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An Examination Of The Relationship Among Iraqi High School Students' Science Achievement And Perceptions Of The Value Of Education, Parent Support, And Peer Support In The United States

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**AN EXAMINATION OF THE RELATIONSHIP AMONG
IRAQI HIGH SCHOOL STUDENTS' SCIENCE ACHIEVEMENT AND
PERCEPTIONS OF THE VALUE OF EDUCATION, PARENT SUPPORT,
AND PEER SUPPORT IN THE UNITED STATES**

by

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DISSERTATION

Submitted to the Graduate School

Wayne State University

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2015

Major: CURRICULUM AND INSTRUCTION

Approved by:

Advisor

Date

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2015

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DEDICATION

To my parents, who were so simple and wise, for teaching me life is worth working for.

To my brothers and sisters who believed and trusted my dream in education.

To my family and my three precious daughters; Rawan, Jannah and Mariam.

To my people who believed in knowelage and peace.

And to those young Iraqi youths who inspired me for this research.

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Although PhD stands for a “Doctorate of Philosophy,” it should also be interpreted as a P for “Perseverance,” H for “Hardworking,” and D for “Determination.” Moreover, what makes the achievement more purposeful and valuable are the experiences in-between major achievements and the support one gets from different advisors, colleagues, students, family and other backers throughout this journey. I was lucky to have such advisors and support.

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PREFACE

This research started when I was a regular science teacher in the mainstream in one of the high schools in the Detroit school district. A group of students arrived from a camp in Saudi Arabia where they lived for three years as refugees from Iraq. Knowing that I spoke their language, the administration asked me to facilitate their admission process and other adjustments to the school environment. They started as a few students, doubled, and later tripled, to the extent that I had to adjust my schedule to accommodate the academic curriculum of the many students who are foreigners to the school environment and the administration. Although I was certified in science and I had a master's degree in physics and a minor in chemistry, I had to take bilingual and ELL classes in order to fulfill the district requirement for teaching this group of students. I ended up having the bilingual endorsement and an education specialist degree. I was their bilingual teacher, their math and science teacher, and the mediator on the counseling issues. On summer breaks, I taught those students English and History. I was also their soccer coach for the two teams, boys and girls, and their chaperone for all their trips outside the school. I also arranged all the parent-teacher conferences with the administration.

From the beginning when I met them, I started wondering what motivation these students carried with them for this new culture. What are those factors that could reshape their desire for education and to be successful citizens in the future? My main advisor, Dr. Marc Rosa, encouraged my curiosity, and I began my journey as a researcher by reading about this group of immigrants and refugees to pursue this question. In one of those research articles by Professor Denis McInerney, who was working on a research in Australia about the Lebanese immigrants, he explained that there are many theories could explain the relationship between students' motivation and their school achievement, such as goal theory and the individualist and

collectivist theory. He explains that in general, Arabs put more obligation and responsibilities toward their community than individual interest. As a result, there is more emphasis toward the group than on the person himself. Also, besides this, there is the social dimension of the school, such as parents, teachers, and peers.

At this point, I started selecting my variables from my observation of these students. One of those factors was the grouping, or the affiliation and the friendship that they have for each other. They used to skip as a group and attended classes together. I noticed that might be one of the main factors keeping them in school. The other factor I thought of was the influence of their parents on them. Due to the strict culture that they came from, parents should have an effect on their children. The other factor I considered was the value of education that any of those students might have inside, and a dream they might want to fulfill in the new country. Around this time, I started e-mailing Dr. McInerney back and forth, telling him I liked his research. He encouraged me and liked the idea of my topic. He also provided me permission to use his research instrument for collecting my data, but asked me to report the result, because he was working to publish a research book.

I was satisfied by the results of my research work, which confirmed my prediction that the value of education that newcomers carry with them and peer support – the affiliations, friendships, and relationships they experience – were major factors in their academic success. These factors are important for educators to pay attention to, and should shape the development of policies and academic plans at the administrative level.

I did not keep track of whether my old students made it through this country or failed the chance of being successful, but one day, when I got into a car problem and the road service driver came to fix my car or to give me a ride, the minute the driver saw me, he started

screaming with joy and approached me, calling my name with excitement and smiles. I remembered his face right away and even his name, although it had been over 15 years; he was one of those students who came first. He started calling his friends, boys and girls, telling them about me. It was a nice moment talking to a few of them in that short time. After he gave me the ride, he gave me his phone number and invited me to his place.

Most of those students did not make it to the higher level of study, such as college or university, but the camaraderie and the friendships that they built when they first came to this country are still influential and strong regardless of the stage they reached in this society. Also, by approaching me with excitement and happiness, those students showed me that they still valued and respected the opportunity to receive an education. Even if they did not make it, I am certain they built and saved it, and will pass it to their kids; and those kids will be part of the parents' success, too.

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CHAPTER 1

INTRODUCTION

Middle Eastern high school students who study in the U.S.A. face tremendous hardships and difficulties, sometimes forcing them to be underachievers or drop out and lose their chance for a more successful and prosperous future. According to Ganderson (2007), “the school systems in a number of countries are failing to meet the needs of students, especially of immigrants...leading to disastrous potential” (p. 271). Despite the diverse groups of individuals and their different cultures and countries, they all face different challenges and difficulties. For example, the number of bilingual students in one Detroit public school dropped drastically from 72 to 15 students within the last three years. Almost one third of this number quit school indefinitely; another third moved to a different school district or charter school, and the last third struggled to graduate (Detroit Bilingual Department Study, 2004).

Background of the Problem

Information regarding the circumstances of Iraqi students’ immigration to the United States and their social experiences in school is important in understanding factors that influence their achievement outcomes in science. The history of the Iraqi immigrants can be traced to 15 to 20 years ago when the first Gulf war ended and Iraq pulled out of Kuwait. Most of these immigrants were Shi’at (an Islamic faith) and part of the group who were rebelling against the Iraqi government. They expected help from the American government, but ended up leaving the country and living in camps at the borders between Iraq and Saudi Arabia. Some of them lived in these camps for three to five years before immigrating to the United States, Australia and European countries. The first group of approximately 11,000 people who arrived in the United States, with most of them settling in Detroit and Dearborn. After these Iraqi refugees received

their citizenship, they reunited with their families by bringing them to the United States. Thus, the total number of Iraqi immigrants doubled. The number reached 25,000 by the year 2005, making them the fifth largest immigrant group from Middle East after the Yemeni, Lebanese, Iraqi-Chaldean, Palestinians, and Syrians. These groups share similar Arabic-Muslim cultural backgrounds, except for Iraqi Chaldeans who are Catholic Christians.

Until recently, the views of Iraqi Arabs were neither negative nor positive. However, their image has worsened because of recent events (i.e., Gulf wars, terrorism, etc.) that has resulted in stereotyping of most Muslim Arabs. This prejudice and stereotyping resulted in harassment, intimidation, and vilification of Arabs in the United States and had a negative influence on Arab youth. As Ovando, Collier, and Combs (2003) pointed out, “following the terrorist attack on the World Trade Center many Arab university and college students were ostracized by their U.S. peers and some cases this caused them to withdraw from classes and return to their home countries” (p. 15).

In Detroit Public Schools, the dominant cultural group is African American, who are more different than similar from their Arab Iraqi peers. These differences often have alienated and isolated the minority groups and caused them to feel uncomfortable in school. According to Takeda (2000) “cross-cultural migration is highly stressful process”(p. 3). When students from different cultural, social, and educational background try to fit into a hostile environment, the result may be increased anxiety and stress. In many schools, Iraqi students were harassed and verbally abused by their African American classmates on a daily basis. Slurs and racially motivated language were used to intimidate the Iraqi students. This negative treatment frustrated and angered many bilingual parents, to the point that they prevented their children from attending schools all together; they were afraid of worse results and physical abuse against them,

especially against their young daughters. Collier (1995) believed that, “external influences such as prejudice and discrimination may affect the internal psychological workings of self-esteem, anxiety, integration with peers and achievement in school” (p.12).

The common knowledge among the Iraqi community is that the Iraqi immigrants came to the United States with the hope of returning to Iraq once the government of Saddam Hussein was removed from power; therefore, they saw themselves as temporary residents. Because they were planning to return to their native country, they did not attempt to adjust to the mainstream society (e.g., find jobs, learn English, continue their education). As a result, they had poor literacy skills in both English and academic Arabic and lacked economic security. Although no documented study has been published on this issue, the Iraqi refugees in the community reflected this sentiment about returning to their original country.

Since their arrival, the situation worsened, with the United States in the midst of the worst recession since the Great Depression of the 1930s. In particular, this economic recession limited the number of jobs in manufacturing industries. This factor, together with discrimination in recruitment by American employers, resulted in a difficult life for these people, especially those with limited skills and experiences. Eventually, these immigrants began to rely on welfare as their main source of income.

In spite of their disadvantages, language deficiency, and lack of basic skills, the Iraqi people in general have strong family and social ties; they typically offer support to other members of their family and community. According to documents in the Detroit Public Schools Archives (1998), “the Arabic speaking community is characterized by strong family ties, respect and admiration for the elderly, family reputation, generosity, hospitality, loyalty, truthfulness, trust, chastity, and pride in language and history” (p. 47). Friends and members of the Iraqi

community hold strong moral and social values and unity, and their Iraqi community and elders, in turn, have high aspirations for Arabs, family, and social relations. Children within this community are expected to adhere to the norms of behavior of the family group and stick to cultural convictions, all of which greatly can influence an individual's behavior. Iraqi immigrants also receive support from the many organizations that offer services to the community in Arabic, such as the Arabic Community Culture for Economic Social Services (ACCESS) and the American Chaldean Council (ACC).

High school students who came to America because of extraordinary social and political circumstances had little time to close the gap with their peers in their new environment. As Duff (2001) stated, "with limited time and such heavy academic demands, which may be compounded by the strain of geographical and cultural displacement, they may exhibit lower achievement and completion rates than expected" (p. 2). These students also faced the conflict between their old culture and a new one. For those newcomers, the challenge was two-fold. One was the inherited flaws from their previous culture, which was intrinsic, while the other was being an outsider, coping with new pressures they encountered from their new environment in a new society. According to Trueba, Jacobs, and Kirton (1990), "language and cultural barriers have caused many students to be placed in classes for the learning disabled" (p. 176). Because of this situation, these newcomers face challenges that can impede their progress in school. Miller and Endo (2004) argued that, "English language learners face a plethora of problems as they begin to build new lives in a strange land" (p.786). The problems stem primarily from linguistic and cultural differences.

Acknowledging the existence of language deficiencies, which can be obstacles to students' academic achievement and progress in some subjects, teachers need to remember that

some classes do not demand language proficiency. For example, science and math often require less language preparation (Wang & Goldschmidt, 1999) than history and English language arts. Therefore, Middle Eastern students who excel in math and science should be motivated and willing to excel in such subjects, despite the new language. They should be able to compete with other students, while receiving high grades and improving their esteem and confidence. The majority of Middle Eastern students share similar cultural backgrounds as they were forced to leave their original countries by similar circumstances. Thus, they could encounter the same types of difficulties as others who arrived before them to the United States. However, this conjecture is not valid or true for all Middle Eastern immigrants. Evidence indicated that students whose families had emigrated earlier and who attended school at a younger age (e.g., Lebanese and the Palestinian) had adapted faster and more easily to the American culture and way of life. As Saab (1987) found, “longer residences were associated with higher levels of acculturation” (p. 16). Some of these earlier immigrants did very well in the United States, becoming lawyers, doctors, and pharmacists. Younger students adapt faster and more easily. Similarly, second generation children, although some of them are bilingual, tend to have less difficulty than their counterparts of Iraqi students, who arrived more recently to the United States. The immigrant Iraqi students have not adjusted or adapted as easily to the American culture and society. They have different goals and aspirations are related to education, in particular, and culture in general. These challenges are administrative problems in many high schools, as educators work to find a viable educational program for those students.

Iraqi students who arrived recently to this country generally have low academic achievement. English deficiency is the primary obstacle for being able to achieve at grade level. them to stay behind in their grade level, and their lack of achievement remains a problem. Lack

of motivation and support by parents and peers regarding the value of education were problems that counselors and teachers associated with low academic achievement. These factors were believed to have a negative influence on students' school achievement (Gonzalez & Walters, 2006).

Statement of the Problem

The schools' instructional staff and administrators attempts to engage newcomer bilingual students and their parents in the process of education and motivate them to achieve tangible results. But gaining support and participation of parents in school and in the general education of their children remains a great challenge. However, a primary factor in the relatively low academic performance of Iraqi students can be tied back to the lack of support by parents and peers and students' failure to value education. Thus, the research problem of this study is to investigate how parents' and peers' support, as well as students' value of education might influence the academic achievement of Iraqi-high school students in science.

The Definitions of Variables

For this study, the independent variables are defined as:

1. Students' perceptions of the value of education
2. Students' perceptions of parent support
3. Students' perceptions of peer support

The dependent variable is the students' achievement in science as measured by their semester grades.

Research Questions and Hypotheses

From the information gathered initially by teachers, counselors, and administrators, and the experiences of the Iraqi group as refugees in different countries, it was expected that the

school achievement of the Iraqi students would be influenced by motivational factors. Those factors might play roles as predictors of their academic achievement. To test this hypothesis, the effects of each factor were tested on the Iraqi students' achievement in science. The following research questions and associated hypotheses were tested for this study.

Research Question #1: Is there a relationship between a student's value of education and his/her academic achievement in science?

H₁: A student' value of education has a significant positive relationship with student achievement in science.

H₀₁: A student's value of education has no significant relationship with student achievement in science.

Research Question #2: Is there a relationship between parental support and student achievement in science?

H₂: Parental support has a significant positive relationship with students' academic achievement in science.

H₀₂: Parental support has no significant relationship with students' academic achievement in science.

Research Question #3: Is there a relationship between peer support and student achievement in science?

H₃: Peer support has a significant positive relationship with student achievement in science.

H₀₃: Peer support has no significant relationship with students' academic achievement in science.

Significance of the Problem

No published research has been found that examined the relationship between Iraqi students' academic outcomes and the absence of goals for the future. Several factors are believed to influence school achievement, such as a student's self-esteem, sense of competence, sense of purpose for schooling, and their value of education (Powers, 1985). Yet, no published studies have been found that examined the effects of support, or lack of it, that teachers, parents, and students provide for Iraqi students and their academic outcomes. Although some studies have examined the goals of students from different cultural backgrounds (Suleiman & McInerney, 2006), no published research has been found concerning students from an Iraqi background. Therefore, this research may be fill the gap in the literature by examining the school achievement and background of Iraqi students, in particular, to identify some major factors contributing to their lack of achievement and academic success.

Assumptions

The following assumptions are made for this study:

1. The Iraqi students are motivated when they have the opportunity for learning.
2. Schools have different strategies for educating students, but in general, they try to engage all the students in the learning process.
3. Teachers try hard to help students learn regardless of their students' ethnic or national background.
4. All Iraqi parents, regardless of the hard and harsh circumstances they went through, encourage and support their children's education.

Limitations of the Study

The following limitations are established for this study:

1. The study is limited to Iraqi students enrolled in a single school district. As a result the findings may not be generalizable to students of other ethnic groups enrolled in the same school or other schools in the district or state of Michigan.
2. The study is limited to high school students. The study results may be different for elementary or middle school students.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter begins with a discussion of the conceptual framework of this study and the theories that underlie it. The theoretical basis is presented for the importance of the value placed on getting an education, as well as the roles that are played by parental and peer influence in enhancing a child's chances for success in achieving academic success. The second part of this chapter focuses on empirical studies that have been conducted for each of the variables in this study.

Theoretical Framework

Personal investment theory. An important component of this theoretical framework is personal investment theory (Maehr & Braskamp, 1986; Maehr & McInerney, 2004). This theory is concerned with how people choose to spend their time and how people decide to use their talents and energy. Based on a social-cognitive framework, the personal investment theory briefly combines information from people's present perspective (whatever they think, believe, value, etc.) and their experiences (whatever they carry from their life situations). These two factors form a meaning for a moment, and result in specific patterns of behavior. That behavior can tell us the extent to which a person is motivated.

Many factors can influence a child's success in school, but for children from immigrant families, additional socio-cultural issues must be included in the equation. As McInerney (2008) explained, personal investment theory is a logical part of a theoretical framework that can be used to compare groups on the basis of social and cultural differences. Drawing from Maehr and Braskamp's original theory of personal investment, McInerney assigned three components to this

theory,: “(a) sense of self, (b) perceived goals of behavior in given situations, and (c) perceived facilitating conditions for pursuing these goals” (p. 871).

Originally, Maehr & Braskamp (1986) constructed their theory of personal investment from a variety of theoretical perspectives, which are summarized and reflected in the following five propositions:

1. Motivation is inferred from behavior that is observed.
2. The direction of behavior is of primary significance, and explains why people invest in a certain way or other ways.
3. The thoughts, perceptions, and beliefs of a person determine the choice of performance and activity toward personal investment.
4. The assessment of meaning of a behavior is important.
5. Motivation is a process hidden in the ongoing behavior. People use all kinds of decisions and changes throughout their behavior in life (p. 44-45)

The propositions from Maehr and Braskamp (1986) can be seen more fully in McInerney’s personal investment theory. According to Maehr and Braskamp (1986), a person’s “sense of self” is a collection of perceptions, beliefs, and feelings. They propose four facets or components of selfhood, or sense of self:

A person's *identity* is the perceived characteristics of the individual, or what the person believes to be important in his or her life. *Self-Reliance* is the ability of a person to face difficulties, challenges and uncertainties with confidence. *Goal-directedness* is the ability to consciously set goals, schedule oneself, and make plans for the future. Finally, *sense of competence* is the ability for someone to express confidence in their tasks, recover quickly from defeats and remain optimistic about success. (p. 59)

The second component in the personal investment theory is the perceived goals of behavior in a given situation or “the achievement goals.” People usually think with no hesitation about their goals, purposes, and the outcomes of their activities. Therefore, people work according to what a situation promises them and what goals they aim to achieve in that situation.

With respect to achievement goals, incentives guide people to invest themselves in certain activities.

According to Maehr & Braskamp (1986), there are two personal incentives one could get from any task or goal: intrinsic and extrinsic. Intrinsic incentives occur when a person enjoys the task itself. As Goldbeck and Ryan (2003) pointed out, people with intrinsic tasks respond to personal interest in a subject, and they tend to experience satisfaction or enjoyment in learning tasks. Tasks are intrinsic tasks when a person understands or experiences an adventure. Conversely, extrinsic tasks occur when a person attempts to satisfy his/her ego by doing better than others or winning a competition or a game. The extrinsic task, according to Maehr and Braskamp (1986), is when a student completes a task to please others or make someone happy (e.g., receiving teacher's and parent's praise as well as getting good grades). Also, when a person gets rewards by winning a prize or making money, the task is considered extrinsic.

The third component in the personal investment theory is the "perceived facilitating conditions" for pursuing these goals. Maehr and Braskamp (1986) originally referred to this component as a person's "perceived options," or the choices a person has in any given situation that influences how one acts according to those options. Moreover, the options should be appropriate with sociocultural norms. In particular, Triandis (1980) referred to the options or facilitating conditions as objective factors in the environments or the geography of the environment which facilitate or prevent the act. Finally, the availability and acceptability of those options determine specific motivational acts (p. 62).

Overall, McInerney and his colleagues probably have done the largest research program on personal investment theory. Their research was primarily applied to school motivation, with a variety of cultural backgrounds and groups. In their research, they extended the third component

from perceived acceptable options into viable and culturally allowable options (Maehr & McInerney, 2004).

Students' personal goals (purpose) and sense of self (expectancy) operate as internal motivational variables that could influence and affect their behavior and academic achievement. McInerney, Dowson, and Yeung (2005) also emphasized how external forces in students' social environments could facilitate or inhibit internal motivations in the right direction toward achievement (McInerney et al., 2005). Therefore, facilitating conditions refer to external forces; achievement such as the support and caring from parents, teachers, and peers; that an individual has in his/her situational circumstances and environment that could affect the process of motivation and school.

Sense of self and achievement goals are aspects of the value that immigrant students and their parents place on education that can be affected by cultural conditions. For example, McInerney, Roche, & Marsh (1997) from their study on Aboriginal and non-Aboriginal groups of children in Australia in a high school setting concluded that self-esteem is part of student's sense of self and is a significant predictor of academic achievement for each group. Furthermore, the sense of purpose that is part of a student's sense of self is positively related to the purpose of schooling and the desire for high prestige occupations after leaving school (p. 230).

A more recent study by McInerney (2008) found that Asian students are more oriented for achieving success in school compared to Anglo students. The Asian group valued school and had a greater sense of purpose in furthering their education. The author also found that the major features distinguishing these groups are their sense of purpose and the intention to complete further education. The third component of personal investment theory is the general social environment that includes close friends and family. McInerney et al. (2005) suggested that a

relationship exists between how much a child perceives this parents and peers provide support and academic achievement.

The social behavior model. Another important theory in this conceptual framework is Triandis' model of social behavior (McInerney, 1991; Triandis, 1977). Triandis designed this model to understand the intentions behind human behavior. Triandis studied factors that predict human behavior. By applying this social model in an educational framework, intention could be used as a variable to predict the behavior associated with achievement-oriented activities, such as academic achievement, continuation with schooling, or the dropout rate among immigrants for any population (McInerney, 1991, p. 294).

According to Triandis' model, three components were assigned to determine the behavioral intention of certain academic activities: (a) social factors, (b) affect attached to the behavior itself, and (c) value of the perceived consequences of the behavior (Triandis, 1977, p. 13). *Social factors* include the roles, beliefs, and norms that exist in a society and often have social consequences and pressures that could determine the individual's intention. *Affective factors* involve the emotion that is attached to the behavior, or the likes and dislikes of any behavior. The last factor includes the *value* behind certain behavior or *perceived* behavior. For example, individuals who consider several values important can be expected to be more flexible in interpreting the consequences of an act than those who consider only a few values important (p. 237).

In a comparison study by McInerney (1990) on Aboriginal, migrant, and Anglo school students, Triandis's model of social behavior was used to test variables that could predict the intention or the behavior behind the intention for students to complete or quit the 12 years of schooling required to graduate from high school. McInerney used several variables from

Triandis' social model, such as personal normative belief (PNB), perceived consequences (PC), and affect to act (AACT), concluding that the most significant prediction of the intention for the entire group was the PNB. This variable measures what a person thinks and learns about what is good and what is not good. PNB is what a student or a person believes to be a moral responsibility. The affect to the act, or the like and dislike of an experience, was the strongest predictor for leaving or not finishing high school.

Besides the social behavioral model, Triandis also introduced the concepts of individualist-oriented Western cultures and collectivist-oriented non-Western cultures. In his *Culture and Social Behavior* (1994), Triandis defined individualist culture, or what is most commonly thought of as Western industrialized culture, as loose, heterogeneous, and pluralistic. Within an individualist culture, people most likely disagree on specific cultural norms. They give priority to their personal goals regardless of whether or not their goals correspond with the goals of the majority, such as in a family. They seek power and control over others, and emphasize success and goals through personal achievement. Their values are pleasure, competition, independence, and emotional detachment from the group. Conversely, Triandis observed that non-western homogenous cultures are more collectivist oriented. In these non-Western cultures, people feel involved in the lives of in-group members; they share resources and dictate a behavior that matches the norms and the expectations of the group. They emphasize their interdependence and values that include obedience, duty, group harmony, security, and personalized relationships.

From the two cultural concepts of individualist and collectivist, it appears that most of the Arab people are collectivist-oriented and the society of those cultures stress and emphasize the group over the individual. The individual has major obligations and responsibilities towards their

immediate community (McInerney & Suleiman, 2006). For example, in collectivist cultures such as United Arab Emirates (UAE), a study was conducted by Khamis, Dukmak, and Elhouleris (2008) on middle and high school students, in which they found an association between social expectation and students' motivation to learn. Also, students' beliefs about learning, self esteem, and parental support all contributed significantly to students' motivation to learn. Another study by Chiu and Xihua (2007) found that in nations with more individualistic cultures, people are friendly to one another and perceive one another as more similar than different. Therefore they do not need the support and opportunities to learn from one another as in the collectivist society or culture. Furthermore, in those collectivist cultures, people tend to rely on their family members and friends to help them in their academic achievement and goals.

Goal theory. Goal theory is an important theory that can be used to explain the key motivation for academic achievement. This theory connects students' motivation to their academic achievement by considering the schools' and students' cultures. Goal theory is the product of several factors that reflect personal, family, and cultural values. Besides the students' schools and their cultures, there is the social dimension of the school and the influence of parents, teachers, and peers. The social dimension performs a specific function in influencing and guiding students in their academic and cognitive achievement (Suleiman & McInerney, 2006; Ames, 1992).

According to goal theory, two main goals are necessary for achievement: mastery and performance. The mastery goal for achievement focuses on the degree of student effort, or exceeding the effort as well as the intrinsic value of learning. The individual who seeks this goal intends to learn, acquire new skills, understand the work, and improve the level of the competition (McInerney, Roche, McInerney & Marsh, 1997). Conversely, performance goals

require little effort; involving competing with others, getting recognition for good grades, and valuing the extrinsic value of learning. Thus, mastery goals are self-referenced, with students competing with themselves, while performance goals are other-referenced, with students competing with others. Students may have both goals depending on the nature of the task, the school culture, and the social-educational context of the school (McInerney & Suleiman, 2006). Social dimensions of schooling, such as the influence of parents, peers, and teachers also may influence the types of goals that students have. Mastery and performance goals may interact to affect the academic achievement and learning process (McInerney, 2006).

Based on these two goals, mastery and performance, many students who are from different cultures and brought into western countries, such as the United States, may experience a conflict in their goals compared to schools in their native countries or their teacher's goals. With respect to the Arabic population, Iraqi and Lebanese students who have immigrated from the Middle East typically do not speak English in the home and their home culture is different from the school. Therefore, the school and the teachers should understand and recognize that these students may have different levels of achievement goals. These students may not reach the mastery level goals because of language and cultural discrepancies. Thus, the mismatch between the goals of the students and the goals set by the schools and teachers may have a substantial impact on their school achievement and school progress.

Empirical Studies

Several empirical studies have been conducted that address the three variables involved in this study: the value of education, parental support, and peer support. For each variable, this section of the chapter will examine what has been found by earlier researchers that has bearing on this study.

The value of education. No one denies the advantages of an education and related skills that can enable people to secure their places in the workforce or pursue additional educational through a university or college. Education also allows individuals to take advantage of the political power and increase social and economic privileges. Because individuals can attain these social results, they work as motivators for students to become academically successful (McInerney, 1992).

In the United States, education has long been held as a key to success. For many immigrant families, this belief is held strongly. Fuligni (1997) studied over 1,000 adolescent students from immigrant families with varied origins, and found that the value the immigrant families placed a high value on their children's success and correlates to children who are successful in school. Although he found differences among children from Latino, Asian, and European backgrounds, immigrant families were consistent in the importance they placed on their adolescents' education. The adolescents approached school with single-minded commitment, which was strengthened by the support they received from their parents and peers, regardless from where they had immigrated; Asia, Europe, or Latin America.

The Fuligni study provides a focus on the issues under consideration in this study. This study examined of a group of Iraqi students who had recently immigrated. While Fuligni explored the dynamics of valuing education, parental and peer support, he did not include the most recent group of immigrants, children from Middle Eastern countries, in his study.

Parental support. Most parents want to their children to receive a good education, but are not certain in how to help them. Parents' enthusiasm or seriousness about education is important in helping their children attain a good education. Parents should believe that education

can open opportunities for their children. Parents' positive attitudes toward education is important in motivating their children to achieve their goals in school.

According to Schaller, Rocha, and Barshinger (2007), "a parent's attitude in education is influential, but parents also need the tools to channel that academic optimism to educational success" (p. 351). Parents' support and involvement in their children's education is important for academic success. Many researchers advocate and emphasize the role of parents in schools and argue it is more important when for immigrants parents to be actively involved in their children's education. Children of the immigrant families are taught to believe that they are obligated to carry on their parents' goal of achieving the "American dream" (Bhattacharya, 2000).

In a study by Plunkett, Behuke, Sands, and Choi (2008) on immigrant families and the effect on the academic achievement, self report data were collected for families in four high schools in Los Angeles County. Three variables were used to measure parent involvement (i.e., parent monitoring, schoolwork help, and parental educational advice). The results of the study indicated that the parental monitoring was the strongest predictor of academic outcomes among the parent engagement variables. This finding might be relevant, particularly when children or adolescents perceive that their parents are monitoring their work in school and their overall activity. Children may behave responsibly and avoid the unacceptable behavior. Parent monitoring also could have a positive side effect for the children. Their children may be motivated to perform in school to make their parents proud.

In another study on the effects of parenting on children's academic performance among different ethnic groups, Plunkett and Bamaca-Gomez (2003) conducted a study on 273 adolescents whose parents were born in Mexico. A positive relationship was found between mothers' and fathers' behaviors (e.g., ability to help, monitor, and support) and adolescents'

academic motivation. The study also found that parent support can help develop adolescents' self-esteem which can be a motivator of high academic performance.

Bhattacharya (2000) conducted a study using South Asian children who had immigrated to the United States with their parents and who were at risk of dropping out of school. Bhattacharya (2000) concluded that parental encouragement was essential for these children to succeed.

According to Schaller, Rocha and Barshinger (2007), parents' attitude in education is influential. The parents' involvement in their child's education can improve academic achievement and enhance their overall success in school, regardless of the parents' educational backgrounds. Schaller's study explained that the Mexican mothers who lacked a strong academic background had a vision and commitment toward academic achievement. However, the study emphasized that the mother's vision and commitment needed to be combined with the reality of seeking assistance when becoming involved in their child's education. While reviewing the empirical studies on parent involvement in their children's education, none of the published studies included Arabic adolescents among their participants.

Peer support. Peers are individuals, friends, and acquaintances who are within the same age range or have similar social status. Peers may range from best friends to school mates. Students usually are influenced by what their peers think and value. Indeed, peer values could change the students' perspectives and definitions of academic and social success (Gibson, Gandara & Koyama, 2004).

In a study, Berndt (1999) found that the characteristics of the friendship usually determine the direction of its influence. For example, students may be disruptive with friends

who are disruptive, and improve their academic performance with those friends who have high grades.

Peers play an even greater role in shaping academic values and effects of the schooling for immigrant families. Parents of the immigrants often lack the basic knowledge of United States school systems and the educational background needed to help their children succeed in schools (Gibson, Gandara, & Koyama, 2004). Peers can help fill this gap and provide information to parents about their children's educational experiences.

Additionally, Schneewies and Winter-Ebmer (2007) found that children learn from their class and school mates as well as their teachers. Notably, two channels of learning occur among students: direct and indirect. When students influence and help each other directly by talking about concepts, techniques, and perspectives, new knowledge can be created among the peer group. Indirect learning occurs when their peers act as role models, influencing the immigrant students socially, as well as academically.

Finally, Behnke, Gonzalez, and Cox (2010) conducted indepth surveys of 501 Latino students in North Carolina Public Schools to determine which factors contribute to Latino youth dropping out of high school in the United States. Behnke et al. found that family, school peers, and policies were factors associated with dropping out of school, with peer pressure noted as one of the major factors for Latino youth who drop out of school. Research has indicated that youth with friends who have dropped out of school are much more likely to drop out prior to graduation.

Thus, the theoretical framework, as well as findings from several empirical studies, suggested that the hypotheses presented in this study merited consideration, especially in reference to recently immigrating populations—in particular, Iraqi students. Chapter 3 presents

the methods used to describe the hypotheses, discuss the research design, the data collection, and proposed data analysis.

CHAPTER 3

METHODOLOGY

The general belief among Arab educational community is that Iraqi students, who arrived as refugees in the U.S., usually do not perform well at school. This research examined academic achievement of this group in the area of science. Three variables were used as predictors of Iraqi students' achievement in school. These new arrivals play vital and valid roles in influencing American society depending on their academic success. At the time of this study, no published research was found on the issue of Iraqi students academic success and failure. The purpose of this chapter is to describe the methods that were used to investigate and test the research hypotheses as stated in Chapter 1. The methodology is described in relation to the following aspects of this study: the factors that are related to the achievement of the Iraqi students in science, and how these factors could be used as predictors for implementing future curricular or remedial programs.

Restatement of the Problem

The primary concern of schools' instructional staff and administrators is to engage newcomer bilingual students and their parents in the process of education and motivate them to achieve tangible results. But how to gain the support and participation of parents in school and in the general education of their children remains a great challenge. The relatively poor student achievement experienced by these Iraqi students can be attributed to the students' lack of value for education and poor support by parents and peers. Thus, the research problem of this study is to investigate how parents', peers' and students' value of education might influence the academic achievement of Iraqi-high school students in science.

Research Design

The research design used in this study is nonexperimental and descriptive. This type of research design is used when no manipulation is provided to the independent variable and the participants are not subjected to either a treatment or intervention. The primary data collection tool for this study was surveys completed by students at one high school in a suburban area.

Research Questions and Hypotheses

Research Question #1: Is there a relationship between a student's value of education and his/her academic achievement in science?

H₁: A student' value of education has a significant positive relationship with student achievement in science.

H₀₁: A student's value of education has no significant relationship with student achievement in science.

Research Question #2: Is there a relationship between parental support and student achievement in science?

H₂: Parental support has a significant positive relationship with students' academic achievement in science.

H₀₂: Parental support has no significant relationship with students' academic achievement in science.

Research Question #3: Is there a relationship between peer support and student achievement in science?

H₃: Peer support has a significant positive relationship with student achievement in science.

H₀₃: Peer support has no significant relationship with students' academic achievement in science.

Setting for the Study

The study was conducted in one of the three high schools in a large Midwestern suburban school district, during the 2013-2014 academic year. Each of the high schools has a population between 1700 and 2400 students, in grades 9 to 12. The student population in the three high schools is ethnically diverse, with Arab American, European American, Romanian, Hispanic, Albanian, and African American students represented. The high schools are located in one of the largest Arab communities outside of the Middle East. Approximately 95% of the students in the school selected for the study is of Arab ancestry. The school is ethnically diverse, with the majority of students Arab-Americans, including Lebanese, Iraqi, Yemeni, Syrian, Egyptian, Palestinian, and Jordanian. Most Iraqi immigrants or first-generation students have a first language that they may be able only to speak or understand. However, they may not be able to read or write that language.

Participants

The population of the study are Iraqi students at one of the three high schools. These students are in the ninth, tenth, eleventh, and twelfth grades in general and bilingual education classes. The criteria for inclusion in the study was that students had to be immigrant or first-generation Iraqi students. Students of other ethnic groups were excluded from the study. As the survey was available in both Arabic and English, ability to speak and read English was not a concern for this study.

Power Analysis. To determine the appropriate sample size, G*Power 3.1 was used (Faul, Erdfelder, Buchner, & Lang, 2009). The criterion used in this analysis included alpha = .05 and

effect size = .25. The outcome of the analysis indicated that a sample of at least 84 students was needed to achieve a power of .80. Figure 1 presents the graph of the power analysis.

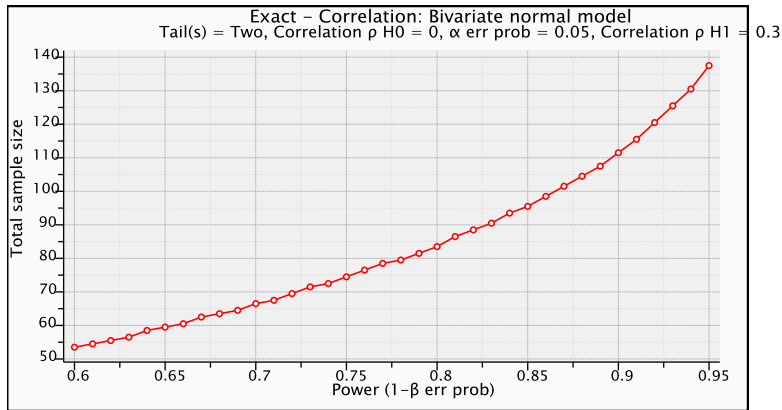


Figure 1: Power Analysis for Study

Instrument

Selected subscales from The Facilitating Conditions Questionnaire (See Appendix A) was used in this study. The three subscales were part of a larger self-administered questionnaire used by McInerney, Marsh, and Yeung (2003). This instrument has been used in several cross-cultural settings (McInerney, 1997).

The 24 items on the Facilitating Conditions Questionnaire includes items that measured students perceptions of family support, peer support and the positive value of education. Students rated each item using a 5-point Likert scale ranging from 1 for strongly agree to 5 for strongly disagree. Eight items addressed each of the three variables. Some of the questions were negatively worded requiring the responses to be reverse coded when being entered into the SPSS data file.

Reliability and validity. The content validity of the items on the questionnaire was established by McInerney, Roche, McInerney, & Marsh (1997) as it has been used in several cross-cultural studies previously (1997). He conducted confirmatory factor analysis with 277 elementary students and 615 students in grades 7-12. The Value of Education, Peer (positive and negative), and Parent (positive and negative) were found to be distinct factors, all of which correlated with academic achievement. In addition, the factors were invariant across elementary and high school groups. These findings supported convergent validity, discriminant validity, and invariance of the FCQ scales (McInerney, Dowson, & Yeung, 2005).

After data collection was complete and data was entered into the statistical analysis software program, Cronbach's Alpha (Tavakol, 2011) was computed for the instrument to determine its internal consistency as a measure of reliability. The obtained alpha coefficients were .83 for value of education, .58 for parent support, and .80 for peer support. The alpha coefficients indicate low to moderate internal consistency for the three subscales.

Readability. The survey was tested for readability using the Flesch readability index. The outcome of this analysis provided support that the survey instructions and items were written at a 4.2 grade level, indicating that students in high school should have little difficulty with reading and understanding the items on the survey.

Demographic questions. The demographic survey gathered information about the motivational goals of students. Data on the students' sociocultural and demographic characteristics were obtained, including place of birth of students and parents, language spoken at home, parental occupation, level of education of parents, and other cultural background data.

Data Collection

After receiving approval from the Wayne State University Institutional Review Board (IRB), the researcher began the data collection process. Informed consent forms in both English and Arabic were mailed to the homes of students who met the criteria for inclusion in the study. The informed consent form provided parents with information about the study, provided assurances of confidentiality of all information provided by the students, and assured that participation in the study was voluntary. The informed consent form also obtained permission to access the students' records to obtain their grades in their science courses. The parents were asked to return the informed consent to the school within two weeks.

The researcher met with the students after school whose parents had signed and returned the informed consent forms. The students were separated into two groups to complete the surveys. At these meetings, the researcher distributed the adolescent assent form to the students. They were asked to read the form and ask any questions they had about the study. After answering the questions, the students were instructed to sign the form if they were willing to participate in the study. They were then told to turn one copy of the assent form into the researcher and maintain the second copy for their records. Ninety students returned the assent forms.

The researcher then distributed the survey to the students. Students were asked to write their students' identification number and a code number assigned by PI on each survey. The list of the ID and code numbers were sent to the counselors to provide their science grades for the two semesters. The students were asked to read the items carefully and respond honestly. They were asked to refrain from discussing the survey items with other students. The students

completed the survey in approximately 20 minutes. After returning the surveys to the researcher, the students had pizza.

The PI had the code numbers list and the science grades. The master list of the ID numbers was maintained in a locked office desk at the researcher's home. The list was shredded after the data analyses and dissertation project was completed.

The investigator is planning to share the data results with the district. He will have a brief meeting with the evaluation department in the district and the bilingual department in the targeted school to discuss the result of this research for the benefit of the students, parents, and the school administration.

Data Analysis

IBM-SPSS ver. 22 was used to analyze the data collected on the survey. The results of the statistical analysis were presented in three sections. Descriptive statistics, including frequency distributions and measures of central tendency and dispersion were used in the first section to describe the sample. Measures of central tendency and dispersion were used in the second section to summarize the scaled variables and provide an intercorrelation matrix that showed the relationships among the variables. Inferential statistical analyses were used in the final section of the chapter to address each research question and test the associated hypotheses. A criterion alpha level of .05 was used in making decisions regarding the statistical significance of the findings. The statistical analyses that were used to address each of the research questions and associated hypotheses are presented in Table 1.

Table 1

Statistical Analyses

Research Question and Hypothesis	Variables	Statistical Analysis
<p>1. Is there a relationship between a student's value of education and his/her academic achievement in science?</p> <p>H₁: A student's value of education has a significant positive relationship with student achievement in science.</p> <p>H₀₁: A student's value of education has no significant relationship with student achievement in science.</p>	<p><u>Dependent Variable</u> Student achievement in science</p> <p><u>Independent Variable</u> Students' value of education</p>	<p>Pearson product moment correlations will be used to determine the strength and direction of the relationship between student achievement in science and their value of education</p>
<p>2. Is there a relationship between parental support and student achievement in science?</p> <p>H₂: Parental support has a significant positive relationship with students' academic achievement in science.</p> <p>H₀₂: Parental support has no significant relationship with students' academic achievement in science.</p>	<p><u>Dependent Variable</u> Student achievement in science</p> <p><u>Independent Variable</u> Parental Support</p>	<p>Pearson product moment correlations will be used to determine the strength and direction of the relationship between student achievement in science and their perceptions of parent support</p>
<p>3. Is there a relationship between peer support and student achievement in science?</p> <p>H₃: Peer support has a significant positive relationship with student achievement in science.</p> <p>H₀₃: Peer support has no significant relationship with students' academic achievement in science.</p>	<p><u>Dependent Variable</u> Student achievement in science</p> <p><u>Independent Variable</u> Peer Support</p>	<p>Pearson product moment correlations will be used to determine the strength and direction of the relationship between student achievement in science and their perceptions of peer support.</p>

CHAPTER 4

FINDINGS

Introduction

The findings from the data analysis that were used to describe the sample and address the research questions are presented in this chapter. In the first section of the chapter, frequency distributions and measures of central tendency and dispersion are used to provide a description of the sample. Descriptive statistics are used in the second section of the survey to provide baseline information on the scaled variables. Inferential statistical analyses were used to address the research questions and test the associated hypotheses in the final section. Results of these analysis are included in the third section of the chapter.

The schools' instructional staff and administrators are focused on engaging newcomer bilingual students and their parents in the process of education and motivate them to achieve tangible results. But how to gain the support and participation of parents in school and in the general education of their children remains a great challenge. Therefore, contributing factors for poor school achievement by Iraqi students is the lack of value placed on education by the students and poor support by parents and peers. Thus, the research problem of this study is to investigate how parents', peers' and students' value of education might influence the academic achievement of Iraqi-high school students in science.

Description of the Sample

Of the 92 students who returned parent informed consent forms, 90 completed the survey. The students provided their age, gender, and grade level on the demographic survey. See Table 2 for the results of these analyses.

Table 2

Frequency Distributions – Students' Personal Characteristics (N = 90)

Students' Personal Characteristics	Number	Percent
Age		
14	11	12.2
15	36	40.0
16	20	22.2
17	17	18.9
18	4	4.4
19	2	2.2
Gender		
Female	52	57.8
Male	38	42.2
Grade Level		
9 th	43	47.8
10 th	24	26.7
11 th	19	21.1
12 th	4	4.4

The largest group of students (n = 36, 40.0%) reported their age as 15 years, with 20 (22.2%) indicating they were 16 years of age. Seventeen (18.9%) students were 17 years, with 11 (12.2%) reporting their age as 14. Four (4.4%) of the students were 18 years and 2 (2.2%) were 19 years of age. The majority of the participants were female (n = 52, 57.8%), with 38 (42.2%) reporting their gender as male. Forty-three (47.8%) of the students were in the ninth grade, with 24 (26.7%) indicating they were in the tenth grade. Nineteen students reported they were in the eleventh grade and 4 (4.4%) were in the twelfth grade.

The students were asked to indicate the language that was spoken in their homes. Frequency distributions were used to summarize their responses to this question. See Table 3 for the results.

Table 3

Frequency Distributions – Language Spoken in Home (N = 90)

Language Spoken in Home	Number	Percent
Only Arabic	6	6.7
Mostly Arabic	14	15.6
English and Arabic	56	62.2
Mostly English	13	14.4
Only English	1	1.1
Total	90	100.0

The majority of the students (n = 62.2%) reported they spoke both English and Arabic in their homes. Fourteen (15.6%) reported they spoke mostly Arabic and 13 (14.4%) indicated they spoke mostly English in their homes. Six (6.7%) students spoke only Arabic and 1 (1.1%) student spoke only English in their homes.

The students were asked to indicate their parents' education and types of occupations. Table 4 presents the results of the frequency distributions used to summarize the students' responses to these questions.

Table 4

Frequency Distributions – Parents’ Education and Occupations (N = 90)

Education and Occupation	<u>Parent</u>			
	<u>Father</u>		<u>Mother</u>	
	N	%	N	%
<u>Education</u>				
Elementary – 8 th grade	10	11.4	15	17.6
Some high school	20	22.7	16	18.8
High school graduate	11	12.5	21	24.7
Vocational training	5	5.7	3	3.5
College education	42	47.7	30	35.3
Missing	2		5	
<u>Occupation Type</u>				
Manual labor/factory	34	39.5	2	2.4
Professional/business	24	27.9	8	9.4
Secretarial/office worker	9	10.5	6	7.1
Homemaker	0	0.0	20	23.5
Unemployed	19	22.1	49	57.6
Missing	4		5	

The largest group of fathers (n = 42.47.7%) had completed a college education, with 5 (5.7%) students indicating their fathers had vocational training. Thirty (35.3%) students reported their mothers had obtained a college education, with 3 (3.5%) reporting their mothers had completed vocational training. Ten (11.4%) students reported their father’s had elementary through grade 8 educations, with 15 (17.6%) indicating their mothers had this level of education. Data were missing for 2 fathers and 5 mothers regarding their level of education.

The largest group of students (n = 34, 39.5%) reported their fathers worked in manual labor/factory jobs, with 24 (27.9%) working as professionals or in business. Nineteen (22.1%) fathers were unemployed at the time of the study. The majority of students (n = 49, 57.6%) reported their mothers were unemployed, with 20 (23.5%) indicating their mothers were homemakers. Responses were missing for 4 fathers and 5 mothers regarding their occupation type.

The students were asked to respond to items regarding their families. Their responses to these questions are presented in Table 5.

Table 5

Frequency Distributions – Family Characteristics (N = 90)

Family Characteristics	Number	Percent
Living status		
Mother and father	71	81.7
Mother only	11	12.6
Father only	3	3.4
Other Relatives	2	2.3
Missing	3	
Number of siblings		
One	8	9.2
Two	14	16.1
Three	20	23.0
Four or more	45	51.7
Missing	3	
Birth order		
Oldest or only child	26	29.9
Middle child	44	50.6
Youngest child	17	19.5
Missing	3	
Strongest culture in home		
Iraqi	68	78.2
Arabic, but not Iraqi	10	11.5
American	8	9.2
Other	1	1.1
Missing	3	
Born in the United States		
Yes	56	64.4
No	31	35.6
Missing	3	

The majority of students (n = 71, 81.7%) indicated they were living with both their mother and father, while 11 (12.6%) reported living with their mother only. Three students were living with their father only and 2 (2.3%) were living with other relatives. Three students had missing values on this question.

Most of the students ($n = 45$, 51.7%) had four or more siblings, with 20 (23.0%) reporting they had three siblings. Eight (9.2%) students had one sibling and 14 (16.1%) had two siblings. This question was not answered by three students.

The majority of students ($n = 44$, 50.6%) reported they were middle children and 26 (29.9%) were oldest or only children. Seventeen (19.5%) of the students indicated they were the youngest child in their families. Three students did not provide a response to this question.

The greatest number of students ($n = 68$, 78.2%) indicated that the Iraqi culture was the strongest culture in the home, with 10 (11.5%) indicating that Arabic, but not Iraqi culture was the strongest culture in the home. Eight (9.2%) students indicated the American culture was the strongest culture in their homes. Three students did not answer this question.

The majority of the students ($n = 56$, 64.4%) had been born in the United States. Thirty-one (35.6%) had been born outside of the United States. Three students had missing values on this question.

The students were asked about their science classes and inclusion in English language learner (ELL) classes. Table 6 presents results of the analyses for these questions.

Table 6

Frequency Distributions – Science and English Language Learner Classes (N = 90)

Science and English Language Learner Classes	Number	Percent
Science Classes During Current Semester		
Biology	47	52.2
Chemistry	40	44.4
Physics	2	2.2
Earth Science	1	1.1
Type of Program		
English Language Learner	19	21.1
Regular Education Program	71	78.9

The majority of the students ($n = 47$, 52.2%) had completed biology classes, with 40 (44.4%) reporting they had a chemistry class. Two (2.2%) students were in a physics class and 1 (1.1%) was taking an earth science class. Nineteen (21.1%) students reported they were in ELL classes, with 71 (78.9%) reporting they were in regular education programs.

The students' science grades in the fall and winter semesters for the 2013-14 academic years were obtained from their school records. A 12-point scale was used, with a 1 indicating an E or failure and 12 indicating an A. Descriptive analyses were used to summarize the students self-reported academic achievement in science. The results of this analysis are presented in Table 7.

Table 7

Descriptive Statistics – Science Grades, Fall and Winter Semesters 2013-14 Academic Year

Academic Year	N	Mean	SD	Median	Range	
					Minimum	Maximum
Fall	90	5.07	3.42	5.00	1.00	12.00
Winter	90	5.64	3.66	5.00	1.00	12.00
Average	90	5.36	3.35	5.00	1.00	12.00

The mean science grade for students in the Fall semester was 5.07 ($SD = 3.42$), with a median of 5.00. The science grades ranged from 1.00 to 12.00. In the Winter semester academic year, students had a mean science grade of 5.64 ($SD = 3.66$), with a median of 5.00. Science grades ranged from 1.00 to 12.00. The science grades for the two years had a mean of 5.36 ($SD = 3.35$). The range of grades was from 1.00 to 12.00, with a median score of 5.00.

Description of the Scaled Variables

The students' responses on the Facilitating Conditions Questionnaire (McInerney, Marsh, & Yeung, 2003) were scored using the authors' protocol. Three subscales, value of education, parent support, and peer support, were summarized using descriptive statistics. Table 8 presents results of these analyses.

Table 8

Descriptive Statistics – Facilitating Conditions Questionnaire

Subscale	N	Mean	SD	Median	Range	
					Minimum	Maximum
Value of education	90	4.35	.70	4.63	1.75	5.00
Parent support	90	3.52	.67	3.50	2.00	5.00
Peer support	90	3.99	.77	4.19	2.38	5.00

The subscale measuring value of education had a mean score of 4.35 (SD = .70), and median score of 4.63. The range of actual scores was from 1.75 to 5.00. The mean score for the parent support subscale was 3.52 (SD = .67), with a median score of 3.50. Actual scores ranged from 2.00 to 5.00. The peer support subscale had actual scores ranging from 2.38 to 5.00 and a median of 4.19. The average score for peer support was 3.99 (SD = .77). The three subscales could have possible scores ranging from 1.00 to 5.00. Higher scores on these subscales were indicative of more positive attitudes regarding the value of education, parent support, and peer support.

Research Questions and Hypotheses

Inferential statistical analyses were used to address the three research questions and test the associated hypotheses developed for the study. All decisions on the statistical significance of the findings on the inferential analyses were made using a criterion alpha level of .05.

Research Question #1: Is there a relationship between a student's value of education and his/her academic achievement in science?

H₁: A student' value of education has a significant positive relationship with student achievement in science.

H₀₁: A student's value of education has no significant relationship with student achievement in science.

Pearson product moment correlations were used to test the direction and strength of the relationship between students' value of education and their grades in science for the Fall and Winter semesters in the 2013-14 academic year. Results of this analysis are presented in Table 9.

Table 9

Pearson Product Moment Correlations: Value of Education and Achievement in Science

Achievement in Science	r	p
Fall semester	.30	.004
Winter semester	.12	.276
Average	.22	.041

A statistically significant relationship was found between the value of education and achievement in science for Fall semester ($r = .30$, $p = .004$). In contrast, the correlation between the value of education and achievement in science for the Winter semester ($r = .12$, $p = .276$) was not statistically significant. The average science achievement for the two years was significantly

related to students' value of education ($r = .22$, $p = .041$). The positive direction of the relationships indicated that students who placed a higher value on education were more likely to have higher achievement in science.

Research Question #2: Is there a relationship between parental support and student achievement in science?

H_2 : Parental support has a significant positive relationship with students' academic achievement in science.

H_{02} : Parental support has no significant relationship with students' academic achievement in science.

Pearson product moment correlations were used to test the relationships among perceptions of parent support and academic achievement in science. The findings for this analysis are presented in Table 10.

Table 10

Pearson Product Moment Correlations: Parental Support and Achievement in Science

Achievement in Science	r	p
Fall Semester	.23	.028
Winter Semester	.11	.286
Average	.18	.089

The correlation between parental support and achievement in science for the Fall semester was statistically significant ($r = .23$, $p = .028$). The relationship between achievement in science and parental support for the Winter semester was not statistically significant ($r = .11$, $p = .286$). The results of the correlation between the average achievement in science and parental support was not statistically significant ($r = .18$, $p = .089$). The positive direction of the

relationships between parent support and academic achievement in science provided support that higher scores for parent support were associated with higher academic achievement in science.

Research Question #3: Is there a relationship between peer support and student achievement in science?

H₃: Peer support has a significant positive relationship with student achievement in science.

H₀₃: Peer support has no significant relationship with students' academic achievement in science.

The relationships between peer support and academic achievement in science were tested using Pearson product moment correlations were used. Table 11 presents findings for these analyses.

Table 11

Pearson Product Moment Correlations: Peer Support and Achievement in Science

Achievement in Science	r	p
Fall semester	.49	<.001
Winter semester	.32	.002
Average	.43	<.001

A statistically significant correlation was obtained on the relationship between peer support and academic achievement in science for the Fall semester ($r = .49$, $p < .001$). The results of the correlation between academic achievement in science for the Winter semester and peer support was statistically significant, ($r = .32$, $p = .002$). The relationship between the average academic achievement in science and peer support was statistically significant, ($r = .43$, $p <$

.001). These findings indicated that higher scores for peer support were associated with higher academic achievement in science.

Ancillary Findings

The students' perceptions of the value of education, parental support, and peer support were compared by the place of birth (in the United States or outside of the United States) using *t*-tests for independent samples. The results of these analyses are included in Table 12.

Table 12

t-Tests for Independent Samples: Facilitating Conditions by Place of Birth

Subscale	N	Mean	SD	DF	t-Value	Sig
Value of Education						
Born in United States	56	4.44	.57	85	1.42	.158
Born outside of United States	31	4.22	.88			
Parental Support						
Born in United States	56	3.61	.68	85	1.57	.119
Born outside of United States	31	3.38	.65			
Peer Support						
Born in United States	56	4.19	.73	85	2.70	.008
Born outside of United States	31	3.75	.73			

One statistically significant result for peer support was obtained on the *t*-tests for independent samples, $t(85) = 2.70$, $p = .008$. The participants who had been born in the United States ($M = 4.19$, $SD = .73$) had significantly higher scores for peer support than participants who had been born outside of the United States ($M = 3.75$, $SD = .73$). The other two subscales, value of education and parental support did not provide any evidence of statistically significant differences by place of birth.

Students' academic achievement in science for the Fall and Winter semesters in the 2013-14 academic year and the average science grades were compared between students who were

born in the United States and those who were born outside of the United States using t-tests for independent samples. See Table 13 for the results of these analyses.

Table 13

t-Tests for Independent Samples: Academic Achievement in Science by Place of Birth

Academic Achievement in Science	N	Mean	SD	DF	t-Value	Sig
Fall semester						
Born in United States	56	5.41	3.44	85	.96	.342
Born outside of United States	31	4.68	3.40			
Winter semester						
Born in United States	56	5.66	3.78	85	-.18	.861
Born outside of United States	31	5.81	3.54			
Average Science Grade						
Born in United States	56	5.54	3.44	85	.39	.698
Born outside of United States	31	5.24	3.25			

The comparison of academic achievement in science between students born in the United States and those born outside of the United States provided no evidence of statistically significant differences. These findings indicated that regardless of the place of birth, students had similar academic outcomes in science courses.

A multivariate analysis of variance (MANOVA) was used to determine if the three subscales measuring facilitating conditions differed by grade and gender. Table 14 provides the findings for this analysis.

Table 14

Multivariate Analysis of Variance: Facilitating Conditions by Grade and Gender

	Hotelling's Trace	F	DF	Sig	η^2
Grade in School	.17	2.23	6, 162	.043	.08
Gender	.04	1.01	3, 82	.394	.04
Grade in School x Gender	.11	1.51	6, 162	.177	.05

The results of the MANOVA provided evidence of a statistically significant difference on the three subscales measuring facilitating conditions by grade, $F(6, 162) = 2.23, p = .043, \eta^2 = .08$. The comparison of the three subscales by gender was not statistically significant, $F(3, 82) = 1.01, p = .394, \eta^2 = .04$. The interaction effect between grade and gender was not statistically significant, $F(6, 162) = 1.51, p = .177, \eta^2 = .05$. The effect sizes for the three comparisons were low, indicating little practical significance in the findings. To determine which of the subscales of facilitating conditions was contribute to the statistically significant findings for grade level, the between subjects effects were examined. See Table 15 for the findings on this analysis.

Table 15

Between Subject Effects: Facilitating Conditions by Grade

Subscale	Sum of Squares	DF	Mean Square	F Ratio	Sig	η^2
Value of Education	1.57	2, 84	.79	1.65	.198	.04
Parent Support	.28	2, 84	.14	.33	.720	.01
Peer Support	5.16	2, 84	2.58	4.65	.012	.10

One subscale, peer support, differed significant among students at different grade levels, $F(2, 84) = 4.65, p = .012, \eta^2 = .10$. The remaining two subscales, value of education and parent support were not contributing to the statistically significant findings for facilitating conditions by

grade level. To further examine these differences, Scheffé a posteriori tests were used to compare all possible pair-wise comparisons for peer support among the three grade levels. Table 16 presents the descriptive statistics for the three subscales and the results of the Scheffé tests.

Table 16

Descriptive Statistics: Facilitating Conditions by Grade and Gender

Subscale	Number	Mean	SD
<u>Grade Level</u>			
Value of Education			
Ninth grade	43	4.18	.79
Tenth grade	24	4.45	.67
Eleventh/Twelfth Grade	23	4.55	.45
Parent Support			
Ninth grade	43	3.55	.70
Tenth grade	24	3.49	.61
Eleventh/Twelfth Grade	23	3.49	.68
Peer Support			
Ninth grade	43	3.77a	.76
Tenth grade	24	4.05	.72
Eleventh/Twelfth Grade	23	4.34a	.72
<u>Gender</u>			
Value of Education			
Female	51	4.30	.81
Male	39	4.41	.52
Parent Support			
Female	51	3.56	.62
Male	39	3.47	.73
Peer Support			
Female	51	4.03	.77
Male	39	3.94	.77
<u>Grade x Gender</u>			
Value of Education			
Ninth grade x Female	30	4.12	.86
Ninth grade x Male	13	4.32	.61
Tenth grade x Female	9	4.32	.96
Tenth grade x Male	15	4.53	.45
Eleventh/Twelfth Grade x Female	12	4.72	.35
Eleventh/Twelfth Grade x Male	11	4.36	.50
Parent Support			
Ninth grade x Female	30	3.47	.68
Ninth grade x Male	13	3.74	.73
Tenth grade x Female	9	3.48	.29
Tenth grade x Male	15	3.50	.76
Eleventh/Twelfth Grade x Female	12	3.84	.56
Eleventh/Twelfth Grade x Male	11	3.11	.59

Subscale	Number	Mean	SD
Peer Support			
Ninth grade x Female	30	3.81	.74
Ninth grade x Male	13	3.66	.81
Tenth grade x Female	9	4.13	.75
Tenth grade x Male	15	4.01	.72
Eleventh/Twelfth Grade x Female	12	4.51	.68
Eleventh/Twelfth Grade x Male	11	4.16	.76

Subscales sharing a subscript indicate a statistically significant difference based on results of Scheffé a posteriori tests

A statistically significant difference for peer support was found between the ninth grade students ($M = 3.77$, $SD = .76$) and eleventh/twelfth grade students ($M = 4.34$, $SD = .72$). The scores for peer support indicate that peer support becomes more important to students as they move from ninth grade to eleventh/twelfth grades. The remaining pairwise comparisons provided no evidence of statistically significant differences.

Summary

This chapter has presented a profile of the participants and addressed the research questions and tested the associated hypotheses. Chapter Five provides a discussion of the findings along with implications for practice and further research.

CHAPTER 5

DISCUSSION

High school instructional staff and administrators want to engage newcomer bilingual students and their parents in the process of education and motivate them to achieve tangible results. Gaining parent support and participation in their children's education remains a challenge. Therefore, students' lack of value of education and poor support from parents and peers are considered major causes for the relatively poor academic performance of Iraqi students. Thus, the research problem of this study was to investigate parents', peers' and students' value of education that might influence Iraqi-high school students' academic achievement in science. The purpose of this research was to examine the relationship between the parents, peers, and value of education of the Iraqi high school students and their academic achievement in science. A discussion of the results of this study is presented in this chapter. These findings or the results of this research in connection with the previous research are also examined. Furthermore, some recommendations also were addressed to provide additional empirical findings on creating effective educational outcomes for immigrant students from the Middle East.

Participants in this study were 90 Iraqi students in a single high school. The students ranged in age from 14 to 19 years of age, with the majority reporting their gender as female. The students were in the ninth through twelfth grades attending high school in a suburb adjacent to a large metropolitan area. Most students indicated that both English and Arabic were spoken in their homes.

The parents' educational levels ranged from elementary school to completed college educations. However, occupation types for the fathers were generally manual labor/factor or professional/business. The mothers typically were homemakers or unemployed. Most of the

students were living in intact homes with both their mothers and fathers. They had four or more siblings and were middle children. They indicated that the Iraqi culture was the strongest culture in the home. The majority had been born in the United States.

The students were enrolled in science classes during the Fall and Winter semesters in the 2013-14 academic year. The science classes in which they were enrolled included: biology, chemistry, physics and earth science. The majority of students were in regular education programs, with some still enrolled in English language learner classes. Using a scale from 1 to 12, with 1 indicating failure and 12 indicating all As, the students had a mean science grade of 5.07 (SD = 3.42) for the Fall semester academic year and 5.64 (SD = 3.66) for the Winter semester. The average science grade for the students was 5.36 (SD = 3.35) indicated most were in the C to C+ range.

Discussion of hypothesis 1: The first hypothesis stated that there is a correlation between the value of education for the Iraqi students and their science achievement. The value of education as a factor positively and significantly correlated with the science achievement as is calculated from Pearson product moment correlations. The result of this analysis supported research McInernay and Suliman (2006), in which they used the same survey in measuring the value of education. They conducted their study on the Lebanese-background students in southwestern Sydney using the Facilitating Conditions Questionnaire (FCQ) as one of the survey measurements, along with the Inventory of School Motivation (ISM). The negative and positive values of education were among the FCQ variables. When multiple regression analyses were conducted to find the predictive variable for the Lebanese background students on their academic achievement in English and science, the facilitating conditions variables had the highest variance for science. Furthermore, the study concluded that among all the variables or factors of the

facilitating conditions, the positive family support and the value of education stand as good indicators for students' success and achievement in school.

Fuligni published research on immigrant families and their school achievement. Fuligni (1997) conducted a study on 1,100 adolescents of Latino, Asian and European background and found a significant correlation between their achievement and how they value education.

This finding also is somewhat consistent and comparable with previous published research (Sue & Okazaki, 2009) in which Asian American achievement as a phenomenon is attributed to Asian families' valuing education as a cultural asset. The authors noted that among practices that inspire educational achievement was respect for supporting education. Additionally, in their article about this group's achievement, Asian Americans believed that school has a connection with life.

Wei-Cheng (1997), studied the influence of Asian immigrant and Asian American parents on their high school students, he explained that the value of education inspired by the children's parents had the most effect on their school achievement than any other factor, and regardless of their duration in the new culture. The author concluded that the success of Asian students and American immigrant students start with values they carry from their family to the school they attend. Finally, the author added that the value of education which transfers from their parents who believes in effort more than ability.

Finally, in a study about the value of education and how it could be an effective factor for immigrant children in their achievement in school, Rumbant and Portes (2001) in their book titled "Children of Immigrants in America" find that Mexican- origin children and their immigrant parents valued education much more than immigrants from Europe, but the difficult

years that they face in their early adulthood prevent them from converting those values effectively to support their education (pg 80).

Discussion of Hypothesis 2. The second hypothesis for this research states that there is a significant relationship between the parents' support for the Iraqi high school students and their achievement in science. Parent support was measured by FCQ as one of the three scales, and the science achievement was measured by the final science grades of two semesters. Based on the findings, there was no statistically significant relationship between the parents' support and the students' achievement in science. In other words, the parents as a factor correlate weakly ($r = 0.0181$) with the students' average in science. This finding is consistent with other studies, especially those related to immigrant families, or newly arrived immigrants. Suarez-Orozco, Pimentel and Martin (2009) explain in their study on a total of 407 newcomers that within five years, many immigrant parents face difficulties in helping their kids academically, among those, language. Also, the parents usually work long hours, and this is disadvantageous for helping and encouraging academic success. Consequently, although parental involvement in students' achievement is vital in general, one should be aware that when it comes to newcomers, this involvement and its outcomes in secondary-level education can be limited.

In another study by Wei-Chang Mau (1997) which was conducted on Asian immigrants, Asian Americans and White Americans, the researcher stated that parental involvement does not always have a positive result on the students' achievement, especially at the high school level compared with elementary level. The study concluded that the value of education the students carry with them from their parents is more effective in terms of academic success than their parent's involvement.

Rumbant and Portes (2001) found in their study of Mexican-American children that they lack the support or the involvement of their parents. The study explained that the parents do carry the value of education; however, the difficulties they face such as long hours and adjusting to a new culture prevent them from showing their support. Moreover, the authors concluded that those parents have the same goals and desires to help their kids academically as any immigrant European family.

Finally, in the study by McInerney and Suliman (2006) on Lebanese immigrants in Australia, they found the contrary of their hypothesis on parental support, which was no significant relationship between the families' support and the students' grades in English and science, as there was not much support from the families. Interestingly, this population is similar to our research population, the Iraqis. They have similar cultural, political and educational backgrounds, and both populations came to this country due to civil and gulf wars, with most of them expecting to return to their country when the war is over. Additionally, the same FCQ survey used for our study was also used in accordance and connection with the work of McInerney and Sulamine (2006).

Discussion of Hypothesis 3. The third hypothesis stated that there is a statistically significant relationship between peer support and achievement in science for the Iraqi students as measured by the FCQ survey. A significant correlation was found ($r = .42, p < 0.01$) in a positive direction between peer support and achievement in science. Thus, among the three variables of value of education, parent support and peer support, peer support was the only variable that was related to the science achievement of the Iraqi high school students.

This result was consistent with many studies among immigrant populations, especially at the high school level. The first study was conducted by Suarez-Orozco, Pimentel and Martin

(2009) on students from Central America, China, the Dominican Republic, Haiti, and Mexico. Two research methods were used: quantitative and qualitative. The objectives were to determine specific factors that were contributing to students' academic performance. Among those factors were violent school environments; English language proficiency; and behavioral, cognitive and school-based supportive relations. Of these variables, school-based supportive relationships stood out as a significant factor in academic engagement. Peers, teachers and other school personnel comprised the school support factor. Peers were described by Suarez-Orozco et al., (2009) as essential for providing the emotional and tangible support for those newcomers. Therefore, the researchers' concluded that peers, in addition to providing help for homework assignments and school functions, also assisted new students in overcoming their loneliness and embarrassment with the new culture.

Another study by Fuligni (1998) used 10th grade students from two high schools and 6th and 8th grade students attending two middle schools in a California school district to examine the relationship among specific factors (e.g., family background, parental attitudes, peer support, and their own attitudes) and their academic achievement in math and English.. The participants were from immigrant families and from different ethnic backgrounds. The results found indicated that students who were from different immigrant families believed in their parents' value of education and had a high expectation of their work in school. Additionally, they worked together with their peers and helped each other in school work. Fuligni (1998) concluded that a relationship existed between the students' academic achievement and their support from parents and peers, and the parents' value of education, along with their own attitudes toward education.

A study by Gandara, O'Hare, & Gutierrez (2004) was conducted in two high schools with student populations of 2,000 and 1,100. The students were from different ethnic backgrounds,

including Latino, African-American, South Asian, and Caucasian students. The longitudinal study lasted for five years, starting when the students were freshmen, and ending when they graduated from high school. The main goal of the study was to examine changes in the relationship between academic achievement and students' school environment. Gandara et al. (2004) concluded, the most convincing finding was that staying in school influenced students' academic inspiration positively. They explained that how students felt toward the school and their peers in sharing certain values established belongingness.

The findings of the present study supported results of a study of peers and academic achievement in high school by Witkew and Fuligni (2010). The aim of their research was to determine the strength and direction of the relationship between the number of peers and their average GPA. The population was 9th through 12th grade students from three public high schools in the Los Angeles area. The students were from different ethnic background (e.g., Latinos, Asian Americans, African Americans, and European Americans). The study found that a positive relationship between the number of peers and students' GPA, especially among the diverse population of students at the high school level. These results were related to the findings of the present study that indicated having more support from peers enhanced or enriched students' success in school.

Ancillary findings. The higher level of peer support among participants born in the United States may be due students having attended school in the United States from kindergarten through high school. They typically have lived in the same neighborhoods and attended school with the same students throughout their education. During this period, they established friendships with their peers, especially those with likeminded goals and ambitions. In contrast, students who have entered high school or even elementary school as immigrants with poor

English language skills might lack the background to form these types of friendships. Most immigrant students enter school needing support from ESL classes, which further isolated them from the majority population, limiting their ability to form peer relations with other students who could help them in their courses. As these students gain the confidence, they became friendly with their peers, who become more important and helped them achieve academic success.

Girls were more likely to seek peer support as an essential avenue for high school success. Some girls may be new to the country and have not developed social connections outside school. The girls usually have more friends in school than boys and they may be more likely to engage in extracurricular activities to avoid risky behavior after school. Girls have family support that can help them avoid negative peer pressure. In general, peer support helps girls progress through their academic courses and form lasting friendships.

Educational Implications

The results of this study have established some answers for the research question of what are the factors that might correlate with the academic achievement of immigrant populations, such as our population from Iraq. The answer was the student's perceived value of education and peer support, but not their parents' involvement. Therefore, peers can play a vital role in the success of this particular population in the US, especially at the high school level; alongside the value the students establish themselves about education. This research might fill some gaps about the factors which influence the achievement of the Iraqi population who have arrived in this country recently. As the results indicate, positive peer relationships should be supported by teachers and administrators to help immigrant students become acclimated to the school culture.

The results of this study provided evidence that the student's value of education was significantly related to science achievement. This finding differed from previous research

(McInerney & Suliman, 2006; Fuligne, A.,1997; Rumbant & Portes, 2001) that used this factor as one of many variables related to overall academic achievement. The finding of this research provided support of how students gained academic success, mainly in science, when they linked the value of education with their future. School administrators need to create the kinds of programs that promote the value of the education as part of the schools' routine curriculum. For instance, encourage the peer grouping throughout educational activities for all students regardless of their interests or talents.

The findings of this research did not link the parents to the students' achievement for this level, the high school level. Adolescents generally start acclimating to a new culture faster and easier than their parents because they become involved with the new culture directly, without the language barriers their parents must confront. The long hours the parents work to support their family could limit their ability to be involved actively with their children's academic process.

The present student findings supported earlier research (Suarez-Orozco, Pimentel, & Martin, 2009; Wei-Cheng Mau, 1997; McInerney, & Suliman, 2006) that did not find parental support significant for this particular population. Again, this finding does not eliminate the essential role of parents in the process of education and their impact on their children's success, but when it comes to a certain population of immigrants and at the high school level, it seems like the role of the parents will be slightly minimized. As a result, parents still play some kind of role to support their children in their endeavor for education and achievement, but their role decreases as their children mature.

This research provided significant evidence of the role of peers in immigrants' educational process at the high school level. School policy makers and administrators, along with other personnel in schools, need to be aware of the importance of peer relationships and peer

support. The role they play in each others' educational process is significant and vital. Peer support could be built through all the activities in the school, making them available for all students. Schools should create and support all types of activities inside and outside the class room, such as sport clubs, social clubs, drama clubs, debate teams, ethnic organizations, music teams, and so on. These social experiences can support their peer relationships and enhance their educational experiences.

Limitations of the Study

Although there were some significant findings from this research, this study has some limitations that may affect the generalizability of the results.

1. Students were drawn from one high school. The findings may be reflective of Iraqi students at that high school, limiting the generalizability to Iraqi students in other schools or school districts.
2. Students had two different dates to take the survey, with some completing it separately. These variations in the timing of the survey might have had an effects on the results compared to all participants completing the survey at the same time.
3. The primary goal of this research was to find a relationship between certain factors and science achievement using a quantitative study design. However, a qualitative study might have found inclusive data and details that the quantitative may not.
4. The questionnaire was available both in English and Arabic, yet none of the participants asked about the Arabic version despite some of them being in the bilingual program and having limited language proficiency.
5. Very few of those students asked for clarification or explanation of some of the questions, perhaps because they might have felt embarrassed to ask.

6. The accuracy of the data might be limited as the students may have not given their true responses due to the political and social harassment they might have went through for many years before coming to this country.

Directions for Future Research

This research found a preliminary answer regarding the relationship between science achievement and the value of education, parental support, and peer support in this country for this particular population. Additionally, the sample used in this study was comprised of Iraqi students at the high school level. In the future, researchers may explore other areas to extend this research to other groups:

- Replicate the study using a larger, more heterogeneous sample of immigrant students from different ethnic groups (e.g., Latino/a, Arabic, Asian Indian, etc.) to determine if the value of education, parental support, and peer support differs among the ethnic groups.
- Examine differences in perceptions of the value of education, parental support, and peer support between immigrant and native born students to determine if being an immigrant results in different outcomes when compared to native born students.
- Conduct a longitudinal study beginning with students in middle school and continuing through high school to determine if students' perceptions of the value of education, parental support, and peer support change over time.
- Use a qualitative research design to obtain more in-depth information on the role of peers and parents in academic achievement.

APPENDIX A

Student Survey**Facilitating Conditions Questionnaire (FCS)
(McInerney, 1988)**

In this survey we are interested in finding out what your parents, teachers, and friends tell you about school and its importance for you. If you live with someone whom you consider to be your mother or father (e.g., grandparents, auntie and uncle) answer the questions as if the person is your parent. If you don't have a mother or father or someone acting as a mother or father, leave those questions blank.

We will tell you what some students think and we want you to tell us how much you agree with what they say.

Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1	2	3	4	5

Based on the chart above, please circle the number that represents your belief most closely.

1	I think it is really important to do well at school.	1	2	3	4	5
2	I believe that education is important for me in getting a job.	1	2	3	4	5
3	If I do well at school, I am more likely to get a good job	1	2	3	4	5
4	Doing well at school is really important to my future.	1	2	3	4	5
5	I don't care if I get a job or not when I leave school.	1	2	3	4	5
6	Many of the subjects I learn at school will help me after I leave school.	1	2	3	4	5
7	People who have good schooling get more out of life than ones who don't.	1	2	3	4	5
8	All students should complete high school.	1	2	3	4	5
9	My mother helps me with my school work.	1	2	3	4	5
10	My father helps me with my school work.	1	2	3	4	5

11	My mother doesn't pay much attention when I bring home report cards.	1	2	3	4	5
12	My father doesn't pay much attention when I bring home report cards.	1	2	3	4	5
13	My mother doesn't care if I get a job or not when I leave school.	1	2	3	4	5
14	My father doesn't care if I get a job or not when I leave school.	1	2	3	4	5
15	It's important to me to have my mother's help with my school work.	1	2	3	4	5
16	It's important to me to have my father's help with my school work.	1	2	3	4	5
17	Some of my friends tell me I should quit school when I can.	1	2	3	4	5
18	Some of my friends want to go to college or university.	1	2	3	4	5
19	Most of my friends want to do well in school.	1	2	3	4	5
20	Some of my friends want to quit school as soon as they can.	1	2	3	4	5
21	Most students in my class will complete high school.	1	2	3	4	5
22	Most students in my class will go on to college or university.	1	2	3	4	5
23	Some of my friends tell me to quit school and to get a job.	1	2	3	4	5
24	Some of my friends leave school early and go on welfare.	1	2	3	4	5

Background Information

Your Age: _____

Gender: _____ Female _____ Male

Grade level at school: (Please circle one answer)

- 1 Grade 9
- 2 Grade 10
- 3 Grade 11
- 4 Grade 12

What language do you normally speak at home? (circle one number only)

- 1 Only Arabic
- 2 Mostly Arabic
- 3 English and Arabic
- 4 Mostly English
- 5 Only English

Regarding your father's work please check which one applies best:

- 1 Manual labor/factory
- 2 Professional/Business
- 3 Secretarial/Office worker
- 4 Works in home/homemaker
- 5 Unemployed

Regarding your mother's work, please check which one applies best:

- 1 Manual labor/factory
- 2 Professional/Business
- 3 Secretarial/Office worker
- 4 Works in home/homemaker
- 5 Unemployed

Please circle how much schooling your FATHER has had:

- 1 Elementary through Grade 8
- 2 Some high school
- 3 High School Graduate
- 4 Vocational training (mechanic, computers, etc.)
- 5 College education

Please circle how much schooling your MOTHER has had:

- 1 Elementary through Grade 8
- 2 Some high school
- 3 High School Graduate
- 4 Vocational training (mechanic, computers, etc.)
- 5 College education

Who do you live with? Please circle ONE.

- 1 Mother and father
- 2 Mother only
- 3 Father only
- 4 Other relative: _____ (which relative?)

How many siblings (brothers and sisters) do you have?

- 1 None
- 2 One
- 3 Two
- 4 Three
- 5 Four or more

Where do you come in your family? Please circle ONE .

- 1 I am the oldest child
- 2 I am a middle child
- 3 I am the youngest child

What culture is strongest in how you were raised?

- 1 Iraqi
- 2 Arabic, but not Iraqi
- 3 American
- 4 Others

Thank you very much for taking the time to complete this questionnaire.

APPENDIX B

THE ARABIC VERSION OF THE QUESTIONNAIRE

اسئلة البحث (شروط التسهيل) -FCS
(ماكنري، 1988)

في هذه الدراسة وبهذه الاسئلة, نحن مهتمون بمعرفة ما يقوله الأهل والأصدقاء لكم عن المدرسة وأهمية الدراسة والتعليم بالنسبة لكم. إذا كنت تعيش مع شخص و تعتقد في أن يكون مثل الأم أو الأب (مثل الأجداد، والعمة والعم) الإجابة على الأسئلة كما لو كان الشخص هو فعلا يمثل الاب او الام الخاص بك. إذا لم يكن لديك أم أو أب أو أي شخص يتصرف كالأب أو الأم، اترك هذه الأسئلة فارغة.

نحن سوف نقول لكم ما يعتقد بعض الطلاب ونريد منكم أن تخبرونا كم تتفقون مع يقولون .

لا اوافق بشدة	لا اوافق	لا اتفق ولا اختلف	لا اوافق	اوافق بشدة
1	2	3	4	5

استناداً إلى الاختيارات أعلاه، الرجاء ضع دائرة حول الرقم الذي يمثل الأكثر تطابقاً.

1 2 3 4 5	1- أعتقد أنه من المهم جداً السعي والمثابرة بشكل جيد في المدرسة.
1 2 3 4 5	2- أعتقد أن التعليم مهم بالنسبة لي في الحصول على وظيفة.
1 2 3 4 5	3- إذا نجحت في المدرسة، فإن هناك أكثر احتمالاً في الحصول على وظيفة جيدة.
1 2 3 4 5	4- نجاحي في المدرسة مهم بالنسبة لي و لمستقبلي.
1 2 3 4 5	5- ليس مهماً في ان أحصل على وظيفة جيدة أو لا عند تركي للمدرسة.
1 2 3 4 5	6- العديد من المواضيع والمواد التي تعلمتها في المدرسة سوف تساعدني بعد أن اترك المدرسة.

1 2 3 4 5	7- الناس المتعلمون من المدرسة يكسبون اكثر من الحياة مقارنة بغير المتعلمين .
1 2 3 4 5	8- يجب على جميع الطلاب اكمال المرحلة الثانوية.
1 2 3 4 5	9- والدتي تساعدني في واجباتي المدرسية.
1 2 3 4 5	10- والدي يساعدني في واجباتي المدرسية .
1 2 3 4 5	11- والدتي لا تهتم كثيراً عندما أجب تقرير الدرجات الى البيت .
1 2 3 4 5	12- والدي لا يهتم كثيراً عندما أجب تقرير الدرجات الى البيت.
1 2 3 4 5	13- والدتي لا تهتم كثيراً إذا أحصل على عمل أو لا عند تركي للمدرسة .
1 2 3 4 5	14- والدي لا يهتم كثيراً في ان احصل على عمل او لا عند تركي المدرسة .
1 2 3 4 5	15- مهم بالنسبة لي ان تساعدني والدتي في واجباتي المدرسية
1 2 3 4 5	16- مهم بالنسبة لي ان يساعدني والدي في واجباتي المدرسية .
1 2 3 4 5	17- بعض أصدقائي ينصحوني بترك المدرسة اذا أستطعت .
1 2 3 4 5	18- بعض أصدقائي يريدون الذهاب والقبول في الكلية أو الجامعة.
1 2 3 4 5	19- معظم أصدقائي يرغبون بالمتابعة في المدرسة.
1 2 3 4 5	20- بعض أصدقائي يرغبون في ترك المدرسة في أقرب ما يمكن.
1 2 3 4 5	21- معظم زملائي في الصف سيكملون المرحلة الثانوية.

1 2 3 4 5	22- معظم زملائي في الصف سيستمرون الى الكلية أو الجامعة.
1 2 3 4 5	23- بعض أصدقائي ينصحونني بترك الدراسة والحصول على عمل.
1 2 3 4 5	24- بعض أصدقائي يتركون المدرسة مبكراً، ويعتمدون على مساعدة الولاية والرعاية الاجتماعية.

APPENDIX C

Parental Permission/Research Informed Consent

Title of Study: An Examination of the Relationship Among Iraqi High School Students' Science Achievement and their Perceptions of Value of Education, Parents support, Peer support in the United States

Principal Investigator (PI): Samir F. Al-Mandwee

Purpose

You are being asked to allow your child to be in a research study of the relationship of parents, peers, and value of education with academic achievement in science because this research might provide insights into how we as teachers can give more support to the Iraqi students, who have newly arrived here in the U.S. This study will be in one of the Dearborn High Schools. The estimated number of study participants to be enrolled in this school is about 80-100. Please read this form and ask any questions you may have before agreeing to be in the study.

In this research study, the purpose is to understand the dynamics of the three factors in the students' lives, to see if these three factors have a direct relationship to students' success in science.

Study Procedures

The relationship of parents, peers, and the value of education with the academic achievement in science

If you/ your child agree to take part in this research study, he/she will be asked to ***[complete a questionnaire, about 24 questions during 15-20 minutes.***

Benefits

There may be no direct benefit for 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 participation in this study.

Study Costs

Participation in this study will be of no cost to you.

Compensation

You or your child will not be paid for taking part in this study.

Research Related Injuries

Please note the language in this section must match the Clinical Trial Agreement (CTA)/Contract. The Sponsored Programs Administration will assist the PI with the language.

If the risks to the study are no more than minimal (i.e., protocol may be expedited or exempted), this disclaimer, including the header, may be removed if IRB chair or designee concurs with its elimination.]

In the event that this research related activity results in an injury, treatment will be made available including first aid, emergency treatment, and follow-up care as needed. Care for such will be billed in the ordinary manner to you or your insurance company. No reimbursement, compensation, or free medical care is offered by Wayne State University. If you think that your child has suffered a research related injury, contact the PI right away at 586-344-6786.

Confidentiality

All information collected about your child during the course of this study will be kept confidential to the extent permitted by law. Your child will be identified in the research records by a code name or number. Also, the science grades of your child for the two semesters will be requested and linked to the students' survey responses. Information that identifies your child personally will not be released without your written permission. However, the study sponsor, the Institutional Review Board (IRB) at Wayne State University, or federal agencies with appropriate regulatory oversight [e.g., Food and Drug Administration (FDA), Office for Human Research Protections (OHRP), Office of Civil Rights (OCR), etc.] may review your records.

When the results of this research are published or discussed in conferences, no information will be included that would reveal your child's identity.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You have the right to choose not to allow your child to take part in this study. If you decide to allow your child to take part in the study you can later change your mind and withdraw from the study. You and/or your child are free to only answer questions that you want to answer. You are free to withdraw your child from participation in this study at any time. Your decisions will not change any present or future relationship with Wayne State University or its affiliates, or other services you or your child are entitled to receive.

The PI may stop your child's participation in this study without your consent. If your child has any side effects that are very serious or if your child becomes ill during the course of the research study your child may have to drop out, even if you would like to continue. The PI will make the decision and let you know if it is not possible for your child to continue. The decision that is

made is to protect your child's health and safety, or because it is part of the research plan that people who develop certain conditions or do not follow the instructions from the study doctor may not continue to participate.

Questions

If you have any questions about this study now or in the future, you may contact Samir Al-Mandwee at the following phone number: . If you have questions or concerns about you or your child's rights as a research participant, the Chair of the Institutional Review Board 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 voluntarily agree to have your child take part in this study, you must sign on the 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 Witness (When applicable)

Date

Printed Name of Witness

Time

Oral Assent (children age 7-12) obtained by

Date

Signature of Person Obtaining Consent

Date

Printed Name of Person Obtaining Consent

Time

Signature of translator

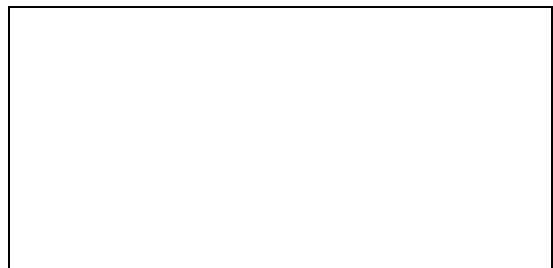
Date

Printed name of translator

Time

* Both parent’s signatures should be obtained however both are **required** for level 3 studies

** Use when parent/guardian has had consent form read to them (i.e., illiterate, legally blind, translated into foreign language).



APPENDIX D
STUDENT ASSENT FORM

**AN EXAMINATION OF THE RELATIONSHIP AMONG IRAQI HIGH SCHOOL
STUDENTS' SCIENCE ACHIEVEMENT AND PERCEPTIONS OF THE VALUE OF
EDUCATION, PARENT SUPPORT, AND PEER SUPPORT IN THE UNITED STATES**

Samir F. Al-Mandwee

Introduction and Purpose

I am Mr. Samir Al-Mandwee, a graduate student at Wayne State University. I am conducting a research study to investigate the effects of parents, peers, and the value of Education on our Iraqi students' achievement in science. The purpose of this research is to help teachers, counselors, and parents better understand the factors that affect your motivation to learn.

If you choose to take part in this research study, you will be asked to complete two surveys. The first survey will ask about your classes and situations in your classes. The second survey will be used to obtain information about you.

Benefits

You may or may not benefit from taking part in this research study. You may learn ways to make responsible life choices. As a participant, you will be able to express your feelings openly, without being judged by those in authority.

Risks

No risks or additional effects are likely to result from your participation in this study. In the unlikely event of an injury arising from participation in this study, no reimbursement, compensation, or free medical treatment is offered by Wayne State University or the researcher.

Voluntary Participation/Withdrawal

Taking part in this study is voluntary. You can withdraw from the study at any time without affecting you in your classes. You can also skip any questions that you do not want to answer.

Costs

There are no costs to you for taking part in this study.

Compensation

You will not receive any money or other reward for taking part in this study.

Confidentiality

Information collected during the course of this study will be kept confidential to the extent permitted by law. Your name will not appear on any reports; you will be identified only by a code number.

Questions

If you have any questions about the research study, you can ask to speak to the researcher, Mr. Al-Mandwee at . If you have any questions about your rights as a research subject, you can contact the Chair of the Human Investigation Committee, Wayne State University at (313) 577- 1628.

Student

Date

Witness

Date

Student Name-----

Date-----

Principal Investigator's Signature/ Date -----

APPENDIX E

**APPROVAL FROM WAYNE STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD**

**WAYNE STATE
UNIVERSITY**

IRB Administration Office
87 East Canfield, Second Floor
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
<http://irb.wayne.edu>

NOTICE OF EXPEDITED APPROVAL

To: Samir Al-Mandwee
College of Education
Classical and Modern Languages

From: Dr. Deborah Ellis C. Zolundek/AB
for Chairperson, Behavioral Institutional Review Board (B3)

Date: February 03, 2014

RE: IRB #: 119413B3E

Protocol Title: An Examination of the Relationship Between Iraqi High School Students' Science Achievement and their Perceptions of their Parents, Peers, and Value of Education in the United States

Funding Source:

Protocol #: 1312012620

Expiration Date: February 02, 2015

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

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Expedited Review* Category ("#5 #7") by the Chairperson/designee for the Wayne State University Institutional Review Board (B3) for the period of 02/03/2014 through 02/02/2015. This approval does not replace any departmental or other approvals that may be required.

- Revised Protocol Summary Form (received in the IRB Office 1/24/2014)
- Protocol (received in the IRB Office 11/27/2013)
- Parental Permission/Research Informed Consent - English and Arabic versions (dated 1/27/2014)
- Student Assent Form - English and Arabic Versions (received in the IRB Office 1/27/2014)
- Data Collection Tools: Student Survey - Facilitating Conditions Questionnaire (FCS) English and Arabic Versions, and Background Information

- * 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 IRB **BEFORE** implementation.
- * Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the sponsor's form within the timeframe specified in the IRB Administration Office Policy (<http://www.irb.wayne.edu/policies-human-research.pdf>).

NOTE:

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

*Based on the Expedited Review List, revised November 1996

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ABSTRACT**AN EXAMINATION OF THE RELATIONSHIP AMONG
IRAQI HIGH SCHOOL STUDENTS' SCIENCE ACHIEVEMENT AND
PERCEPTIONS OF THE VALUE OF EDUCATION, PARENT SUPPORT,
AND PEER SUPPORT IN THE UNITED STATES**

by

SAMIR F. AL-MANDWEE

May 2015

Advisor: Dr. Marc Rosa**Major:** Curriculum and Instruction**Degree:** Doctor of Philosophy

The objective of this dissertation was to quantitatively study Iraqi students (N=90) who arrived in the U.S.A. in the last 20 years. A non-experimental, descriptive research design was used for this study, which took place in one of three high schools in a large Midwestern suburban school district, during the 2013-2014 academic year. Three factors, including the students' perception of the value of education, the parental support, and the peer support, were examined using the Facilitating Conditions Questionnaire. The three subscales were part of a larger self-administered questionnaire used by McInerney (1997). In addition to the FCQ survey, a student demographic questionnaire was also used in the survey. Quantitative data from the FCQ survey reported that the students' perception of the value of education and their perception of peer support had a significant relationship with science academic achievement, which was measured for two semesters. Moreover, their peer support was the only predictor for science achievement.

AUTOBIOGRAPHICAL STATEMENT**SAMIR F. AL MANDWEE**

I received a Bachelor's degree in Physics from Baghdad University-Iraq. After being admitted to the graduate program at Western Michigan University, Kalamazoo, Michigan, I was assigned a graduate assistant position, where I taught introductory courses in Physics and was part of the graduate committee in the Physics department. I graduated with a Master's degree in Physics, and my thesis was A Quantitative Study of the Copper Content in Granite Rocks, Using Emission Spectroscopy Technique. Later, I worked in Detroit Public Schools as a substitute teacher in a regular position for two years while working on a teaching certificate. I graduated from Eastern Michigan University, Ypsilanti, Michigan with a Master's degree in Education, and a teaching certificate with a major in Physics and minor in Chemistry. I taught Physics, Biology, Chemistry, Earth Science, Geometry, and Algebra in Detroit high schools for many years. In the beginning of year 2000, I started teaching bilingual classes to a new immigrant students who came as refugees from Iraq. I applied for and earned a bilingual endorsement. I taught bilingual and ESL classes in high and middle schools in the Detroit area. In the Winter of 2015, I defended my dissertation entitled An Examination of the Relationship Between Iraqi High School Students' Science Achievement and their Perceptions of their Parents, Peers, and Value of Education in the United States. In addition to my science background, I enjoy teaching my native language, Arabic, as a second language. I have taught all the levels at Western Michigan University, Kalamazoo, Michigan for three years and am currently teaching two classes at Wayne State University, and another two at Macomb Community College. I also have published a collection of short stories in the Arabic language in Beirut, Lebanon.