يقررون عدم الإجابة على بعض أو كل أسئلة البحث.
- أن يقضي زما لا يتعدى 15-20 دقيقة في الإجابة على الأسئلة. ستستغرق المشاركة الكلية في هذه الدراسة نحو 35-45 سيكون لإبنكم الإختيار بعدم الإجابة على جميع الأسئلة أو أن يمتنع عن إكمال الإستبيان في أي وقت.
- إن كنت ترغب بمناقشة أسئلة الإستبيان، يرجى الإتصال بإناعام الفضلي على الرقم الموجود بالأسفل. ستقوم الباحثة بناء على طلب منك تزويدك بنسخة من الإستبيان المعبد الخاص بإبنكم.

الفوائد:

قد لا تكون هناك فوائد مباشرة لكم أو لإبنكم، ولكن قد تعود المعلومات الموجودة في هذا البحث بالنفع على أناس آخرين حاليا أو بالمستقبل.

المخاطر:

لا توجد أية أضرار في هذا الوقت جراء مشاركتك أو مشاركة إبنكم بهذه الدراسة.

التكاليف:

لن تتحمل أنت أو إبنك أية تكاليف مادية نتيجة المشاركة في هذه الدراسة.

التعويض المادي:

تقديرًا للمشاركة في هذه الدراسة ستحصل على بطاقة مشتريات بقيمة 10 دولارات بينما سيحصل إبنكم على هدية تعليمية (كأقلام الرصاص والحبر... إلخ) لا تتعدى قيمتها 5 دولارات. لن يتم تجزيء المكافأة للمشاركة الجزئية. من المرجح أن يشمل التعويض أولئك الذين يقومون بتعبئة الإستبيان كاملا في ما عدا القليل من الأسئلة التي تفوتهم سهواً.

سرية المعلومات:

ستبقى جميع البيانات المتعلقة بكم و بابتكم والتي تم الحصول عليها خلال هذا البحث سرية لأقصى حد مسموح به قانونياً. ستتم تحديد هوية إبتكم في سجلات هذا البحث بواسطة رمز أو رقم.

سيتم تعيين رمز لكل من إبتبيان ولي الأمر وإبتبيان الطالب لغرض المطابقة، ومتى تم ربط الطالب بولي أمره سيتم إتلاف القائمة الرئيسية التي تحوي بيانات مطابقة الأبناء مع أولياء أمورهم حتى لاتكون هناك صلة بين الإجابات في الإبتبيان وأي شخص معين.

لن يتم الإفصاح عن أية بيانات من شأنها التعريف عن هويتك أو هوية إبتكم بدون موافقة خطية علماً بأنه يحق للجنة التقصي البشري (HIC) في جامعة وين ستيت أو بعض الوكالات الفديرية التي تمتلك القدر المناسب لصلاحيات الرقابة التنظيمية الإطلاع على سجلاتكم أو سجلات إبتكم.

المشاركة الإختيارية / الإنسحاب:

إن مشاركة إبتكم أو مشاركتكم في هذه الدراسة إختيارية. كما أن تسجيل إبتكم في هذه الدراسة لن تؤدي إلى تغيير أي صلة حالية أو مستقبلية مع جامعة وين ستيت أو أي من منتسبيها، أو مع المدرسة، أو المدرس، أو علامات الطالب أو أي خدمات أخرى يحق لإبتكم الحصول عليها.

للإستفسار:

إذا كان لديك أي إستفسار عن هذه الدراسة الآن أو في المستقبل، بإمكانك الإتصال بإبتعام الفضلي على هاتف رقم: 3132711120. إن كان لديك أي سؤال حول حقوقك كمشارك في بحث علمي، فبالإمكان الإتصال برئيس لجنة البحث البشري على هاتف: 3135771628. وإذا لم تتمكن من الوصول لفريق البحث، أو إن أردت التحدث لشخص آخر من غير فريق البحث، يمكنك الإتصال على هاتف 3135771628 ل طرح أسئلتك أو لتوجيه ما لديك من شكوى.

الموافقة على المشاركة في هذه الدراسة:

للاشارة الى موافقتكم بالمشاركة والسماح لابنتك للمشاركة في هذه الدراسة، يرجى التوقيع على السطر المناسب أدناه. إن قررتم بالسماح لإبتكم بالمشاركة في هذه الدراسة، فبإمكانكم القيام بسحبهم في أي وقت. لا يعني توقيعكم هذا النموذج قيامكم بالتنازل عن أي من حقوق إبتكم القانونية. سيعني توقيعكم أدناه أنكم قمتم بقراءة أو تم إطلاعكم على جميع أجزاء استمارة الموافقة هذه بما في ذلك المخاطر والفوائد وأنه قد تمت الإجابة على جميع إستفساراتكم. سيتم تزويدكم بنسخة من هذه الإستمارة.

_____	_____
تاريخ الميلاد	إسم المشارك
_____	_____
اليوم	توقيع الأب أو الأم/ ولي الأمر
_____	_____
الوقت	إسم الأب أو الأم/ ولي الأمر

_____	_____
اليوم	توقيع الأب أو الأم/ ولي الأمر
_____	_____
الوقت	إسم الأب أو الأم/ ولي الأمر
_____	_____
اليوم	توقيع الباحث
_____	_____
الوقت	إسم الباحث

Appendix M: The Assent Form

[Behavioral]Documentation of Adolescent Assent Form

(ages 13-17)

Title: The relationship between formal education in Arabic and Arabic-speaking students' attitudes towards languages and English and mathematics proficiency

Study Investigator: Anam Al-Fadley

Why am I here?

This is a research study. Only people who choose to take part are included in research studies. You are being asked to take part in this study because you immigrated from a country where Arabic was the language used in school and are now trying to improve your English skills and academic achievement. Please take time to make your decision. Talk to your family about it and be sure to ask questions about anything you don't understand.

Why are they doing this study?

This study is being done to find out if there is a relationship between students' schooling in their home country as well as their attitudes towards their Arabic (L1) and English (L2) and their English and mathematics achievement.

What will happen to me?

During the study you will be asked to reply to some written survey questions.

How long will I be in the study?

You will be in the study for approximately 35-45 minutes. Answering the survey questions may take no more than 15-20 minutes.

Will the study help me?

You may not benefit from being in this study; however information from this study may help other people in the future who are of Arabic background and are learning English.

Will anything bad happen to me?

There is no expected risk that will result from your answering the survey questions.

Do my parents or guardians know about this?

This study information has been given to your parents/guardian. You can talk this over with them before you decide.

What about confidentiality?

Every reasonable effort will be made to keep your information confidential. Your name will not be on any of the survey forms. There will only be a number that matches your parents' number so that surveys of parents and their children can be matched.

We will keep your records private unless we are required by law to share any information.

What if I have any questions?

For questions about the study please call Anam Al-Fadley at 313-271-1120. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628.

Do I have to be in the study?

You don't have to be in this study if you don't want to or you can stop answering the survey questions at any time. Please discuss your decision with your parents and researcher. No one will be angry if you decide to stop being in the study.

AGREEMENT TO BE IN THE STUDY

Your signature below means that you have read the above information about the study and have had a chance to ask questions to help you understand what you will do in this study. Your signature also means that you have been told that you can change your mind later and withdraw if you want to. By signing this assent form you are not giving up any of your legal rights. You will be given a copy of this form.

Signature of Participant (13 yrs & older)

Date

Printed name of Participant (13 yrs & older)

**Signature of Witness (When applicable)

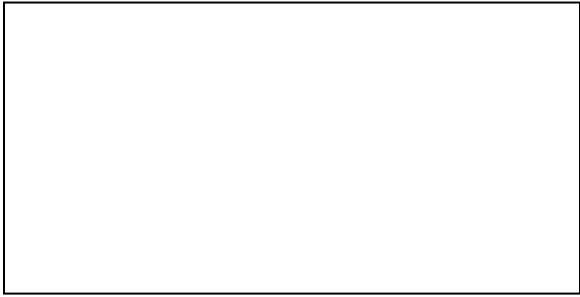
Date

Printed Name of Witness

Signature of Person who explained this form

Date

Printed Name of Person who explained form



Appendix N: The Translated Version of the Assent Form

نموذج إقرار للطلاب في سن المراهقة (العمر 13-17 سنة)

عنوان الدراسة: العلاقة بين كل من التعليم المدرسي باللغة العربية وإنطباعات الطلاب المتحدثين باللغة العربية عن اللغات بالمهارة في اللغة الإنجليزية والرياضيات.

الباحثة: إنعام الفضلي

ما هو الداعي لوجودي هنا؟

هذه دراسة بحث. ستقتصر هذه الدراسة على أولئك الذين يوافقون على المشاركة. أنت مدعو للمشاركة في هذه الدراسة لكونك قد هاجرت من بلد تستخدم فيه اللغة العربية في المدرسة وأنت الآن تحاول تحسين مهاراتك باللغة الإنجليزية وتحصيلك العلمي. يرجى القيام بأخذ الوقت الكافي قبل إتخاذ القرار. قم بمناقشة الأمر مع أسرتك ولا تتردد في طرح أي سؤال عن أي شيء لا تفهمه.

لماذا تقومون بإجراء هذه الدراسة؟

يتم إجراء هذه الدراسة لمعرفة إن كان هناك علاقة بين كل من التعليم المدرسي الذي تلقاه الطلاب في أوطانهم وإنطباعاتهم حول اللغة العربية (اللغة الأولى) واللغة الإنجليزية (اللغة الثانية) من جهة وبين تحصيلهم باللغة الإنجليزية والرياضيات من جهة أخرى.

ماذا سيحدث لي؟

خلال هذه الدراسة سيطلب منك الإجابة على بعض الأسئلة المكتوبة.

ماهي المدة التي سأقضيها في هذه الدراسة؟

ستقضي 35-45 دقيقة تقريبا في هذه الدراسة. قد لا تستغرق الإجابة على أسئلة الاستبيان أكثر من 15-20 دقيقة.

هل سأستفيد من هذه الدراسة؟

قد لا تستفيد من وجودك في هذه الدراسة ولكن المعلومات التي تحويها هذه الدراسة قد تعود بالنفع في المستقبل على بعض الأشخاص الذين ينتمون إلى أصول عربية ويقومون بتعلم اللغة الإنجليزية.

هل هناك أي مخاطر؟

لا يحتمل وجود أية مخاطر ناجمة عن إجابتك لأسئلة الاستبيان.

هل يعرف الآباء أو أولياء الأمور عن هذا الأمر؟

تم إحاطة أبويك/ولي أمرك علما بهذه الدراسة. يمكنك التحدث معهم بهذا الشأن قبل إتخاذ القرار.

ماذا عن سرية المعلومات؟

سيتم بذل أقصى جهد لإبقاء بياناتك سرية. لن يظهر إسمك على أي من أوراق الاستبيان. سيكون هناك فقط رقم يطابق الرقم المخصص لأبويك حتى يتم ربط استبيانات الآباء بأبنائهم. سنتم إحاطة بياناتك بسرية تامة مالم يقضي القانون بالإطلاع عليها.

ماذا لو كان لدي أي إستفسار؟

لأي سؤال حول الدراسة يرجى الإتصال بإنعام الفضلي على هاتف 3132711120. إذا كان لديك أي سؤال عن حقوقك كمشارك في بحث علمي، يمكنك الإتصال برئيس لجنة البحث البشري على هاتف 3135771628.

هل تجب على المشاركة؟

لا تجب عليك المشاركة إن لم تكن لديك الرغبة بذلك ويمكنك عدم الإستمرار بالإجابة على أسئلة الإستبيان في أي وقت. يرجى إطلاع قرارك على والديك وعلى الباحث. لن يغضب أحد إذا أردت عدم الإستمرار في البحث.

الموافقة على المشاركة في هذه الدراسة

سيعني توقيعك في الأسفل أنك قد إطلعت على المعلومات أعلاه الخاصة بالدراسة وأنه كانت لديك الفرصة لتوجيه أية أسئلة من شأنها المساعدة في فهم المطلوب منك في هذه الدراسة. وسيعني توقيعك أيضا أنك قد أخبرت بحقك في تغيير رأيك لاحقاً والإنسحاب إن أردت. لا يعني التوقيع على نموذج الإقرار هذا بأنك قد تخليت عن أي من حقوقك القانونية. ستحصل على نسخة من هذا النموذج.

_____	_____
التاريخ	توقيع المشارك (13 سنة أو أكبر)
_____	_____
التاريخ	إسم المشارك (13 سنة أو أكبر)
_____	_____
التاريخ	** توقيع الشاهد (إن تطلّب الأمر)
_____	_____
التاريخ	إسم الشاهد
_____	_____
التاريخ	توقيع الشخص الذي قام بشرح هذا النموذج
_____	_____
التاريخ	إسم الشخص الذي قام بشرح هذا النموذج

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ABSTRACT**THE RELATIONSHIP BETWEEN FORMAL EDUCATION IN ARABIC AND STUDENTS' ATTITUDES TOWARDS LANGUAGES AND ENGLISH AND MATHEMATIC PROFICIENCY**

by

ANAM AL-FADLEY**August 2010****Advisor:** Marc Rosa**Major:** Curriculum and Instruction**Degree:** Doctor of Philosophy

The purpose of this study is to examine the following the relationships between: 1) formal education (adequate and limited) in the Arabic language and English language proficiency and academic achievement in mathematics of Arabic-speaking students and 2) their attitudes towards L1 (Arabic) and L2 (English) and English language proficiency and academic achievement in mathematics. Eighty-six Arabic speaking third graders through eighth graders in the Midwestern state were selected on non-random sampling to participate in this study. Four main measures were used to collected data: (1) Parent Demographic Survey, (2) students' attitudes survey, (3) Math component of the Michigan Educational Assessment program (MEAP), and (4) scores on the English Language Proficiency Assessment (ELPA).

Descriptive analyses were used to summarize, classify and simplify the data collected from the two surveys. Inferential analyses, on the other hand, were used to investigate four research hypotheses of this study. Two statistical tests were used: 1) 2x2 factorial univariate analysis of variance (UNI-ANOVA) and 2) Lambda, and Goodman & Kruskal's Tau. No significant relationships were found in all four hypotheses. Discussion about possible

explanations as to why all research hypotheses were not supported is provided. Additionally, potential future research is also examined.

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-Effects of attitudes towards languages in learning second or foreign languages.