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# Digital Biliteracy: Digital Technologies As Homes For Arab Immigrant Children's Biliteracy Development

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DIGITAL BILITERACY: DIGITAL TECHNOLOGIES AS HOMES FOR ARAB  
IMMIGRANT CHILDREN'S BILITERACY DEVELOPMENT

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Charles Ambler, Ph.D.  
Dean of the Graduate School

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## **Dedication**

To my family



DIGITAL BILITERACY: DIGITAL TECHNOLOGIES AS HOMES FOR ARAB  
IMMIGRANT CHILDREN'S BILITERACY DEVELOPMENT

by

LAILA Z. AL-SALMI, B.A., MAT

DISSERTATION

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The University of Texas at El Paso  
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for the Degree of

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I'm grateful to the support of all my committee members. In particular, I'm grateful to Dr. Patrick Smith, the chair of my dissertation, who continuously tutored, guided and supported my scholarly development in the literacy/biliteracy field. Every meeting, email and conversation with Patrick carried a learning experience and inspired my work on digital biliteracy. I'm deeply thankful for all the books he lent to me, all the scholarly articles he shared with me, and all the letters of support that he wrote for me. Thank you for believing in my ideas and me. I would also like to thank Dr. Erika Mein whose passion about literacy and learning motivated me to pursue this topic on digital biliteracy. Erika was always kind and patient in helping me understand details that were vague. Her vast knowledge and passion for the field of literacy/biliteracy pushed me to find my own voice and reflect on my own experiences in the process. My gratitude also goes to Dr. Guillermina Núñez -Mchiri who was always a source of enthusiasm and support. Gina's brilliant ideas and dedicated guidance allowed me to reflect on the role of the researcher when using ethnographic techniques. Her commitment to feminism and social justice inspired me to continue my research in the Arab community. I'm grateful for her friendship, mentorship and kindness.

This project wouldn't have been done without the love and support of my family. I am grateful to my parents and siblings whose calls and messages encouraged me to proceed. I'm also grateful to my husband, Said, for his patience and love in this long journey, and for

believing in my ability to complete this dissertation. Lastly but not least, I would like to thank my children, Mariah, Reem and Ibrahim, who were an inspiration to my work. The time I spent working on this study took away from your time; thank you for allowing me to be ‘Dr. Mommy’.

## **Abstract**

The revolution of digital technologies and children's increasing access to them is impacting the literacy development of children around the world. However, few studies have investigated the relationship between digital technologies and immigrant children's biliteracy development. The purpose of this study was to understand the digital literacy practices of Arab pre-kindergarten children and how these shape biliteracy development in Arabic and English. To make sense of the emergent biliteracy of these young participants, the study proposed Digital Biliteracy, a theoretical framework that draws on elements of New Literacy Studies, Multimodal Literacies, Digital Literacies and Situated Learning Theory.

The study employed a qualitative case study design to interrogate the role of digital technologies in the experiences of immigrant children learning Arabic and English at home and at school in Southwest Texas. Data included participant observations with five case study children in the family home, weekly classroom observations, interviews with parents and teachers, and children's written artifacts. These rich sources of data allowed for in-depth examination of children's emerging digital biliteracy.

The research questions that I pursued in this study addressed the use of digital technologies in relation to literacy development in two languages. The questions also addressed the use of available digital technologies and their role in young children's literacy development, language appropriation and autonomy that the Arab children developed as they become more confident and skilled users. Through participant observation, interviews, and document collection, I analyzed how participants used digital technologies to learn a new language, and maintain their first language and home culture. I was also able to examine how participants appropriated digital literacy practices in ways that fostered transnational affiliations by

maintaining prominent social conventions and sharing memories, events, and greetings, with extended family members in their countries of origin.

The study provides evidence for the importance of children's participation in social conventions including participation in transnational digital environments to maintain family ties and social relationships in the home country. The children's participation in transnational digital environments helped them develop digital biliteracy. The findings of this study show that digital biliteracy, in turn, have helped Arab parents and children negotiate, form, maintain, and transform how they see themselves and how they want to be seen as Arab children/parents. Through the use of digital technologies, case study children recognized and began to practice literate conventions in both languages. Implications for theory, practice (for teachers and parents) and further research are discussed.

## Table of Contents

Acknowledgements.....	v
Abstract.....	vii
List of Tables .....	xvii
List of Figures.....	xviii
Chapter One: Introduction .....	1
1.0 Introduction to the Study.....	1
1.1 Arabic: History, Importance and Use in the World .....	2
1.2 Literacy Rates in Arab Countries.....	4
1.3 History of Arab Immigration to The United States .....	6
1.4 Arabic as a minority language in the United States.....	7
1.5 Rationale for the study .....	8
1.5.1 Statement of the Problem.....	8
1.5.2 Purpose of the study.....	9
1.5.3 Research Questions.....	12
1.5.4 Significance of the study.....	13
1.6 Definition of Terms.....	14
1.7 Organization of the Study .....	17
Chapter Two: Review of Research and Related Literature .....	20
2.0 Introduction.....	20
2.1 Sociocultural perspectives on Literacy and Learning.....	21
2.1.1 Situated Learning Theory .....	22
2.1.2 Multimodality and Multiplicity of Literacy.....	23
2.1.2.1 Print Literacy .....	23

2.1.2.2 Digital Literacy .....	25
2.1.2.3 Multimodal Literacy .....	27
2.1.3 Literacy as a Social Practice .....	33
2.2 Digital Literacies in Multiple Contexts: In and Out-of-School .....	36
2.2.1 Digital Literacies at the School.....	37
2.2.1.1 Equality and Access: The Digital Divide.....	37
2.2.1.2 School-based Digital Literacies and Language Learning .....	40
2.2.1.3 Digital Literacy Skills and Age of the Learners .....	41
2.2.1.4 Digital Literacies, Teachers and the Curriculum .....	42
2.2.2 Out-of-School Digital Literacies of English Language Learners (ELLs).....	45
2.3 Digital Literacy: Shaping the Cultural Identity of Immigrant Children .....	49
2.3.1 Digital Literacy Among Transnational Immigrants.....	49
2.3.2 Identity Formation through Digital Literacy.....	51
2.4 Literacy Development among Arabic Speakers .....	54
2.4.1 Literacy Development in Arabic.....	54
2.4.2 Literacy Development in English by Arabic Speakers .....	56
2.5 Digital Biliteracy: A Framework for Digital Literacy Development in Two Languages.....	59
2.5.1 Digital Biliteracy.....	59
2.5.2 Why Digital Biliteracy is Important?.....	61
2.6 Summary .....	63
Chapter Three: Methodology and Procedures .....	65
3.0 Introduction .....	65
3.1 The Research Design .....	66

3.1.1 Case Study in Educational Research.....	66
3.1.2 Case Study in Digital Literacy Research .....	67
3.1.3 Why Case Study Research in this Study? .....	67
3.2 Participants.....	68
3.2.1 Recruitment Procedures .....	69
3.2.2 Procedures for Participant Observation at the School .....	69
3.2.3 Procedures for Case-Study Families.....	70
3.2.4 Rationale for Purposeful Sampling, versus Random, Recruitment of Case-Study Families.....	71
3.3 Data Collection Strategies.....	72
3.3.1 Observations .....	72
3.3.2 Interviews and Informal Conversations .....	74
3.3.3 Artifacts.....	76
3.4 Data Analysis .....	77
3.4.1 Reflective Notes and Memos .....	78
3.4.2 Analysis of Classroom Digital Practices.....	80
3.4.3 Analysis of Home Digital Experiences.....	81
3.5 Ethical Considerations .....	83
3.5.1 Subjectivity and Reflexivity .....	83
3.5.2 Access, Entry and Trustworthiness.....	85
3.5.3 Member Checking.....	86
3.5.4 Confidentiality .....	86
3.6 Evolving Roles of the Researcher.....	86



3.7 Summary .....	89
Chapter Four: Context of the Study .....	91
4.0 Introduction .....	91
4.1 The community .....	91
4.2 The School: Al-Noor.....	94
4.2.1 Faculty and Staff.....	95
4.3 The classroom .....	98
4.3.1 The Pre-Kindergarten Teachers .....	98
4.3.2 Classrooms' Environment: Organization and Instruction.....	99
4.3.2.1 The Lead-Teacher Classroom .....	100
4.3.2.2 The Arabic Classroom .....	104
4.3.3 Daily Routine .....	106
4.3.3.1 Pre-class Time.....	107
4.3.3.2 Morning Class: Full Academics Content.....	107
4.3.3.3 Lunch Time .....	111
4.3.3.4 Play Time .....	113
4.3.3.5 Naptime.....	113
4.3.3.6 The Arabic and Islamic Studies Class .....	114
4.3.3.7 Math/Science and Social Studies Time.....	116
4.4 Summary: Literacy Development the Arabic and the English Classrooms.....	117
Chapter Five: Profiles of Participating Children and Families .....	120
5.0 Introduction .....	120
5.1 Ali .....	123

5.1.1 Ali's Family .....	123
5.1.2 Ali at School .....	128
5.2 Magid .....	129
5.2.1 Magid's Family .....	129
5.2.2 Magid at School .....	133
5.3 Manal .....	135
5.3.1 Manal's Family .....	135
5.3.2 Manal at School .....	140
5.4 Lama .....	142
5.4.1 Lama's Family .....	142
5.4.2 Lama at School .....	146
5.5 Jehan .....	148
5.5.1 Jehan's Family .....	148
5.5.2 Jehan at School .....	151
5.6 Summary of Participants' Profiles .....	153
Chapter Six: Digital Biliteracy at Home And School: How Digital Technologies Shape	
Children's Biliteracy Development .....	155
6.0 Introduction .....	155
6.1 Digital Biliteracy in the Bilingual Classrooms: Teacher's Views and Practices.....	156
6.1.1 Digital Technologies Assist with Teaching Religiously Responsive Materials ..	156
6.1.2 Interactive Practice.....	158
6.1.3 Cultural and Gender Differences .....	160
6.1.3.1 Cultural Differences.....	160

6.1.3.2 Gender Differences .....	164
6.1.4 Print vs. Digital Materials .....	165
6.1.5 Summary of Teacher's Use and Views of Digital Technologies.....	167
6.2 Digital Biliteracy Development Outside School.....	169
6.2.1 Factors Contributing to Digital Biliteracy Development at Home .....	170
6.2.1.1 Availability of Digital Technologies at Home.....	170
6.2.1.2 Children's Access to and Use of Digital Technologies at Home.....	173
6.2.2 Literacy in Arabic or English.....	175
6.2.2.1 Geographical Positioning.....	175
6.2.2.2 World Language.....	176
6.2.2.3 Simultaneous Biliteracy .....	178
6.2.3 Religious Education .....	179
6.2.4 Biliteracy Experiences at the Islamic School: Reasons and Roles .....	181
6.2.4.1 Transnational Immigrant Families vs. Immigrant Families.....	181
6.2.4.2 Why Arabic Literacy Development isn't the Reason .....	187
6.2.4.3 Parents' Perceptions of the Role of Schooling in Arabic Literacy Development .....	188
6.2.4.4 Digital Biliteracy Exchanges Between Home and School.....	189
6.2.4.4.1 Exchanges Taken from Home to School .....	189
6.2.4.4.2 Exchanges Taken from School to Home .....	192
6.2.5 Parents' Perspectives on Digital Biliteracy.....	193
6.2.5.1 Child Readiness for Biliteracy Development .....	194
6.2.5.2 Children's Interest in Biliteracy.....	197

6.2.6 Digital Biliteracy Among Arab families: How Children’s Digital Biliteracy was Developed? .....	198
6.2.6.1 Literacy Development in Arabic.....	198
6.2.6.1.1 Literacy Development in Arabic Using Digital Technologies .....	199
6.2.6.1.2 Literacy Development in Arabic through other Resources.....	206
6.2.6.2 Literacy Development in English .....	209
6.2.6.2.1 Literacy Development in English Using Digital Technologies .....	209
6.2.6.2.2 Literacy Development in English Using other Resources .....	212
6.3 Conclusion .....	218
Chapter Seven: Discussion and Conclusion .....	221
7.0 Introduction.....	221
7.1 Discussion.....	222
7.1.1 Adhering to Social Conventions Supports Biliteracy Development: Shaping Digital Biliteracy.....	222
7.1.2 Strategic Language Socialization: Children Recognizing Norms of Language Use .....	224
7.1.3 Transnational Digital Biliteracy: Maintaining Family Ties and Social Relationships through Digital Technologies.....	226
7.1.4 Literacy as Autonomy: Appropriating Digital Technologies and Shaping Independent Identities .....	228
7.1.5 Un-planned Biliteracy Development in Two Different Languages .....	231
7.1.6 Cultural Practices Generating Gender Related Literacies .....	232

7.1.7 Digital Technologies as Cultural Mediators: Children’s Funds of Knowledge	
Facilitating Biliteracy Development .....	233
7.1.8 Adult Digital Biliteracy: Parents Gaining Biliteracy with their Children.....	234
7.2 Contributions of the Study .....	235
7.2.1 Implications for Theory .....	238
7.2.1.1 Digital Biliteracy: Extending Theoretical Orientations .....	238
7.2.1.2 Examining Digital Transnationalism and Emergent Biliteracy Development	
.....	240
7.2.2 Implications for Practice .....	243
7.2.2.1 Implications for Parents .....	243
7.2.2.2 Implications for Teachers .....	245
7.3 Limitations .....	246
7.4 Directions for Further Research.....	247
7.5 Summary and Conclusion .....	250
References .....	253
Appendix (A) .....	278
Informed Consent: Parents.....	278
Appendix (B) .....	281
Informed Consent: Teachers .....	281
Vita.....	284

## List of Tables

Table 1.1 <i>Number of U.S. Arabic Speakers at Home (1980 – 2009)</i> .....	11
Table 1.2 <i>Projected Population of U.S. Arabic Speakers at Home in the U.S.: 2010, 2015, and 2020</i> .....	11
Table 3.1 <i>Frequency of Data Collection</i> .....	78
Table 4.1 <i>Faculty Demographics and Education</i> .....	96
Table 5.1 <i>Demographic Information about the Participating Families</i> .....	121
Table 5.2 <i>Parents’ Levels of Education, Occupations and Language Spoken at Home</i> .....	122
Table 6.1 <i>Summary of the Teachers’ Views and Practices on the Use of Digital Technologies for Biliteracy Development</i> .....	168
Table 6.2 <i>Available and Accessible Digital Technologies in Relation to Participants’ Socio-economic Status</i> .....	172
Table 6.2 <i>Parents’ roles in their children’s Digital Biliteracy Development</i> .....	219

## **List of Figures**

Figure 1.1 Literacy Rate Percentages in Some of the Arab Countries .....	5
Figure 2.1 Map of Middle East and North Africa (MENA) .....	55
Figure 4.1 Islamic Center Of El Paso, Al-Noor School on The 2nd Floor .....	95
Figure 4.2. The Lead-teacher classroom – Morning-Revision Area .....	101
Figure 4.3 A House Illustration Using Cardboard and Stones.....	102
Figure 4.4 The Arabic Classroom .....	105
Figure 4.5 Pre-Kindergarten Children in the Literacy Center – B is for Butterfly .....	111
Figure 4.6 Wall charts showing: A,B) Arabic numbers, C) letters and D) days of the week .....	115
Figure 4.7 Children Completing Tasks on StarFall.com at the Computer Center .....	118

## **Chapter One: Introduction**

### **1.0 Introduction to the Study**

Earlier research on biliteracy development among children, which refers to “any and all instances in which communication occurs in two (or more) languages in and around writing,” (Hornberger & Skilton-Sylvester, 2003 p. 35), reported that the topic of biliteracy development has not received enough attention despite its importance in the field (e.g. Dworin, 2003; Moll, Saeiz, & Dworin, 2001; Tagoilelagi-Leota, McNaughton, MacDonald, & Farry, 2005; Jared, Cormier, Levy, Wade-Woolley, 2011). Recent research on this topic has addressed biliteracy use in bilingual households in general (Fránquiz & Ortiz, 2012; Smith & Murillo, 2012), with adults (e.g. de la Piedra, 2006; Mein, 2012; Walt & Dornbrack, 2011) and children (e.g. Reyes, 2008; Reyes & Azuara, 2008; Toloa, McNaughton & Lai, 2009). In particular, research has highlighted the complex processes involved in developing biliteracy in two languages and the practices, contexts, forms and values associated with their development. This study is designed to provide an in-depth examination of the ways Arab-speaking children use digital technologies in the context of the school and home, and to uncover the forms of biliteracy that result from the children’s use of digital devices.

In the past decade, there has been much emphasis on the digital practices of youth (e.g. Lam, 2004, Lam & Rosario-Ramos, 2009; Leu, Kinzer, Coiro & Cammack, 2004; Leander, 2003; Warschauer, 2003) and how these digital practices support youth’s learning experiences when related to school practices. Very few studies have investigated the relationship between children’s biliteracy experiences and digital technology. Research has studied the digital literacy practices of immigrant youth from different ethnicities such as Asians (Lam, 2004, Walsh, 2007)



and Latinos (Bukingham, 2007; Fitzgerald and Debski, 2006; Lee, 2006; Rubinstein-Avila, 2007; Warschauer, 2007). Yet, there is a lack of research that studies the digital literacy practices of Arab children in the United States. In addition, Arab students' practices were not included in research, neither concerning Arab children and youth's biliteracy practices, nor their digital literacy practices and identity formation. This study builds on the need for research in this field. It is important to investigate Arab children's digital practices (more in section 1.2 & 1.3) to uncover some of the ways they use digital technologies to relate to their own culture and to acquire English as a second language while at the same time retaining their first language, Arabic.

### **1.1 Arabic: History, Importance and Use in the World**

Arabic is one of the most widely spoken languages in the world, following Chinese, Spanish, English and Hindi (ethnologue.com, 2013), and is one of the official languages of the United Nations (UN at a Glance, n.d.). Approximately 223 million people speak a version of Arabic as a first language in 59 countries (ethnologue.com, 2013). Arabic has been described as a language of wider communication (e.g. Kachru & Smith, 2009; Redouane, 1998) and a world language (e.g. Bale, 2010; Daoudi, 2011). Although not considered a threat to World Englishes, Arabic is expanding beyond the borders of Arabic-speaking countries (Kachru & Smith, 2009). Weber (1999) states that the Arabic language is "the only major international linguistic stream of influence that is quite independent of the West and as such is little noticed or appreciated there," (p. 27).

As a liturgical language in all Muslim states, being the language of the holy book of Islam 'Qur'an', Arabic is also widely used throughout the Muslim world, and by Muslims around the world, with an estimated total of 1.5 billion speakers, including native speakers (Stepan &

Robertson, 2004). Arabic is categorized into a number of dialects. The oldest form of Arabic in use today is Classical Arabic, which is the language of the Qur'an. An adapted form of classical Arabic is the Modern Standard Arabic (MSA). MSA is the official language of Arab countries that is used in the oral and written forms of all formal occasions. Each Arab country has its own local variety of Arabic, which can be hard to understand by another Arab from another country. However, educated Arabs typically use MSA when they communicate across cultures. In addition, some local varieties of Arabic are understood by Arabs from the Gulf States as a result of the wider popularity of their shows and media broadcasts, such as Egyptian, Syrian and Lebanese varieties.

The Arabic language spans the centuries before the advent of the Christian era to modern times. Its roots can be traced to the 7<sup>th</sup> century (Katzner, 1995) from the Semitic to the modern linguistic situation in the Arabic-speaking world (Ruhlen, 1987). Its significance as an important language in the whole world is largely connected to the rise of Islam as a major religion. At that time, the Arabic language became the dominant language in the area spanning from Central Asia to the Atlantic Ocean and in the Iberian Peninsula of Europe (DeYoung, 1999).

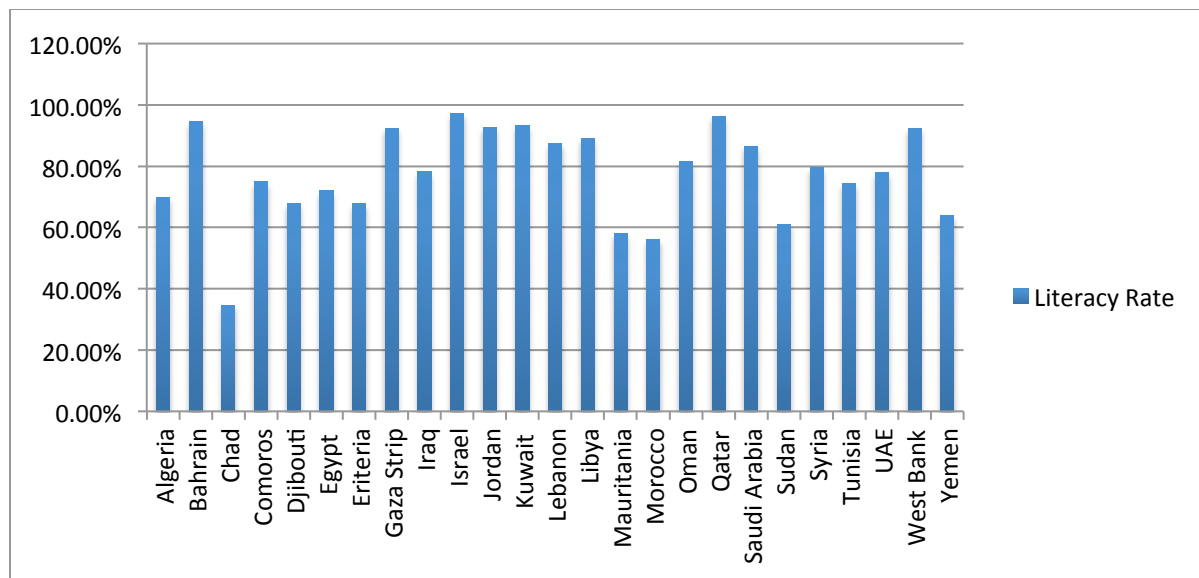
There are 25 countries that use Arabic as a national language and official/co-official language (besides English, French, and other indigenous local languages) including Algeria, Bahrain, Chad, Comoros, Djibouti, Egypt, Eritrea, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Gaza Strip and West Bank, Qatar, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Western Sahara, and Yemen (ethnologue.com, 2013). These countries are usually referred to as Arab countries. 21 of these countries (excluding Chad, Eritrea, Israel and Western Sahara) form the League of Arab States that was founded in 1945 (Tannock & Ahmed, 2008). Yet, citizens of other countries, such as Denmark, France, Kenya, and Tanzania, speak

Arabic mainly for religious purposes, in mosques and Islamic schools (ethnologue.com, 2013). Citizens of Arab countries share a common pan-Arab nationhood that consists of “language, culture, sociopolitical experiences, economic interests, and a collective memory of their place and role in history,” (Barakat, 1993, p. 33). As a result of these common elements of unity, they view themselves and are viewed by others as Arabs.

Inside Arab countries, Arabic is used as the official language of State, the stationary national language that is used for education (primary and secondary), official purposes, communication among Arabic-speaking countries, formal speeches and all official and state related print publications. With the integration of the Arab world into the global economy, new business opportunities have been provided. In most Arab countries’ jurisdictions, international brand owners do not have to register their trademarks in Arabic only. However, the incorporation of the Arab world into the global economy has made Arabic a language of trade that is, along with the Arab culture, useful to understand in order to do business effectively.

## **1.2 Literacy Rates in Arab Countries**

Literacy rates among countries of the Arab world vary. Figure (1.1) below shows the most recent literacy rates in some of the Arab countries according to the Central Intelligence Agency (The World Factbook, 2013).



*Figure 1.1* Literacy Rate Percentages in Some of the Arab Countries. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/fields/2103.html>. Copy right 2013 by The World Factbook.

During the reign of the Ottoman Empire (1299 to 1923), there were no formal schools that taught the Arabic language; it was taught in mosques and private places. However, around 1917, a few years before the fall of the Ottoman Empire and the end of World War I, the emphasis on teaching the Arabic language increased, particularly in Egypt (Shraybon, 1999). This initiative started the process of Arabization in the Arab countries, translating anything written in Turkish, English or French into Arabic and increasing the rates of literacy in the region (Sieny, 1988). As the Arab countries regained their independence, Arabic became the official language and the medium for keeping pace with the outside world (Al-Rajhi, 2006). As a result, Arabic became the language of State in Arab countries, which largely supported the spread of Arabic globally and gave the Arabic language a prestigious status.

### **1.3 History of Arab Immigration to The United States**

There are no exact percentages that reflect the number of Arab immigrants in the United States before World War I (1865 – 1914) because the U.S. government did not establish a category that identifies Arabic-speaking immigrants (Kayyali, 2006). However, in 1865, after the end of the U.S. Civil War, the first wave of Arab immigrants started with significant numbers of Arabs immigrating to the United States mainly from Syria, Lebanon, and Turkey (Rong & Preissle, 2009). Most of these immigrants were young males with little formal education, 90% of whom were Orthodox Christians and Catholics and few Muslims from Palestine (Kayyali, 2006; Naff, 1985). During the Great Migration period (1880 – 1924), approximately 95,000 Muslims immigrated to the United States and many others migrated to other countries such as Mexico, Brazil and Colombia (Shenton & Kenny, 1997). In the 1920s, the second wave of Arab immigrants, which started after World War I until 1960s, were affected by the passage of restrictive immigrations law and mainly included families of the Arab young men who remained in the United States (Rong & Preissle, 2009). After World War II, the third wave of immigration started with the passage of the 1965 immigration legislation that increased the percentage of immigrants from the Middle East and North Africa (Kayyali, 2006), with an estimated number of 1 million Muslim immigrants to the United States in the 1960s (Namir, 2002).

During the 19<sup>th</sup> century and the European domination of the East, the western knowledge that was generated and publicized about the East misrepresented Eastern society and generated various stereotypes and biases (Said, 1994). As a result, Said (1994) argues that the European hegemony upon Arabs' culture created a common view about Europe as the elite colonizer, which marked Arabs in a negative manner. In fact, Arab immigrants represent a range of varied nations, identities, ethnic and racial groups, religious practices, linguistic traditions, and

socioeconomic backgrounds (Rong & Preissle, 2009). Besides, not all Arabs are Muslim and not all Muslims are Arabs; approximately only 10% of the Muslim population in the world is of Arab origins (Kayyali, 2006). Yet, the events of September 11 have intensified the negative experiences of Arabs in the United States and contributed to the spread of stereotypes about Arabs and Islam (Rong & Preissle, 2009; Bale, 2010) besides becoming marginalized by educational institutions and research (Abu El- Haj & Bonet, 2011).

#### **1.4 Arabic as a minority language in the United States**

Arabic is one of the minority languages spoken in the United States. Although Arab immigrants started to arrive in significant numbers to the United States in 1880 (Arab American Institute, 2013), the U.S. Census Bureau doesn't provide statistics that represent the Arab populations as a group (Rong & Preissle, 2009). Gordon (2005) reports that there are more than three million immigrants of Arab ancestry, speaking Arabic as a first language in the United States, a majority of whom are American citizens.

According to the Arab American Institute (2013), one-third of Arab Americans in the United States live in California, New York, Florida and Michigan. There are about 91,568 Arab Americans in Texas, the site of this study. Texas is ranked fifth with respect to the size of the Arab American population. More than 89% of Arab American in the United States who are over 25 years old, hold at least a high school diploma, and 45% have a bachelor's degree or higher.

Despite the diminishing state of bilingualism among most assimilated subgroups in the United States (Bean & Stevens, 2003; Samhan, 2001; Walters & Jimenez, 2005), nearly half of Arab American households report some Arabic use (Samhan, 2001). As a result of the importance of the Arabic language and cultural heritage among Arabs in the United States, regardless of their religious affiliations, there have been efforts by the Arab people around the

country to establish private formal schools and weekend schools in order to preserve their language. Additionally, the rise of the political importance of Arabic in the United States has drawn federal, local and educational interests. Being categorized as a National Security Language in December 2003, the teaching of the Arabic language in the United States has expanded, starting at the kindergarten level and spanning up to the college level. According to the National Capital Language Resource Center (2007), there are about 110 K-12 private and private charter schools that offer Arabic programs around the country, 11 of which are located in Texas. One such school is the research site of this study.

Although estimations of Arabs in the United States are not clear, due to the fact that they are categorized as Whites in the U.S. Census Bureau tabulations, Arabic is a minority language and finding ways to enhance it through teaching and learning are important. In addition, the lack of research that addresses the Arab population's literacy practices requires researchers' attention to this group in the United States. The following section highlights the rationale for this study that attempts to investigate the biliteracy practices of Arab pre-kindergarten children in a border city in Southwest Texas.

## **1.5 Rationale for the study**

### **1.5.1 Statement of the Problem**

Arab immigrant and transnational immigrant (see definition in section 1.6) children in the U.S. have not received much attention by researchers. Relatively few studies have used socio-cultural theories to investigate literacy practices with young children in general and young Arab immigrant/transnational immigrant children in the U.S. in particular. Arab immigrant children are those who have migrated with their parents from an Arab-speaking nation. Transnational

immigrant children have also been brought with their parents to temporarily live in the United States, yet differ in that their parents intend to return to their countries of origin. This is a minor, yet significant difference in status, given the parents' projections to return and the children's limited agency in staying in the United States to pursue their education. Planning for a return migration influences what parents tend to invest in terms of language maintenance, acquisition practices and literacy practices. Literacy may be understood by educators as the ability to read and write (e.g. Bawden, 2001; Buckingham; 2006; Kress, 2003); however, definitions go beyond this scope to include the everyday practices or vernacular literacy practices (Barton, 2001). With the continuous revolution of digital technology, literacy is taking varied forms and different natures ranging from reading a book for a course, to reading a story for pleasure and reading instructions to start a computer game. How Arab children acquire literacy in their first and second languages and the role digital technologies may play in this acquisition are central topics that this study investigates.

### **1.5.2 Purpose of the study**

The purpose of this study is to investigate young Arab children's literacy practices in a border city in Southwest Texas. The study examines the children's use of available digital technologies, such as the Internet, computers, tablets and smart phones, at school and home. This study seeks to develop a deeper understanding of the roles that digital technologies play in fostering additional language acquisition, which can be attained via communication and information acquisition using digital technologies. This study also aims to examine the processes through which digital technologies can provide virtual spaces or "homes" (McLean, 2010) for English Language Learners (ELLs) whose first language is Arabic. These virtual spaces would provide a safe environment for ELLs to develop English as a second language among a group of



online group members that prove accepting and collaborative. This study also aims to examine whether biliteracy can be attained through out-of-school practices with digital technologies.

Recent research has increasingly focused on understanding how young people are incorporating digital technology into their lives, and the types of literacy learning that take place with the use of new technologies (e.g. Hagood, Leander, Luke, Mackey, & Nixon, 2003; Ito, Horst, Bittanti, Boyd, Herr-Stephenson, Lange, 2008; Sefton-Green, 2006). Yet, the study of literacy with digital technology in the U.S. has not given much emphasis to the practices of young children whose first language is not English notwithstanding their current demographic importance in the United States (Project for Excellence in Journalism, 2009).

Research shows that the number of self-reported Arabic speakers in the U.S. has increased over the past 30 years. According to Ortman and Shin (2011), there is an estimated percentage of 288.6 increase change in the number of Arabic speakers in the United States between 1980 and 2009 (see Table 1.1). Ortman and Shin also provided projected numbers of Arabic speakers in the U.S., which presented an increase in the numbers in the next few years (see Table 1.2).

Table 1.1

*Number of U.S. Arabic Speakers at Home (1980 – 2009)*

Characteristic	1980	1990	2000	2006	2007	2008	2009	Percentage change 1980-2009
Population 5 years and older	210,247,455	230,445,777	262,375,152	279,012,712	280,950,438	283,156,079	285,797,349	35.9
Spoke only English at home	187,187,415	198,600,798	215,423,557	224,154,288	225,505,953	227,295,534	228,699,523	22.2
Spoke a language other than English at home	23,060,040	31,844,979	46,951,595	54,858,424	55,444,485	55,860,545	57,097,826	147.6
Spoke a language other than English at home <sup>2</sup>	23,060,040	31,844,979	46,951,595	54,858,424	55,444,485	55,860,545	57,097,826	147.6
Spanish or Spanish Creole	11,116,194	17,345,064	28,101,052	34,044,945	34,547,077	34,615,394	35,468,501	219.1
French (includes Patois, Cajun, Creole)	1,550,751	1,930,404	2,097,206	1,997,618	1,984,824	1,973,531	1,964,556	26.7
Italian	1,618,344	1,308,648	1,008,370	828,524	798,801	782,173	753,992	-53.4
Portuguese or Portuguese Creole	351,875	430,610	564,630	683,405	687,126	661,120	731,282	107.8
German	1,586,593	1,547,987	1,383,442	1,135,999	1,104,354	1,121,465	1,109,216	-30.1
Russian	173,226	241,798	706,242	823,210	851,174	860,568	881,723	409.0
Polish	820,647	723,483	667,414	640,265	638,059	616,492	593,598	-27.7
Hindi <sup>1</sup>	(NA)	(NA)	317,057	504,607	532,911	562,587	560,983	(NA)
Chinese	630,806	1,319,462	2,022,143	2,492,871	2,464,572	2,473,968	2,600,150	312.2
Korean	266,280	626,478	894,063	1,060,631	1,062,337	1,048,400	1,039,021	290.2
Vietnamese	197,588	507,089	1,009,627	1,207,721	1,207,004	1,236,419	1,251,468	533.4
Tagalog	474,150	843,251	1,224,241	1,415,599	1,480,429	1,496,208	1,513,734	219.3
Arabic	217,529	355,150	614,582	732,519	767,319	780,995	845,396	288.6

*Note.* Adapted from *Language projections: 2010 to 2020*, p. 18, by J. M. Ortman and H. B. Shin. Paper presented at the annual meeting of the American Sociological Association.

Table 1.2

*Projected Population of U.S. Arabic Speakers at Home in the U.S.: 2010, 2015, and 2020*

Number of Arabic Language Speakers in the U.S. (in thousands)	2010	2015	2020
5 – 17 years	176	192	198
18 – 24 years	102	110	110
25 – 44 years	324	373	409
45 – 64 years	182	212	232
65 years and over	80	109	147
Total	865	996	1,096

*Note.* Adapted from *Language projections: 2010 to 2020*, p. 18, by J. M. Ortman and H. B. Shin. Paper presented at the annual meeting of the American Sociological Association.

In order to respond to the needs of the growing number of Arabic speakers in the U.S. and the importance of Arabic for Arab immigrants in the U.S., many private and public charter schools have been established around the country. The status of Arabic in the world and in the

United States signals the significance of studying Arabic literacy and the role of digital technologies in the literacy development of Arab adults and children.

There are a myriad of research studies that discuss literacy in children's early years (Buckwalter & Lo, 2002; Reyes, 2006; Reyes & Azuara, 2008; Reyes, Laliberty, & Orbanosky, 1993) and digital literacy with youth (Carrington, & Marsh, 2005, Eshet-Alkalai, 2004; Ito, Horst, Bittanti, Boyd, Herr-Stephenson, & Lange, 2008; Mahiri, 2003). Research on emergent biliteracy and digital literacy (Digital Biliteracy), specifically with the proposed population, in the United States is scarce. Many researchers have focused on the practices of Latino youth (e.g. Buckingham, 2007; Fitzgerald and Debski, 2006; Lee, 2006; Rubinstein-Avila, 2007; Warschauer, 2007) and Asian Americans youth (Lam 2004, 2006; Lam & Rosario-Ramos, 2009; Lam, & Warriner, 2012; Walsh, 2007) but very few have studied the practices of Arabic-speaking youth and children in particular. Therefore, the primary purpose underlying this study is to contribute to scholarly understandings of digital biliteracy development among young Arab immigrant/transnational immigrant children in the U.S.

### **1.5.3 Research Questions**

This study attempts to answer the following questions:

1. In what ways do pre-kindergarten teachers in a bilingual school in Southwest Texas describe the role of technology and its impact on Arab immigrant and transnational immigrant children's biliteracy development?
2. What is the role of family/home outside of school learning in the process of digital biliteracy development?
3. What is the role of digital literacy in the biliteracy development among Arab immigrant and transnational immigrant children?

#### **1.5.4 Significance of the study**

This study explores Arabic/English biliteracy development as mediated by digital technologies. This study intends to provide useful and relevant information to literacy researchers and digital technology scholars who are interested in the digital practices of bilingual immigrant/ transnational immigrant children. It examines digital biliteracy among Arab children as important to researchers interested in the digital literacy practices of immigrant and ESL learners, providing a deeper understanding of emergent biliteracy development through digital technology.

In addition, this study reveals valuable relationships and applications of digital technologies in learning and social interactions among immigrant and transnational immigrant children. It contributes to existing research in the field by addressing a population that is not adequately researched, and help advance a theory that brings the field of digital literacy and literacy/biliteracy together. Implications of this study largely speak to the educational policy in the United States with respect to the need for incorporating Arabic as a language in public schools. This can be done by expanding the use of digital technologies to allow translanguaging (Definition in section 1.7) to take place, at the same time as providing professional development to educators on the use of digital technologies to support biliteracy development. Moreover, the study provides implications for researchers and possible ways to study Arabic-speaking populations in the United States and beyond. In addition, there are implications to practice and educators on the ways they can help Arabic-speaking children and youth at the schools, through the use of digital technologies to assist both the children and the teachers, to learn about their culture in order to provide a culturally responsive pedagogy and maintain the children's funds of knowledge.

The results of this study may benefit ELLs educators and curriculum planners who deal with Arab children in the United States and wish to incorporate these students' life worlds into school practices to provide alternatives to the out-of-date print materials. In addition, the results of this study inform bilingual populations across different linguistic groups. Finally, parents may find the results of this study useful in understanding that their children's digital practices offer valuable opportunities for supporting children's personal, social and intellectual development contrary to the normalized view of digital practices as waste of time. By challenging this normalized view, the results of this study indicate and identify new avenues for language learning.

## **1.6 Definition of Terms**

In this section I define key terms used in the study.

### Digital Literacy

*Digital literacy* is understood as the person's ability to navigate information using digital technologies (Buckingham, 2010; Eshet-Alkalai, 2004). Eshet-Alkalai (2004) argues that digital literacy is useful to examine a learner's ability to use the digital environment in a way that lends itself useful for scholars and developers in producing user-friendly and safe online environments.

### Digital Biliteracy

I coined this term to refer to a student's ability to develop literacy in any two languages by communicating and accessing information through different digital technologies in and outside of school. The types of information that the child can access may vary and include information about their own cultural backgrounds and funds of knowledge.

### Transnational Immigrant

For the purpose of this study, I use the term *transnational immigrants* to refer to people, Arabs in the case of this dissertation, who are living in the United States, whether they are intending to stay for a short period of time (for the purpose of education), are working but have the intention of going back to their home countries, or are living in the United States temporarily for other reasons.

### Immigrants

I use the term *immigrants* to refer to people, Arabs in the case of this dissertation, who are American citizens, living in the United States permanently and do not plan to return to their home countries at the present time. This term is used for the purpose of distinguishing between transnational immigrant Arabs who came to the United States with the intention to return to their home countries (and still do during the time of the study) from immigrant Arabs who came to the United States to establish their lives and live permanently in the U.S.

### Translanguaging

Hornberger and Link (2012) define *translanguaging* as the way “bilingual students communicate and make meaning by drawing on and intermingling linguistic features from different languages.” (p. 240). Borrowing from Garcia (2009) and Baker (2011), I use the term translanguaging to refer to communications through digital technologies that acknowledge bilingualism and languaging bilingually, and I consider them as a valuable system of communication. Some of the advantages of translanguaging involve the student’s ability to

cultivate language skills in the languages being exposed in order to become a proficient bilingual/biliterate person.

### Transnationalism

This dissertation study examines Arab immigrants'/transnational immigrants' use of digital technologies to maintain familial ties with their home countries in the United States. Thus, it is important to look at the participants' experiences from a transnational perspective. Borrowing from Levitt and Glick-Schiller (2004) and McGinnis, Goodstein-Stolzenberg, and Saliani. (2007), I use the word *transnationalism* to refer to the way in which Arab immigrants/transnational immigrants use digital technologies to live their lives across borders and maintain ties to their home countries and with relatives in other countries, which are geographically distant.

### Generation

The term generation in this study embodies the time that a person has spent in the United States. A *first-generation immigrant* is the person who immigrated to the United States during their adulthood and became permanent residents of the country. Second generation immigrants are the children of first generation immigrants who were born in the United States and thus are considered as U.S. citizens.

### Family/ home literacy

I use the term *family literacy* to account for the social and cultural textual practices that the participating children's families engage in. These practices include print and digital uses of text

and language whether these uses are coincidental or purposeful.

### Emergent literacy

*Emergent literacy* refers to “the development of the ability to read and write written texts” (Purcell-Gates, 2001, p. 8). Whitehurst and Lonigan (1998) argue that emergent literacy is a developmental continuum of learning to read and write written texts rather than an all-or-none phenomenon that begins when children start school. Yet, separating written and oral language in emergent literacy research is not possible because the emerging knowledge that results from engaging with written text influences the development of oral language too (Purcell-Gates, 2001).

## **1.7 Organization of the Study**

This study is organized in seven chapters as follows. Chapter 2 reviews the literature on Arabic/English language learning by immigrants, digital literacies at home and school and digital literacy as a resource for shaping cultural and identity formation of immigrant youth. The chapter starts with a historical overview of language learning in the United States and views of Arabic as a minority language. I then examine research that has focused on the experiences of youth in using digital technologies in the contexts of home and school. I also review the relevant literature on the role of digital technologies in shaping cultural identities. The chapter concludes with a theorization of digital biliteracy and frames this concept within the available literature on digital literacy, new literacies, multimodal literacies and sociocultural theories of learning.

In Chapter 3, I describe the methodology employed in this study, drawing on qualitative case study designs. I justify the use of the case study approach to do research on literacy/biliteracy with children, and describe the research design. Procedures used for data



collection and analysis are also described. In addition, this chapter discusses methodological issues surrounding my multiple and evolving roles at the context of the school and children's homes, including my possible participation in a longitudinal study at the school.

Chapter 4 includes a description of the contexts of the study, the school and the Arab community. A description of the school and the classroom context of the study provide an overview of how biliteracy is perceived by the teacher in the school and their pedagogical practices that contribute to the Arab children's biliteracy development. The chapter also includes a description of the Arab community, the objective being to contextualize the study to provide a description of the Arab community and their professional, religious and cultural orientations that may contribute and/or affect the value of the Arabic language. The chapter also describes the participants and their families and provides detail about their lived experiences around digital technologies.

In Chapter 5, I present the results of the study as they pertain to the research questions. I examine the nature of participating children's use of digital technologies in the context of the school as supported by the teachers and what the teachers think about their use as relevant to their biliteracy development in Arabic and English. I also explore the uses of digital technologies at the children's homes and the ways in which their parents view digital technologies' role in their children's biliteracy development.

In Chapter 6, I discuss the results of the study and provide implications for practice (as relevant to educators and parents), research, and policy.

Chapter 7, the final chapter, summarizes the major findings of the study. Based on the findings and discussion in the previous two chapters, I discuss the limitations of the study. I conclude with a description of the future directions for research that should be pursued in order

to better understand the digital biliteracy experiences of Arab immigrant and transnational immigrant children in the United States.

## **Chapter Two: Review of Research and Related Literature**

### **2.0 Introduction**

In this chapter, I review the literature on digital literacy, with particular emphasis on the benefits of digital technologies in helping children become early biliterates. Section 2.1 discusses the nature of digital literacies and their implications for learning. The section also discusses the relationship between New Literacies, Digital Literacies and Multimodal Literacies and how literacy has expanded beyond its association with print. Section 2.2 discusses two forms of learning, namely print and digital and how each form is unique and complementary in nature to the other form. It also situates digital literacies as the new form through which meaning is presented nowadays and to which the new generation of learners identify more. Section 2.3 examines two contexts in which digital literacies occur: the school context and the out-of-school context. This section explores the uses of digital technologies at schools, and the existing debate on digital technologies' access and use among different age groups and school subjects.

Section 2.4 considers digital literacy as a resource for shaping the cultural identities of immigrant children. It situates literacy as a sociocultural practice and traces the use of digital literacies by immigrants in different social contexts and for different purposes that may lead to learning. In addition, the section reviews the recent literature on identity construction and the effects of digital technologies in the construction of immigrants' identities. Section 2.5 considers the literature that examines literacy development of Arabic and English in Arab countries. The section provides a brief history on the importance of Arabic and the increase of literacy rates during the past decade. The section also presents a brief history of current importance given to English and discusses the status of English language teaching in Arab countries. Finally, in

section 2.6, I propose the digital biliteracy framework that guides the analysis of the data in this study and introduce it as a notion that relates to the experiences of Arab children in the United States. Section 2.7 provides a summary of the conceptual tools that guide this dissertation study.

## **2.1 Sociocultural perspectives on Literacy and Learning**

Sociocultural theories of learning (Lave & Wenger, 1991; Lemke, 1990; Wertsch, 1991; Vygotsky, 1986) and literacy (Scribner and Cole, 1981; Heath, 1983; New London Group, 1996; Street, 1984, 2000) highlight the relationship between the integration of digital technology and culture, and linguistic development. Researchers have used sociocultural theories of learning and sociocultural perspectives of literacy to understand the different ways in which young children learn about their own culture through digital technologies and how what they learn is influenced by the specific types of activities that they usually participate in (Lam & Rosario-Ramos, 2009; Smythe & Neufeld, 2010). Sociocultural theories of learning suggest that children need to engage in meaningful interactions in order to appropriate thinking and problem solving tools for their needs (de la Piedra, 2009; Wertsch, 1991). In addition, multimodal approaches to learning and literacy assume that language is partial, and meanings are made and received through a variety of modes for meaning-making including gestures, speech, images, music (Kress & Jewitt, 2003). Kublin, Wetherby, Crais, and Prizant (1998) describe Children's learning process as "being embedded within social events and occurring as a child interacts with people, objects, and events in the environment" (p. 287). In addition, sociocultural theories of learning suggest that children need to engage in meaningful interactions in order to appropriate thinking and problem solving tools for their needs (de la Piedra, 2009; Wertsch, 1991).

### **2.1.1 Situated Learning Theory**

Situated Learning Theory (Lave & Wenger, 1991) considers the social engagements that provide useful contexts for learning. Situated Learning Theory posits that learning is unintentional and situated within authentic activity, context, and culture. A useful feature of this theory is its implicit suggestion that considers learning a result of being in the social world and being presented with knowledge within settings and contexts that would normally involve that knowledge. Hence, learners engage in the context of learning through social interaction with the broader social world that is relevant to their cultural background. Social interaction and collaboration are essential components of situated learning where learners become involved in a “community of practice” (Lave, 1988). Jewitt (2008) argues, “connecting the students’ literacy experiences and knowledge translates into teachers’ permitting authorized fragments of students’ lives into the classroom” (p 254). This act invites multi-literacies into the classroom, which invites the students to explore relationships between the communicative environments of the school and the home.

Farr (2010) argues that recognizing a particular population’s abilities “enable teachers and other educators to build on the group’s strengths and to adapt instruction appropriately to make it more effective” (p. 45). Therefore, by adopting a situated learning approach, employing digital technologies as tools for mediation between the child’s culture and the dominant culture in the U.S. can enhance children learning and literacy development. This mediation would facilitate the child’s emergent biliteracy development and prospect as they get to relate to their culture and funds of knowledge while assimilating into the dominant culture. In this process, the children would be constructing dynamic cultural flows (Medina, 2010) through continuous access to their own culture via digital technology.

### **2.1.2 Multimodality and Multiplicity of Literacy**

In this section, I provide an overview of the multiple modes and natures of literacy. First, I provide an overview of the early mode of literacy, which was mainly print in nature. Then, I discuss the integration of digital technologies to provide digital literacy. Lastly, I discuss how literacy is multimodal; and is formed across multiple modes, including print and digital. Literacy and technology can be socially and culturally situated. Over the past two decades, there has been a shift in the way literacy is viewed, from representing conventional reading and writing print text only to an expanded view of reading and writing in multiple contexts and forms of digital texts (e.g. NCTE, 2003; New London Group, 1996). This expanded view of literacy as multiple involves various forms of reading and writing using digital technologies that are entrenched in new social contexts and practices that create and use text in a multimodal fashion. Research in literacy development as a human tool has indicated that being literate involves the mastery of knowledge and skills that are seen as valuable in different contexts and through varied modes. Thus, one common way to be literate today, where much of what happens in society is presented by digital technology; can be through the use of digital technologies. However, the expanding role of digital technologies on literacy development entails the person to be up-to-date on digital innovations and developments.

#### **2.1.2.1 Print Literacy**

The function of print literacy takes the shape of printed alphabetical texts that are usually used to measure children's literacy levels at schools (Hassett, 2006). In 1998, the National Research Council associated the reading difficulties that students face at schools with the ever-lasting advent of technologies in society and claimed basic print reading skills as the solution for this difficulty. Similarly, NCLB, in outlining the essential elements of early literacy instruction,

has put great emphasis on traditional print literacy (US Department of Education 2002), which in fact neglected the growing demand of technology in the lives of today's students.

Ecalte and Magnan (2008) studied the effects of print exposure on French children's literacy skills. They studied the impact of print exposure on literacy skills at several stages of school education, from grades one to five. In order to do so, they conducted a longitudinal study to examine the role of print exposure in the students' abilities to read, identify letters and recognize words. Ecalte and Magnan concluded that print exposure contributes to orthographic processing. Consequently, they argue that when children read more, their knowledge of vocabulary progresses, their reading and spelling processing become more efficient and its outcomes increase and, therefore, they tend to like reading. Justice, McGinty, Piasta, Kaderavek and Fan (2010) conducted a study to establish the usefulness of teachers' use of a print-referencing style during whole-class read-alouds. The purpose of using print referencing style was to improve four and five year old children's print knowledge development. The authors used different specific child level moderators, namely age, initial literacy skills, language ability, and setting level moderators (specifically: type, instructional quality, average level of classroom socioeconomic status, teachers' education level and teachers' experience) to determine whether these influenced the relationship between teachers' use of a print referencing style and children's print-knowledge development. Justice et al. (2010) concluded that print-referencing style of reading had significantly increased the children's print knowledge scores. Therefore, emergent literacy interventions and print-focused read-alouds have positive impacts on children's literacy development.

### **2.1.2.2 Digital Literacy**

Digital technologies offer digital spaces for biliteracy development through the different possibilities for oral discourses, and its new characteristics that are interactive. Digital literacy can be quite different in nature and quality from print literacy, even with the inclination of educational contexts nowadays to use new technology to reproduce practices of print literacy. Bawden (2001), Buckingham (2007) and Kress (2003) frame literacy as not a single mode of reading and writing but as multiple. Nowadays, many students in all ages study while listening to a CD or searching on the Internet for information. While technology is available at school, the majority of youth have better access to it outside the school context, which diversifies their opportunities to engage in digital literacy practices and literacy development. Bawden (2001) defines digital literacy as the ability to understand and use information in multiple formats from a wide range of sources when it is presented via digital machines such as computers, ipads, smart phones, tablets, etc. They argue that this ability requires that the user is able to acquire the skill of finding information as well as use that information and apply them in their daily lives as appropriate. Yet, Bawden asserts that the uses of digital technologies bring about profound realities and information, which requires the ability to filter this information according to their reliable source.

Digital literacies are building on print literacies, but also represent something new related to cultural complexities in the ways we live our lives. Therefore, understanding the function of digital literacy and studying its uses in and out of schools calls for an understanding of what it means to be literate today. Eshet-Alkalai and Hamburger (2004) proposed a conceptual model of digital literacy that consisted five major digital skills including:



“... photo-visual skills ("reading" instructions from graphical displays), reproduction skills (utilizing digital reproduction to create new, meaningful materials from preexisting ones), branching skills (constructing knowledge from non-linear, hypertextual navigation), information skills (evaluating the quality and validity of information), and socio-emotional skills (understanding the "rules" that prevail in cyberspace and applying this understanding in online cyberspace communication) (p. 421).

Eshet-Alkalai and Hamburger (2004) offer a definition that encompasses the skills that people of different ages need in order to perform digital literacy tasks efficiently. In addition, Casey & Bruce (2010) provided a definition of digital literacy as “the ability to understand and use information in multiple formats from a wide range of sources when presented via computers” and involves “pupils and teachers using digital technology to enable, sustain and enrich all aspects of the inquiry cycle of learning as: ask, investigate, create, discuss and reflect”. Casey & Bruce (2010) further argue that literacy is more than simply being able to read, because it has always meant the ability to read and understand the meaning of what is being read.

During the International ICT Literacy Panel (2002), discussion around digital technologies revealed that considerably different skills are needed in order to promote success in society than in the past (CEO Forum, 2002). Digital literacies relate to changes in the ways we learn and relate to information, as well as to challenges of competencies needed to be a citizen in digital societies. Such literacies are detailed by the social practices that people are involved in when using digital technologies in different ways.

As with all educational tools, student interest in digital technologies is a factor in learning. The National Association for the Education of Young Children and the Fred Rogers

Center for Early Learning and Children's Media (2012) propose that:

“Early childhood settings can provide opportunities for exploring digital cameras, audio and video recorders, printers, and other technologies to children who otherwise might not have access to these tools. Educators should also consider the learning and creative advantage that high-quality interactive media can bring to children, especially when combined with skillful teaching and complementary curriculum resources that work together to accelerate learning and narrow the achievement gap between children from low-income families and their more affluent peers,” (p. 4).

This recommendation came in response to the need to make children's early stages of development more fruitful in terms of digital technology skill acquisition. In addition, Hull and Schultz (2001) assert that online learning practices have been successful in stimulating learners' interests and collaboration efforts as it is to be done in their own leisure time. They note that these new generations need self-directed learning opportunities, interactive environments, multiple forms of feedback, and assignment choices that use different resources to create personally meaningful learning experiences. Moreover, Lewis (2006) and Davies (2007) find that these students want more hands-on, inquiry-based approaches to learning and are less willing to simply absorb what is put before them.

### **2.1.2.3 Multimodal Literacy**

Print, whether in the form of books, newspapers, or other documents, is increasingly being complemented, and in some settings replaced, by digital texts (Hayles, 2007; Jones, 2007; Warwick, 2004). While the inception of print provoked vital alterations in the way people perceived and performed reading and writing, the age of digital technologies indicate a shift in

the way people read and write and the understanding of what it means to be literate in the digital age. The changes that digital technologies have inculcated have been discussed across many domains including education and business. Karim and Hasan (2006) studied the reading habits of undergraduate IT and Arts students in Malaysia and found that the Internet has increasingly been considered a main source for reading. In addition, Pearson and Young (2002) stated, “Technologically literate workers are more likely than those lacking such literacy to have a broad range of knowledge and abilities, such as the critical thinking skills” (p 40-41). The use of various modes in order to achieve literacy represent the idea of multimodality.

Multimodal literacies are seen as important constituents of today’s educational processes. Multimodal Literacies provide approaches to literacy development that study the ways various semiotic means are used to participate in digital literacy practices. The Multimodal theory (Kress and Jewitt, 2003) describe the role of modes in meaning making and how these modes affect the meaning of a material’s use to represent the elements that belong to the culture of its members, how these elements operate together, how people use them as resources to create and represent meaning and how they create and organize those representations in a textual format. Gee (2004) considers multimodal literacy and new literacies to be redefining the concepts used to define what it means to be literate. To represent thie nature of multimodality, Serafini (2012) conceptualized a model of multimodal reading as a social practice. The author argues that the multimodal reader-viewer interact with text that is viewed in a digital form with four different social/resource practices; as a navigator, interpreter, designer and interrogator. Serafini concludes that classrooms are sites for the production of meaning and the use of multimodal texts allows learners to consider the historical, cultural and social contexts in which meaning is situated.

In a contrasting study between print and visual literacy, Garrett-Petts (2000) used several examples of children's literature to explore the status of print literacy and how people perceive its importance in school and out-of-school contexts. Garrett-Petts acknowledges the importance of visual literacy in the form of picture books and argues for the need to carry this tradition along the educational ladder. In other words, students need not be restricted to particular forms of literacy that only carry words and leaves pictures out, as if they are suitable for children only. This argument has been further supported by his reference to new technologies such as photography and film in order to expand the capacity of the revolution in using digital technologies to provide 'rich perceptual experiences'. In addition, Hassett (2006) compares print-literacy programs which are used at elementary schools with possible emerging literacies that evolve from the use of new technologies and forms of text that are digitized in nature.

Hassett (2006) concluded that:

"non-relativistic permanence of traditional print literacy can be challenged through a new politics of truth, which acknowledges that reading strategies, cueing systems, concepts about print, writing processes, and systems of reasoning in general did not transcend from above, but are instead historical, cultural, and interminably technologized," (p. 155).

By politics of truth, Hassett refers to the new forms of representing text through technology, dominated by image and multimodal ways of interpretation.

In addition to its importance for use with learners of all ages, research has addressed the importance of multimodal literacies in the lives and experiences of pre-school children. Flewitt (2008) asserts that multimodal approaches are useful to define literacy in the lives of young children. In a study he conducted with preschool children, Flewitt (2006) studied the children's

use of different multimodal practices, such as movement, gesture and talk, to support meaning making. Flewitt revealed that there is a robust association between the need to communicate within a particular context and the modes the children used to communicate their meaning. She concludes that the children's use of multiple semiotic modes for communication was intentional and provoked by the social activities they engage with. Moreover, Binder and Kotsopoulos (2011) studied Kindergarten children's multimodal interactions with text in Canada. The authors argue that children's multimodal practices were major factors for revealing their understanding of the text and to communicate their understanding in different modes. Binder and Kotsopoulos conclude that multimodal practices offer children opportunities to show the importance of being part of a social group that supports a nontraditional form of showing literacy development. Recently, Shoukry, Sturm, & Galal-Edeen (2012) conducted a study in Egypt to investigate preschooler's use of digital devices to learn Arabic and English. The study concluded that digital technologies are available to address and teach English more than Arabic as a result of inept institutional environment of Intellectual Property Right (IPR) protection, which affects invention and investments in Arabic software. Yet, the global capital of the English language makes it hard to provide Arabic literacy software in the same capacity, even with strong investment in these.

Roberts (1995) referred to print literacy as basic literacy that entails decoding words from paper. Yet, Roberts acknowledges the prominence of digital text, which complements print texts and argues that changes are needed in the way people conceive of and practice reading and writing. A couple of years later, Kress and Van Leeuwen (2001) argued that meaning could be expressed in different semiotic modes and that people learn through interaction between ranges of representational and communicational modes including image, animated movements, writing,

speech and gesture. In addition, Kress (2003) promoted a multimodal view of literacy and learning that is key to understanding newer digital forms. Besides, Lo Bianco (2000) framed multiliteracies as a mode of learning that seek to address the fundamental disparities of cultural and language differences within the diverse systems of modality that include print literacy such as books as well as digital and visual literacy.

Researchers have also looked at the role of out-of-school multimodal literacies on school literacies. Walsh (2007) describes students' multimodal literacy efforts in a span of two years within a small school in New York City's Chinatown. He depicts the results of his efforts to incorporate students' out of school digital technologies practice into the classroom with twelve and thirteen year-old first and second-generation Chinese students. Walsh asked these students to design websites that present online tutorials and included individual as well as collaborative efforts to exhibit "co-deployment of resources from language and other semiotic systems" (p. 79). Walsh believes that these websites signify a hybrid form that recombined semiotic modes and demonstrated the students' abilities as multimodal designers who succeeded in incorporating the use of digital culture. This experience, according to Walsh, has facilitated his understanding of multimodal teaching and emphasized the role of the teacher in encouraging students to utilize their digital literacy skills in the classroom. This, in turn, would provide a shift in the focus of literacy instruction and recommends allowing students to use out of school literacy practices within the context of school subjects which can improve their understanding of the topic and connect the students' school based literacy practices to their life worlds.

Wei (2011) describes the experiences of British-Chinese children in complementary schools in Britain and their multicompetence, their multilingual and multimodal practices in learning ethnic languages in these schools. These schools were established to teach literacy in the

heritage languages. Wei argues that the multimodal system that the school adopts, utilizing sound, vision, gesture, and digital forms of literacy experiences provides an interactive environment that utilizes knowledge in different languages. Code switching is used as a major tool for developing multilingualism in English and Chinese language. Moreover, McGinnis et al. (2007) study three immigrant youth from different transnational experiences in their use of multimodal textual practices to create their online identities. They investigate the personal web pages and blogs of three high school students in suburban communities of New York City coming from different geographical positions, a Bengali-American male, a Colombian female, and a Jewish-American female. In particular, the researchers are interested in these students' efforts to develop social relations and create large-scale communities of practice through their online literacy practices. They indicate that Digital literacy for these immigrant teenagers continue to be multimodal by integrating the use of words with images, sound, video, hybrid language, and multilingual words. McGinnis and her colleagues (2007) reflect on the different modes, meaning making, and messages of the youths' blogs and MySpace accounts and how the content of these mediums remained representative of the youth in expressing and executing multiple identifications. They state that digital literacy practices of these teenager immigrants offered them opportunities to express and describe their multiple identifications. They also claim that students' online spaces illustrated students' efforts to challenge their position as youth living in transnational environment.

Similarly, Smythe and Neufeld (2010) discuss the implementation of digital literacy interventions as an example of multimodal literacy instruction to engage adolescent learners for the purpose of developing academic reading and writing skills in English. In an attempt to explore new strategies that would address the students' different learning needs, they

incorporated digital technology in the form of spoken words, sounds and music besides the traditional pen-and-pencil writing to get their sixth and seventh grade students to produce Podcasts; composing a story and recording it for the purpose of podcasting it into the school website for public use. Smythe and Neufeld (2010) believe that incorporating technology into English language teaching offers promising prospects for digital literacy practices inside and outside the classroom. It offers ELLs with opportunities to critically engage and respond to their social worlds by incorporating their own voice and experience into their stories during the class time as well as during breaks, lunchtime and other leisure times. They argue that this type of Podcast production, while inviting the ELLs to share their differences with others, creates classroom learning-communities that are characterized with high peer support and collaboration.

Evidence from these studies suggests that literacy has extended to include much more than its original association with print, to include one's ability to understand information in any way it is presented whether through print, images, sound, audio, etc. Lanham (1995) looks at literacy in this digital age "to mean the ability to understand information, however, presented," (p 160). In this regard, digital literacy has blended both features of oral discourses and new characteristics offered by more recent technologies. As Kress (2003) has recognized, the design possibilities and literacy implications of multimodal learning with digital technology tools and media represent a convergent focus for language and technology in general, and verbal and non-verbal modes of interaction in particular (Barton, 2007; Street, 1984; Hall, Smith & Wicaksono, 2011).

### **2.1.3 Literacy as a Social Practice**

New Literacy Studies and Multimodal perspectives provide the prevailing theoretical concepts in the study of practices facilitated by digital technologies. New literacies represent



literacy that happens within a digital world and describe literacy as a change in the way different perspectives are being represented and delivered through digital technologies. This shift in representation portrays the potential power of new digital technologies in conveying messages in a critical, analytical and inquisitive manner that integrate the learners' social life. In this section, I provide an overview of literacy perspectives that frame the relationship between literacy and technology from a sociocultural perspective, discussing the tenants of New Literacy Studies that view literacy and digital technologies as socially and culturally situated.

Recent research has considered digital literacy from a sociocultural perspective to learning. Digital literacies have implications for the ways we learn and relate to information. In addition, they exemplify the challenges that people face today to gain the competencies needed to be citizens in digital societies. These digital literacies are demonstrated by the social practices that people are involved in when using digital technologies. Besides their role in complementing print forms of literacies, digital literacies also represent something new, related to the cultural complexities of our lives. Consistent with the New Literacy Studies' views of literacy as multiple or multiliteracies (New London Group, 1996), digital literacies bring together literacy practices that are embedded in social relationships and differ as enacted across time and space (Gee, 2003; Street, 1995). Although digital literacies might not be different from other forms of literacy, which also have a history and were once considered new, they provide opportunities for meaning to flow across sites, from different web and digital spaces, such as the Internet, to the classroom. The digital flow of meaning accounts for an understanding not only of the way texts look, sound and feel but also to an understanding of why, where, when and who made the text (Pahl & Rowsell, 2006). Thus, the multimodal nature of digital literacies and the social practice of literacy that is involved are insinuated by the nature of text and might have effects on the identity

of the learner. Still, digital technologies symbolize a similar attention for language and literacies through verbal and non-verbal ways of communication.

Nicholas (2007) implemented sociocultural and semiotic perspectives on literacy to examine young children's perspectives on the relationships between literacy and citizenship. The authors argue that opportunities for children to learn the knowledge and skills of social involvement are missing in book-reading traditions. Skills such as creating and articulating one's own opinions and developing ways to exemplify one's own knowledge about society and identity are vital in order to prepare children to be social agents in and outside the classroom. These skills are usually available through the use of digital literacies where children and youth can form and voice their opinions and share them with others within organized communities.

Concerns about the disadvantages of digital technologies for users have been also discussed (Bonfadelli, 1994). One concern that has been discussed on a general level is the issue of the digital divide (Norris, 2001; Peter & Valkenburg, 2006; Warschauer 2002). For instance, Peter & Valkenburg (2006) found that adolescents with higher socio-economic status and cognitive abilities mainly used the Internet for information rather than for entertainment compared to those with low socio-economic status and cognitive abilities. While access is not being the main reason for the divide (more discussion in section 2.3.1), research has found that the way digital technologies used is the real issue and challenge to the appropriate access of digital technologies. The issue of inequalities in use results from the differences in digital literacy among users (Hargittai 2002; Warschauer 2002). These differences may cause inherent disadvantage on people's ability to feel included and participate in societal developments, locate information and services, and acquire knowledge through digital technologies (Marr, 2004).

Buckingham (2006) and LoBianco (2000) considered multiple literacies to be far less important to our existence than our ability to understand what we see, to construe what we experience, and to evaluate what we are exposed to. In the end, it would seem far better to have the skills and competencies to understand and differentiate within a common language, to be literate than to be left out, unable to comprehend. Our ability to create information and express understanding in multiple formats from audio, video and music proves that we are talented and can face the challenges of this digital age with informed and logical decisions (Withrow, 2004).

Despite the fact that the vast and varied information that is brought to us through the media and digital technologies is sometimes considered intimidating to us and our children, new technologies and media are merely other ways of viewing our world, of networking with one another, of allowing ourselves to gain knowledge in sphere of prospects that are changing everyday.

## **2.2 Digital Literacies in Multiple Contexts: In and Out-of-School**

While research has shown that digital literacy practices essentially take place outside the classroom, researchers urge teachers to integrate digital literacy practices in the English language classroom in order to provide multimodal learning designs to immigrant students (McGinnis et al., 2007; McLean, 2010; Walsh, 2007). By the same token, Buckingham (2007) argues that the relationship between culture, society and the children's digital world is both viewed and theorized differently inside and outside of school. In addition, studies of how learners' digital practices mediate their language practices outside educational contexts offer an important perspective for classroom teachers (Cruickshank, 2004; Flewitt, 2011; Kern, 2011; Lam and Rosario-Ramos, 2006). This section reviews research that have shed light on the use of digital technologies within and outside-of schools and outlines some of the benefits of using digital

literacies in both contexts, with particular emphasis on English Language Learners and Immigrant youth in the United States.

### **2.2.1 Digital Literacies at the School**

Casey & Bruce (2010) claim that their definition of digital literacy (section 2.2.3) is appropriate to primary schools and has been validated through a study of the classroom practices of eight primary classrooms in Ireland. Yet research revealed that several digital literacy practices challenge the traditional arrangements and structural procedures of schools. O'Brien (2010) argues that school structures are usually incompatible with the purposes of digital literacies. One major obstacle is the traditional system of class scheduling and the organizational procedures of the school. In addition, O'Brien (2010) stated that the digital divide is another obstacle that prevents useful implementation of digital literacies in schools.

#### **2.2.1.1 Equality and Access: The Digital Divide**

Research on digital inequality changed the way the digital divide is conceived, from being an inequality based on owning a computer to an array of inequalities that include access and use of various digital technologies (Selwyn, 2004; van Dijk, 2005). The term digital divide has been widely debated, and there are many disagreements about what it means. There is a myriad of research that addressed the term from the perspective of 'the have' and 'do not have' access to digital technologies (e.g. Bradbrook & Fisher, 2004; Bromley, 2004; Selwyn, 2004; Warschauer, 2003).

Norris (2001) argued that the digital divide refers to inequities of access to technology based on factors of income, education, race, gender, age, geography and ethnicity. However, research has shown that there are some contradictory results for understanding the inequalities to

the access of digital technologies. For instance, Mossberger, Tolbert, and Stansbury (2003) found that African-Americans and Latinos report more positive attitudes toward technology than Whites who share similar socioeconomic status. However, they claim deficiency in computer or Internet access and the skills to use them, even after monitoring educational and income factors. In addition, while age matters, Livingstone and Helsper (2007) argue that even though children around the world are gaining more access to the Internet, most research has focused on adult populations. Livingstone and Helsper (2007) found that there is a digital divide among children, which is caused by different factors such as age, gender and socioeconomic status in relation to quality of access to and use of the Internet. Results showed that boys, older children and the middle class have better access to the Internet than girls, younger children and the working class children. However, the authors noted that boys and older children use the Internet more often regardless of their socioeconomic status.

Warschauer (2002) called for a reconceptualization of what the digital divide entails. The author argues, “Content and language, literacy and education, and community and institutional structures must all be taken into account if meaningful access to new technologies is to be provided”. In other words, the digital divide is not a mere result of insufficient physical access to computers and the Internet but rather a result of physical, digital, human, and social resources and relationships. Another digital divide is emerging between educators, parents and students who think that teaching and learning in the 21st century can be done using technology, and those who do not. Kennedy, Dalgarno, Bennett, Judd, Gray, and Chang (2008) argue that the digital divide between teachers and students seem to relate, not to ownership, but to preferences and prior experiences with technology. Yet, even when some digital technology oriented teachers are interested in implementing features of digital technologies that youth find interesting in social

worlds, they experience institutional opposition because some educators believe that these practices are not suitable for the school context (O'Brien, 2010).

Research has also addressed digital inequalities in schools. Although inequalities with regard to quantity and quality of computer equipment in schools still exist (Cuban, 2001), efforts have been made to narrow these gaps. For instance, Kleiner and Farris (2002) demonstrated how differences in demographic categories of schools with regards to student per multimedia and networked computer, teachers' use of the internet and schools with high speed internet access, have been narrowed. However, the actual use of the digital technologies in schools varied between schools depending on the socioeconomic status. For example, Schofield and Davidson (2004) found that online access in low socioeconomic status schools is given as a reward to high achieving students. On the contrary, Becker (2000) showed that computers are being used in low socioeconomic status school for drills while they are used in high socioeconomic status schools for simulations and research. Warschauer and Kern (2000) also reported that low socioeconomic status students use new technologies for remedial work while high socioeconomic status students use it for more academic purposes. Clearly, the digital divide or inequalities in schools can be observed in the way digital technologies are used rather than access and availability.

Many researchers and organizations have recently recognized the benefits of digital technologies in early childhood settings. Woods and Schweingruber (2009) stated that when educators suitably integrate interactive technology into their classrooms, equity and access are attended to by offering opportunities for all children to participate and learn. Besides, the National Institute for Literacy (2008) recommended that young children be provided with opportunities to develop the early "technology-handling" skills connected with early digital literacy that are similar to the "book-handling" skills associated with early literacy development.

Further, the International Society for Technology in Education (ISTE, 2007) advocates for equipping children with basic skills in technology operations and concepts by age 5. Moreover, To overcome the confusion that usually results usually from the digital divide, both Lewis and Davies express a need to enlighten teachers and educators on how they can become digitally literate and the ways by which they can use the varied features of technology as a tool for student motivation.

#### **2.2.1.2 School-based Digital Literacies and Language Learning**

Digital literacies that took place at schools have heavily contributed to language learning. Although using the computer for language learning has been mostly observed in low SES schools and seemed to take the nature of drills (as discussed in section 2.3.1.1), digital technologies have contributed to the advancement of language learning in schools (Kern, 2011). As interactive tools, digital technologies have provided children and adults with interactive ways for learning language (Resnick, 2002; Greenhow, Robelia, & Hughes, 2009).

The American Council of Teachers of Foreign Languages (ACTFL, 2008) reported that teachers are increasingly using digital technologies in their language classroom. However, while its use for instructional purposes has escalated compared to earlier studies, its use has not increased dramatically and its main use has been for administrative purposes, accounting for about 66% of instructional use. Yet, Kern (2011) described three different uses of digital technology for language learning. The computer is the ‘tutor’ when it presents materials on the screen, and provides language practice tasks, performance analysis and feedback on the tasks the students complete. It is also a tool when students use it to access the Internet to locate resources and materials related to language learning such as blogs, video clips and advertisements. In addition, it is a medium for interaction with others and engagement in various communicative

practices.

In an interview by Clair and Phipps (2008), Gee explained the usefulness of digital literacies and language learning through his research on video games that revealed the valuable connections between oral language, literacy, schooling and society. Gee's research on digital practices brought forward an understanding of their value in schooling. In addition, the digital practices of children revealed the resistance of school-based discourses that refuse to acknowledge and respect the children's digital literacy practices' status. In addition, Gee stated, "kids can use modern technologies to produce and not just consume — they can come to think like designers and have their own opinions about quality" (p. 96).

Flewitt (2011) argues that the shift to new media literacies and the need for digital literacy that incorporates technology literacy will continue to contour the world in which children are developing and learning languages. As tools, digital technologies and interactive media can provide children with opportunities to practice language in the classroom, which can complement their use at home and the wider community.

### **2.2.1.3 Digital Literacy Skills and Age of the Learners**

Depending upon when one is born, people are being categorized differently as related to their use and existence at the time of the digital revolution. People born between 1977 and 1997 are categorized as the Net Generation (Leung, 2004). They are called so because they have been around computers, video games and the Internet since they came to life. They, and the generation that followed them, are considered to be the largest-growing group of digital technologies users and consumers.

Eshet-Alkalai and Hamburger (2004) examined the performance of learners from different age groups, including 11<sup>th</sup> grade high school students, 3<sup>rd</sup> year college students and



college and university adult graduates. The study reported upon the participants' interactions with authentic tasks that demanded the use of the five digital literacy skills of the model that Eshet-Alkalai has proposed (2004). The model comprises five cognitive digital literacy skills (Photo-Visual Literacy; Reproduction Literacy; Branching literacy; Information Literacy and Socio-Emotional Literacy) and was considered as one of the most complete and coherent models for digital literacy (Akers, 2005). Results revealed that the younger the participants, the more they were digitally literate. Similarly, Hargittai (2002) studied the differences in people's online skills in the United States. Hargittai (2002) found that there are generational differences in learners' ability to use the Web, indicating that the younger the learners the quicker they are in completing search tasks on the Internet. The author concludes that young learners are more comfortable using online tools as a result of skills in using the digital devices at their hand.

In addition, Liu (2005) found that young adults are spending more time reading on the Internet and that age is a factor in the tolerance of time spent reading electronic materials, in that the younger the student the more tolerant they are. Lenhart, Arafeh, Smith, and Macgill (2008) stated that 90% of school-age youth use the Internet, with adolescents ages 12 to 17 embodying the prevalent group of users. Hence, the new generations of digital learners are learning, socializing, multitasking, and communicating through technology at a young age. In return, this use of digital technologies in the classroom creates a complex learning environment that provides new opportunities for learning.

#### **2.2.1.4 Digital Literacies, Teachers and the Curriculum**

While each new generation is increasingly using more digital technologies than the one that preceded it, school curriculum and classroom implementations of digital technologies remain limited. In fact, Greenhow, Robelia and Hughes (2009) stated that curriculum standards

shape instructional discourses. Jewitt (2008) explored literacy and multimodality and the changes that are needed at schools for a person to be literate in the 21st century. Jewitt concluded that literacy cannot be separated from the ongoing advancement of digital technologies, consequently, “the ways in which something is represented shape both what is to be learned, that is, the curriculum content, and how it is to be learned” (p. 242).

Research has shown that educational policies view computers as a stand-alone subject that need a curriculum focusing on basic computer literacy skills. For example, Hawkins (2002) argues that while computer literacy represents a start, the incorporation of computers and the Internet into the overall curriculum is where real learning occurs. Hawkins asserts that role of teachers in engaging students in cooperative projects and constructivist instruction, yet school authorities provide minute operational support and encouragement for teachers in order to efficiently use digital technologies in the classroom. Hawkins concludes, “Ministries must make a commitment to helping teachers effectively integrate computers and Internet technologies into their schools by aligning curriculums, exams, and incentives with the educational outcomes that they hope to gain,” (p. 42). Further complicating the situation, arguments about who uses more digital technologies arise. Buckingham (2006) notes that efforts for using digital technologies and games at school have been proposed mostly by English language teachers, and that these efforts ignore the social interactive side of these activities. Yet, Lachs (2000) has reported the use of multimedia by primary school children in learning about geography, science and history. These children were showcasing their learning to other younger children through the use of multimedia materials and websites.

In addition, it is essential to understand the multimodal environment of the classroom in order to create a learning environment that young people in the school are familiar with

(Lankshear & Knobel, 2003). Beeland (2002) argues that an environment where technology is used in inventive ways leads to enhanced learning and teaching. As discussed in section 2.3.1.1, digital technologies alone are not a solution for the digital divide because access to digital technologies is not a solution. The social and human factors that are important for addressing the digital divide can be addressed by reconsidering curriculum design to provide a learning environment that is supportive of multimodality. One way to achieve this is by designing learning objectives that invite and accommodate digital technologies in the classroom. The integration of digital technologies to the learning objectives is essential in order to help teachers see the usefulness of digital technologies to pedagogical and educational gains in the classroom environment and the students' learning (Kirkman, 2002; Hariharan & Maclay, 2002; Hawkins, 2002). Hawkins (2002) and Kirkman (2002) argue that school curriculum is rigid and overloaded, which does not give the teachers the leeway to integrate digital technologies in ways that address the learning goals. In addition, Hawkins argues that teachers need not be intimidated by digital technologies and need to part with their comfortable teaching styles to allow digital technologies a trial in their classroom. In addition, teachers need both formal and informal training on the use of digital technologies not to assign tasks and activities that are not related to the learning goals. Teachers need to be able and confident in their use and integration of digital technologies to their teaching (Hawkins, 2002).

The established structures of schools are frequently unsuited for the purposes and ratifications of digital literacies. However, joint efforts by teachers, school administrations and policymakers can provide working solutions to integrate digital technologies as a core of the classroom activities. However, in order to provide a meaningful environment to which young learners can relate to, research must consider the intriguing relationship between outside school

children's engagement with digital technologies and their connectedness to their experiences at school. Buckingham (2006) stated that children's uses of digital technologies are cultural forms that cannot be neglected inside the school.

### **2.2.2 Out-of-School Digital Literacies of English Language Learners (ELLs)**

A substantial research literature is emerging on situated cognition and the learning that occurs for children and youth in community and out-of-school settings (de la Piedra, 2009; Smythe and Neufeld, 2010; Heath, 1983). Recent research has increasingly focused on understanding how young people are incorporating digital technology into their lives and the types of literacy learning that take place with the use of new technologies (e.g. Hagood, Leander, Luke, Mackey, & Nixon, 2003; Ito, Horst, Bittanti, Boyd, Herr-Stephenson & Lange, 2008; Sefton-Green, 2006). This section, however, focuses only on the experiences of English Language Learners (ELLs) with digital technologies outside of school because, as non-native speakers of English, immigrants' experiences focus mostly on language learning.

Researchers have indicated that exolingual interactions between native speakers and non-native English language speakers in digital literacy interactive environments are important factors for language learning (Belz & Thorne, 2006; Ware & Kramsch, 2005). Lam (2004) has observed an increased sense of comfort, confidence, and fluency in spoken English as a result of socialization in a bilingual and multilingual chat rooms and Black (2005) notes that ELLs' digital practices develop a sense of generosity that promotes the frequency of participation at the same time as providing advice that is free of charge.

Research on the digital literacy practices of ELL adolescents illustrates how they use varied linguistic forms and expressive modes to participate in both local and global social networks. These digital practices offer a supplement to the "English as a second language"

classroom contexts in order to achieve successful participation in social activities and sustain connections between family, friends and beyond using a second language (Lam, 2004; Rance-Roney, 2010; Smythe and Neufeld, 2010). These ELLs benefited from online chat rooms and social networks, as they were able to make friends and communicate using a broader range of transnational English language learners in the United States. In addition, Livingstone (2003) explored the social contexts and home use of Internet with children and found that their access to the Internet and digital technology is more common than that at homes without children. The presence of digital technology devices at home such as computers, tablets, smart phones and video games can create pathway for shifting considerable attention to literacy learning in a fun and enjoyable way.

Digital Jump-Starters (DJs) can be considered a way to bridge the gap between traditional supplementary materials and the need for integrating voice with image to provide ELLs with more vibrant content. Rance-Roney (2010) presents claims that DJs can provide ELLs with the cultural background, literacy skills, and language development needed to access challenging academic texts. She also argues that DJs would offer ELLs with the needed schemata, background knowledge and new vocabulary they need to fully contextualize and understand a new topic. Rance-Roney (2010) asserts that adopting teaching strategies that blend technology with the traditional text, such as multimodal DJs, can offer a useful pathway to construct the essentials of the English language while offering the learner valuable prospects to practice and use English in and out of school simultaneously. This approach may resemble the varied uses of technology in education to address the long-standing quandary of immersing ELLs into mainstream classrooms while concurrently providing and meeting their needs in developing their language and subject contents.

Moreover, Lam (2004) documents Chinese-American adolescents' practices in developing textual identities and hybrid language forms by participating in multilingual online communities. Lam's analysis highlights how the online culture of hybrid language use allowed these teenagers, who felt marginalized from their native English-speaking as well as native-born Chinese American peers in school, to develop confidence and fluency by interacting with a transnational group of youth in English. In particular, she describes how two adolescent Chinese immigrants participated in a Chinese–English chat room and used a hybrid form of English and Romanized Chinese to symbolize their identities and individuality as bilinguals.

Black (2005) explores an online fanfiction composition site (fanfiction.net) that tackles the multilingual writing practices of adolescent English language learners. This research spans over a 3-year ethnographic project of Asian ELLs participating in a Japanese animation (anime) fanfiction composition community that uses their culture to write different pieces of work. In this article, Black highlights how the multinational nature of anime-based fanfiction enables some of the main members on this site to act as cultural and linguistic advisors to other beginner fanfiction writers by providing assistance on how to integrate elements of Asian cultures and languages into their stories and how to develop authentic characters and schemes in fan fiction. The members of the site are also marked by their love for collaboration and building expertise that is free of charge. Through this website, Black (2005) documents the ways learners build their identities as writers by composing texts, creating fan sites, and interacting with each other to solicit and make use of peer feedback. This process, Black argues, helps English Language Learners develop social and intellectual standing by becoming successful writers and users of English. By exploring these affiliations, preferences, and practices of learners in their chosen

environments, researchers can provide powerful insights into how we might change the shape of classroom-based teaching.

McLean (2010) investigates the cross-cultural tensions that a Caribbean immigrant to the United States faces and how this female 10th grade student, Zeek, responds to this challenge. McLean reports on Zeek's online digital technology practices as a way to remain connected to her native country. McLean emphasizes the role of digital technology in facilitating the compression of time and space that provide virtual movement across sociocultural borders as compared to traditional physical movements.

This social network has become Zeek's virtual home where her native language and the English language can coexist and inform each other. McLean states that:

This home is a safe space where she can actively exercise agency in controlling and performing her multiple identities and literacies. The virtual home has become a site of resistance where this young person can redefine the deficit model of herself as immigrant and learner, (p 17).

To this end, McLean argues that educators must be ready to respond to the contemporary classroom needs of blending multimodality in learning and creating "homes" where they can create their identities and find themselves.

Accounts of out-of-school literacy practices are most valuable since they inform our understanding of future literacy practices and pedagogies. These out-of-school practices are important because they stand as simple skills in using different media as well as involve an entirely new culture of peer-to-peer learning, knowledge creation and collective expertise (Hull and Schultz, 2001).

## **2.3 Digital Literacy: Shaping the Cultural Identity of Immigrant Children**

Peoples' modes of working with technology change over time and across different Social contexts. The constant socializing and participation in digital networks affect one's identity development as a result of the continual engagement with people of different backgrounds and cultures. In this section I investigate the usefulness of sociocultural theories in explaining the effects of digital literacy on people's identities. First, I provide an overview of the theories and how they have been used to study digital literacy. Then I review some of the research on immigrants' identity development with the use of digital technologies. I focus on immigrants because this group usually interacts with different people from their home and host countries and experience cultural and identity shifts through their interactions.

### **2.3.1 Digital Literacy Among Transnational Immigrants**

Immigrants and transnational immigrants in the United States use digital technologies as means for organizing social relationships with friends and families, and to get involved with news and media products across their home and host countries. This socialization, whether directly or indirectly, offers them opportunities develop literacy in their home language and their second language.

Cruickshank (2004) investigated the literacy practices of four middle aged youth and their families living in Arabic speaking suburbs in Australia. He studies the teenagers' writing and reading behaviors outside of school to exemplify their literacy practices at home. He documents that the frequency of reading and writing children did outside of school was quite wide-ranging even though their teachers were inclined to label them as non-readers. Cruickshank observed that the literacy practices of the children, as well as their parents, changed with the accessibility of new technologies.



In addition, Cruickshank (2004) asserts that the presence of a computer in all of the participants' households created a change in the use of digital technology from visual to text, particularly through the use of the Internet and chat-rooms. He claims that this move made possible the expansion of a different range of writing, reading, and perceptual skills amongst the youth. Moreover, the article traced the impact of mobile phones on increasing the children's expertise in instant messaging. In addition, Cruickshank (2004) emphasizes the influence of the families' adoption of technology-mediated communication in the four-year period on children's literacy practices.

Lam (2006) explores language and literacy practices among immigrants in the United States. Lam conducted a study of 35 transnational adolescents in the United States and explored their digital literacy practices and use of the Internet to maintain social relations with their friends and family in their home-countries and to participate in social activities online. In particular, she looks at the ways in which diverse languages may be used in transnational social and information networks. Lam also explores the prospects for language learning and preservation arising from the young immigrants' digital activities and discussed the types of literacies that are promoted through consulting media information and social relationships across societies. Lam argues that the digital literacy practices of immigrant students may expose them to "social experiences and political viewpoints that are not confined to one single social system" (p.172), which can provide a basis for re-assessing educator's understanding of multilingualism as a resource for community and transnational acceptance. The researcher claims that the use of digital literacy has exceeded previous expectations of maintaining relationships with family and friends in the home country to a larger diaspora of people from different countries and origins.

Moreover, Lam and Rosario-Ramos (2009) investigated how migrant youth from diverse origins employ digital media “to organize social relationships with friends and families, and engage with news and media products across the United States and their native countries” (p. 174). The authors conclude that digital technologies are major tools and spaces for youth for socialization across territorial boundaries. Immigrant youth are constantly using digital networks to maintain and create relationships and obtain information across their ‘home’ and ‘host’ societies, and beyond. They do so by mobilizing multiple languages. Similarly, Ellison, Steinfield and Lampe (2007) studied the link between the use of Facebook and the construction and continuation of social capital, ponding and maintenance of social relations with friend and geographically distant family members. Ellison et al (2007) concluded that the social networks are useful for supporting family and friend relationships and increased their psychological well-being, self esteem and life satisfaction.

### **2.3.2 Identity Formation through Digital Literacy**

Previous sections have examined the role of digital literacies in learning. This section reviews research focusing on the role of digital literacies in the creation of youth identity. Digital technologies provide potent instruments for learning as well as creating, maintaining and sharing identity. Activities around, and using, digital technologies are socially significant and contribute directly to the development of meaning and identity. In today’s digital social world, identity is constantly changing, and is neither restricted to a place, defined by nationhood, nor shaped through actions and relationships. Accordingly, identity, which refers to one’s ability to belong to a certain group (Abrams & Hogg, 1988; Deaux, 1993; Hinkle & Brown, 1990), can be also constructed though digital sociocultural activities that a person participates in that they acquire the sense of belonging to that group.

Merchant (2005) argues that the discourse surrounding new digital technologies has highlighted technical and informational structures. Unfortunately, this has tended to divert our attention from the nature of the digital communications, multimodalities and new literacies that surround children's involvement with digital technologies. Clearly, children's engagement and communications through digital technologies are "social in nature and is contributing to a re-evaluation of identity and interaction" (Merchant, 2005, p 302). Likewise, Walsh (2007) and McGinnis et al. (2007) suggest that the creation of multimodal texts continues to be particularly important in promoting self-identity, creativity, as well as collaboration among youth. These studies supported efforts to make literacy practices in educational program instruction relevant to students' lives outside of school.

Besides, new digital literacies are one form that may be very relevant to people's practices with digital technology nowadays and could be useful to affirm that what students bring to the classroom can help produce knowledge and put that knowledge into practice. Learning can be understood in a more practical way if it is documented through a consideration of both similarities and differences between the learning processes inside and outside of school and focused on the study of the complex relationships between them.

According to Lam (2004), the hybrid use of English developed into an essential part of instituting and preserving a shared ethnic identity for affiliates of this community. This identity represented "neither the social categories of English-speaking Americans nor those of Cantonese-speaking Chinese" (p. 45). Such code-switching is also used for symbolic purposes such as articulating humor, emotion, relationships, and social roles within the community

In McLean's (2010) report, Zeek uses the Internet and its social networking such as e-mail, text messages, and personal webpages on Facebook and MySpace, to talk to her friends and

family to negotiate her identity. Mclean states that this socialization process which includes social, historical, and linguistic contexts play essential roles in determining how individuals understand and experience the world which ultimately contribute to how they build their identity. McLean (2010) discusses the effects of using social networks on an immigrant adolescent ability to cope with the new home. She claims that Zeek's digital literacy has "afforded her direct and immediate opportunities to move across and within her sociocultural contexts and bring together her communities in the United States and those back home ... to adapt to the United States while staying connected to her native identity" (p 16). The new social space that Zeek is getting used is becoming more a home for her because her use of digital technologies is offering her a space to connect with members of the community she moved from.

Lewis (2006), Davies (2007) and Tyner (1998) argue that online learning and digital technologies give more leeway for creativity and identity performance. Hull and Schultz (2001) describe the opportunities digital technologies offer for manipulating images and texts and creating new products out of old ones as sociocultural experiences that afford the learner with experiences to express new knowledge and share it with others. In addition, Leander (2003) asserts, both online and offline forms of learning should augment and blend to maintain a vision of culture, identity and literacy practices.

Research has revealed that some features of digital technologies typically provide new forms of community life and offer vast resources for personal liberation and empowerment (Buckingham, 2008). As a result, digital technologies liberate individuals from the geographical constraints by allowing them to participate in different social contexts and practices. When immigrants engage in these transformative features of technologies, it is common that they sometimes alter and at other times shape new identities. The next section presents a description

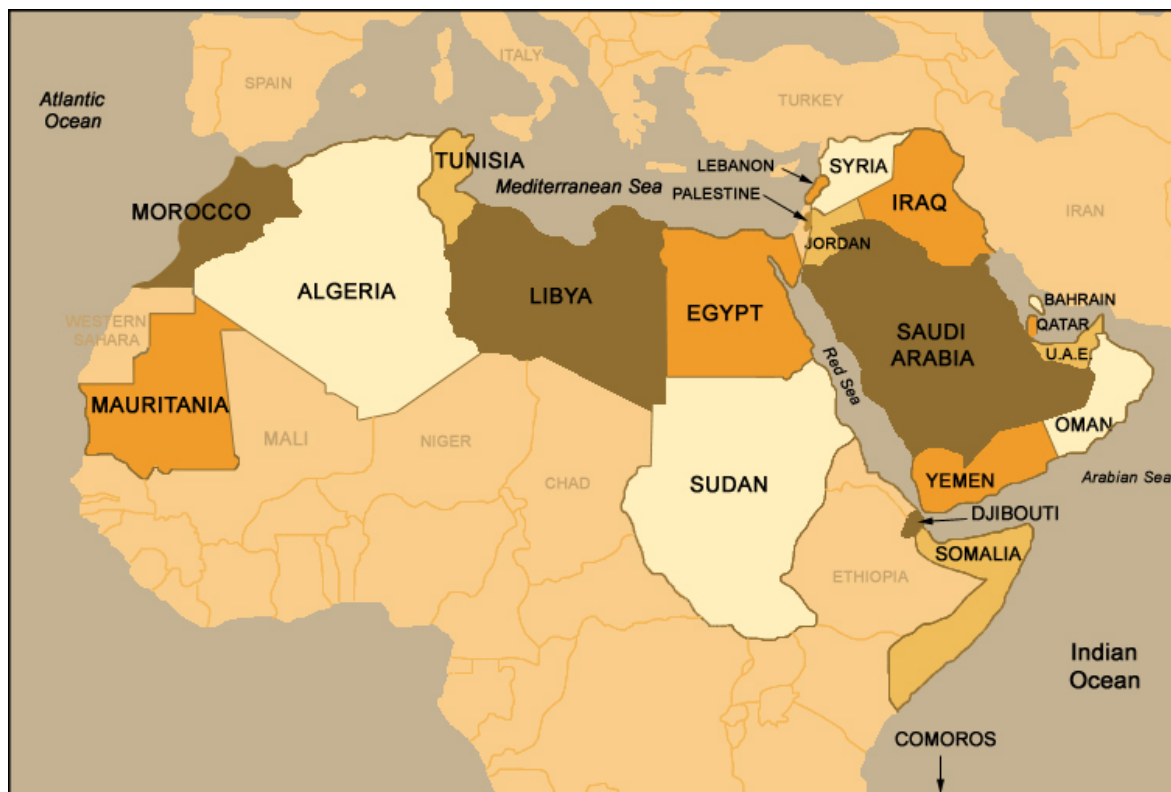
of literacy development among Arabic Speakers, an important immigrant/transnational immigrant population in the United States. The section discusses literacy development in Arab's first language, Arabic and their literacy development in English (sections 1.1, 1.2 and 1.3 give more details about the history of this population and the Arabic language).

## **2.4 Literacy Development among Arabic Speakers**

As discussed in sections 1.1, 1.2 and 1.3, Arabic is the official language in Arab countries and is considered one of the major languages in the world. This section considers literacy development in Arabic and English and reviews related literature to the teaching and learning of these two languages in Arab countries.

### **2.4.1 Literacy Development in Arabic**

UNESCO refers to Arab countries as the MENA Region, which stands for Middle East and North Africa. Figure (2.1) below shows the location of these countries on the world map. These countries vary in size, economic growth and population. However, they share a common Arabic-Islamic heritage in addition to knowledge and use of the Arabic language as an official language. The Arabic language has a symbolic importance for Arab countries, which grew stronger as they searched for their identity before and after they regained their independence from colonial powers (Maamouri, 1997; Paulston, 1990). In spite the fact that some of these countries feature complex linguistic diversities of Arabic and another very different language such as Kurdi in Iraq, and French in Algeria and Morocco, Arab countries seem to follow similar curricula and school-related teaching materials (Maamouri, 1998).



*Figure 2.1 Map of Middle East and North Africa (MENA)<sup>1</sup>*

In the past, instruction in Arabic took place in Quranic Schools. Owodally (2011) lists a number of terms that are used in the research literature to refer to schools that teach Quran such as Islamic schools, Quranic schools, madrasah, maktab, and kuttabs. This diversity of terms represent among Islamic religious schools and education, which emphasize the teaching of Quran in Arabic in order to preserve the holy book. Wagner (1993) reported the dearth of research on Arabic reading. Wagner considered the shortage in research surprising because ‘Arabic is one of only a handful of recognized international languages ... [yet] according to UN estimates, the Arabic-speaking world has one of the highest rates of illiteracy, averaging, in 1990, about half of all adults’ (P. 80). However, literacy rates in the Arab countries have

<sup>1</sup> Obtained from: <http://israelipalestinian.procon.org/view.background-resource.php?resourceID=1163>

dramatically improved. For example, in the United Arab Emirates literacy rates have increased from 20% in 1980 to 77.9 % in 2003 (Aldosari, 2007).

Recent research on Arabic has focused on the disparity between written Modern Standard Arabic (MSA) and spoken Arabic. This disparity is referred to as diglossia (Ferguson, 1959). This diglossic nature of the Arabic language is one of the compelling features of Arabic literacy acquisition (Haeri, 2000). Saiegh-Haddad (2012) argues that the separation between the fixed written (MSA) and the dynamic spoken (different spoken vernacular varieties) linguistic codes in Arabic has made the two varieties ‘distinct and linguistically distant,’ (p. 45). Nonetheless, children learn to write MSA through formal instruction, making MSA ‘nobody’s mother tongue,’ (Coulmas, 1987). In other words, the linguistic distance between spoken Arabic, which children learn to speak at home, and Standard written Arabic, which children learn via formal instruction in reading results in learning difficulties and hinders the natural acquisition of basic reading skills in Arabic (Saiegh-Haddad, 2012).

#### **2.4.2 Literacy Development in English by Arabic Speakers**

Most of the research available on literacy development of English in the Arab world focuses on English instruction rather than learning. Hence, this section considers English language literacy development from the perspectives of ESL teachers. The colonial powers that occupied Arab countries, between the 1830s and 1960s, left the influence of their languages and deemed it important to teach those languages. English is by far the most commonly taught colonial language across Arab countries. However, there is more emphasis on teaching English in the nations that were occupied by the British colonials (Egypt, Oman, Saudi Arabia, Qatar, Kuwait, UAE, Yemen, Bahrain, Iraq, Jordan, Gaza Strip and West Bank, Sudan, and Yemen) compared to stronger emphasis on French in the countries that were occupied by the French

colonials (Algeria, Tunisia, Morocco, Chad, Comoros, Djibouti, Mauritania, Syria, and Lebanon). In the 1990s, some of the countries that were occupied by the French included English as a third language to be taught at school, such as Algeria and Tunisia. These countries started teaching English in Middle school while Morocco introduced English starting at fourth grade. Yet, in Syria and Lebanon, English is taught starting in first grade, while French is taught starting at middle school. For that, and because of its prestige in the world, Arab countries consider literacy in English important for completing higher education and getting a good job. In many Arab countries nowadays, English is the medium of instruction in higher education institutions for the scientific strands. In addition, English is being introduced as early as Arabic in public schools and sometimes even earlier in private school. Many private schools adopt a bilingual approach of teaching where English and Arabic are taught at the same time.

The teaching of English in the Arab World has received much attention by researchers, particularly those who teach English. Many researchers argue that English language instruction in the Arab world is mostly dominated by the teacher, particularly at the Primary and Secondary school levels (Al-Issa, 2007; Al-Jadidi, 2009; Al-Mohanna, 2010; Fareh, 2010; Tushyeh, 2005). Efforts made by teacher preparation programs in Arab countries, to prepare English teachers for using teaching approaches that are student centered such as using communicative approaches have not found their way into real classroom experiences as a result of the continuous stress over teachers to follow a prescribed curriculum, and prepare the students for national written exams and sustain classroom control (Al-Mohanna, 2010; Al-Saadi, 2011). Thamraksa (2004) argues that the unwanted result of the teacher-dominated classroom in Arab countries is reliance on the teacher to deliver knowledge and the preconception that the classroom is the only place where learning occurs. Accordingly, many students, and their families, depend only on the school for



second language learning and take no accountability for English language learning outside the school (Vrazalic, MacGregor, Behl & Fitzgerald, 2009; Al-Saadi, 2011). In addition, Al-Saadi (2011) reported Arab students' aversion of courses that comprise self-study at the college level.

The curriculum used for teaching English in Arab countries has been also identified as an obstacle to language learning. Al-Salmi (2005) studied the sources of reading problems that students in third and fourth grades face in Oman, as perceived by the teachers, and found that the curriculum stands out as the major cause of the problem. Al-Salmi (2005) found that the curriculum does not represent the children's culture and this hinders their ability to relate to the material. As a result, the children avoid learning English and perceive it as a difficult subject. The current situation of English language teaching in Arab countries indicate that, although English is perceived as a prestigious language, there is a need to provide culturally responsive curriculum and altering the instructional approaches to include strategies that invite and support the learning of English in and outside the school.

Research on second language acquisition has shown that out-of-school language learning is highly correlated with successful language acquisition. Carroll (1967) conducted a large-scale study on language learning and concluded that activities conducted outside the classroom and self-study efforts for learning a language have a great impact on proficiency in the target language. Some of the activities that Carroll reported include using the target language at home and with friends (socialization purposes) and reading regularly in the target language. In 2005, ETS replicated Carroll's study and found that the more the students' spent time outside the classroom practicing the target language (English in this case), the higher their score was on the Test of English for International Communication (TOEIC) test.

Different circumstances in the different Arab countries make the teaching of English almost distinct to that geographical space. For instance, Fennell (2013) reflected on his experience as an English teacher in Palestine and his perceived failure in meeting the Palestinian students' needs. Fennell stated that his perceived failure was due to the conditions of living and working in Palestine and his inability to provide the students with suitable activities to discuss how the occupation shapes their experiences. In addition, Al-Zubaidi and Richards (2010) investigated the difficulties that Arab students learning in Malaysia face when studying in higher Education Institutions. They reported the English Language and cultural differences to be some of the obstacles they face.

## **2.5 Digital Biliteracy: A Framework for Digital Literacy Development in Two Languages**

In this section, I outline the literacy development theories and sociocultural theories that were discussed in the previous section. I then propose the Digital Biliteracy framework that is concerned with studying literacy development in two languages through the use of digital technologies and how the digital context can provide a safe environment for language learning and cultural preservation.

### **2.5.1 Digital Biliteracy**

The current development of digital technologies has made the different cultures and language practices increasingly international. The Internet, instant messaging, email, blogs, wikis, Facebook, Myspace, virtual worlds, and on-line social networking have become important communal contexts for all, including youth around the world, who may favor English as a common language of intercultural communication and social networking. In these contexts, immigrant children and adolescents learn to use their first language and English informally along

with their formal studies at school. This practice allows children to develop literacy in their first and second languages by communicating and accessing information through different digital technologies.

Hornberger & Skilton-Sylvester (2003) describe biliteracy to include all instances and types of communication that happen in two languages or more, in and around writing. While this definition does not distinguish the form of communication, whether it is print and digital, research on biliteracy has mostly focused on the use of print materials. For more than a decade, communication has been taking different forms, and increasingly incorporating digital means. Communications through digital technologies also involve the act of translanguaging (Garcia, 2009; Bartlett and Garcia, 2011), which acknowledges bilingualism and languaging bilingually and considers them as valuable systems of communication that if “are taken as the normal mode of communication it is difficult to identify a first or a second language, as bilingualism becomes the heart of the matter” (Garcia, 2009, p. 143). Baker (2011) defines translanguaging as “the process of making meaning, shaping experiences, gaining understanding and knowledge through the use of two languages” (p. 288). The effects of this process include the ability to “develop academic language skills in both languages leading to a fuller bilingualism and biliteracy” (p. 290). It is then through digital technologies where translanguaging can be supported and fulfilled in order to provide the child with access to the mother tongue.

This study attempts to combine a social practice view of literacy with an account of multimodality in order to establish the possibilities for an understanding of literacy as a social practice that is influenced by new digital technologies in order to make meaning. On the one hand, New Literacy studies describe literacy as a social practice rather than a set of autonomous skills (Street, 1984, 1993). This view considers literacy as culturally and ideologically situated

(Gee, 1996). On the other hand, multimodal literacy values the interest of the learner in employing different modes that help them make meaning by navigating multiple modalities (Kress, 1997). Thus, the way literacy develops from one site to another, and the use of different modes, is influenced by the learners' culture and ideology, which in turn affects their identity as hybrid learners. For immigrant and transnational immigrant children who have a first language and come to the United States to acquire English as a second language, moving between home and host sites is important in order to access their funds of knowledge and cultural background. However, when geographical distances make it impossible to move between the home and host sites, digital technologies provide a practical medium for immigrant and transnational immigrant children to access their cultural background and funds of knowledge. In this sense, digital technologies are providing a platform for transnationalism in order to help the child situate their learning (Lave and Wenger, 1990) in a meaningful context. As a result, developing literacy in two languages is a sociocultural process that is mediated by digital technologies and situated in a meaningful context. This process is what I refer to as Digital Biliteracy.

### **2.5.2 Why Digital Biliteracy is Important?**

The topic of Digital Biliteracy is important because it attempts to theorize digital technologies as a tool for biliteracy development. This dissertation studies the topic of digital biliteracy in connection with its utilization by Arab children, a population that has not yet received enough attention by researchers, notwithstanding its demographic importance in the United States, which emphasizes the importance of the topic. First, the study contributes to understandings of language acquisition through digital technologies and people's ability to learn multiple languages by accessing information digitally. Second, the study focuses on the experiences of Arabic-speaking populations in the United States, who have been marginalized by

researchers, educators and policy. Third, the study focuses on emergent biliteracy practices of children between the ages of 3 and 4, an age group that is not thoroughly studied with regards to their use of digital technologies. This age group is important because it is then when children first begin to receive formal schooling in the United States.

I use the term Digital Biliteracy to indicate the practice of learning to read and write and access information as a means to accomplish literacy in first, second or more languages- in comparison to the view of biliteracy using traditional print texts and materials. In other words, Digital Biliteracy is ‘the ability to develop literacy in any two languages by communicating and accessing information through different digital technologies in and outside of school’. Literacy attainment in a second language using digital technologies embodies the practices that a second language learner engages in while using digital technology for different purposes, whether educational or general social networking, inside or outside the school and that ultimately lead to acquiring a new language while maintaining the first language, whether intentionally or unintentionally. Many researchers have studied the notion of reading and writing and retrieving information through different digital technologies as digital literacy (Buckingham, 2006; Casey, 2010; Eshet-Alkalai, 2004; Marsh, 2005; McLean, 2010).

Thus, it is important to study the notion of digital biliteracy as a defining factor of different learner characteristics such as: the potentials of literacy tasks that take place within new technologies, the new skills, strategies and dispositions for the effective use of these digital technologies, their importance in providing children with social relations and belongingness to a group, and the constant change of digital technologies which would imply that there is always new literacies in place.

## **2.6 Summary**

This chapter reviewed relevant literature on the multiple natures of digital literacies and situated literacy within new literacy studies, multimodal literacies and digital literacies. In addition, this chapter examined the use of digital technologies inside and outside the school context, looking at issues of access, equity, and the uses of digital technologies for language learning, uses of digital technologies by different age groups and the teachers' and school curriculum's ability to accommodate a productive use of digital technologies. Furthermore, this chapter discussed the ways immigrants in the United States use digital technologies and the effect of digital technologies on their identities. Moreover, this chapter included literature on literacy development among Arabic speakers, the available literature on Arabic literacy development and the different ways literacy in English is development within Arab countries. Finally, the chapter presented the importance of literacy development in two (or more) languages through the use of digital technologies and provided a new perspective for considering this development by referring to it as Digital Biliteracy.

The digital biliteracy perspective is useful for studying literacy development in two different languages because digital technologies have the potential to provide new and important gateways for language learning. This is important for this study as I seek to uncover ways by which Arab children develop literacy in Arabic, their home language, and in English through the use of digital technologies. By considering a new literacy, multimodal literacy and sociocultural perspectives for learning, this study sought to uncover the different ways digital technologies can be used to foster emergent biliteracy development in the immigrant and transnational immigrant child's first and second languages, inside and outside the school with family and friends. The methodology for this study is outlined in the following chapter.

The data collected in this study revealed ways in which the use of digital technology at home and at school provide Arab children with resources that connect them to their culture. Accordingly, a number of themes that occurred during the data collection and analysis phase of this study included ideas on the uses digital technologies most at home, parents' role during children's use of digital technologies, parents' and teachers' views on the use of digital technologies for biliteracy development, children's views and use of digital technologies for biliteracy development, first language maintenance and second language acquisition, effects of the use of digital technologies on the children's identities and ways children access to their culture through digital technology mediates their understanding of the dominant culture.

## **Chapter Three: Methodology and Procedures**

### **3.0 Introduction**

This study employed a qualitative research approach intended to enhance the understanding of the role and impact of digital technologies on the learning experiences of Arab children within different environments including the school and home. The purpose of this study is to interrogate the influence of digital biliteracy interpreted from multiple analytical perspectives, observations, artifacts, and interactions with the children, their parents and teachers. To achieve this, this work provides an in-depth examination of the literacy experiences of Arab children in pre-kindergarten who are native speakers of Arabic and second language learners of English, attending a private school that teaches students in English and in Arabic. This research took place in a border community in southwest Texas. In this work, the school is referred to as Al-Noor and the city as Al Elm in order to protect the identity of the children involved.

In chapter two, I reviewed relevant literature concerning the use of digital literacies in education. In this chapter, I describe the research design that I employed and the methods I used to collect and analyze the data on which this study is based. I begin this chapter with a description of the uses of the case study approach in educational research and digital literacy/biliteracy research with children. I argue that the case study approach is the most appropriate method for the research questions posed in this study, given the nature of the research questions, the context and the phenomena under investigation (as discussed in section 3.1.3). Sections 3.2 and 3.3, describes the procedures I used for data collection and analyses. In addition, this chapter discusses In the final section (3.4), I discuss methodological issues surrounding my multiple and evolving roles at the context of the school and the children's



homes, including my possible participation in a longitudinal study at the school over the course of the research.

### **3.1 The Research Design**

Following a constructivist paradigm of research, this study uses a qualitative research approach (Guba & Lincoln, 1994), particularly drawing from qualitative case study designs. Qualitative research approaches typically assume that reality is socially and experientially based and is constructed by the participants in the study. In addition, qualitative research approaches consider knowledge to be a result of the interaction between the researcher and the individuals and objects that exist in the research setting. Consequently, I, the researcher, was part of the process of investigation and my assumptions, beliefs and observation are reflected as part of the study. The findings of this study have been generated through participant observation, interviews, and artifact analysis. As such, I interacted and engaged with the children, parents and teachers involved in this study through a series of interactions including: observation, open-ended questions, and conversations around artifacts produced by the children.

#### **3.1.1 Case Study in Educational Research**

Among research methods used in the field of education, case studies are considered important tools for understanding the local particulars of the abstract phenomenon under study. Yin (2009) defines a case study as “an empirical inquiry about a contemporary phenomenon (e.g., a “case”), set within its real-world context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 18). Within the qualitative tradition, researchers use case study designs to study the complexity of human experiences across different naturalistic social contexts (Dyson & Genishi, 2005). Case study research focuses on providing a

close and in-depth understanding of one or multiple cases that exist in a real-world context. Creswell (2007) considers case studies as a qualitative strategy that allows the researcher to explore in depth one or more individuals, while eliciting data and multiple meanings that explore the uniqueness of individual differences among the participants. In addition, Merriam (2002) views case studies to be unique and different from other types of qualitative research methods because of the intensive descriptions and analyses that result from the data.

### **3.1.2 Case Study in Digital Literacy Research**

Case study designs have been widely used in educational research. The study of digital forms of learning such as the digital divide (e.g. Warschauer, 2003), digital economy (e.g. Mutula & Brakel, 2007), digital libraries (e.g. Monopoli, Nicholas, Georgiou & Korfiati, 2002), digital culture (e.g. Willett, 2007), digital media (Marsh, 2004; Nixon & Comber, 2005) and digital literacy (e.g. Williams & Jacobs, 2004; Merchant, 2006) has been frequently conducted using case study designs. This is because case study designs capture the essences of the processes that take place and shape learning within different digital interactive environments. Moreover, case study research examines the context where the cases under study exist and all the conditions that are related to the topic under investigation in order to reach a comprehensive understanding of the phenomena.

### **3.1.3 Why Case Study Research in this Study?**

There are three main reasons for employing a case study research design in this study. First, the type of questions that I answered in this study (Shavelson & Towne, 2002) focused on “what” and “how” (Yin, 2009) children’s experiences with digital technologies may or may not influence their cultural practices and maintenance of their first language while acquiring English

as a second language. The nature of qualitative questions that seek to find answers for this type of questions employ case study designs (Creswell, 2007). A careful reading of the research questions posed in this study (listed in Ch. 1, section 1.4.3) shows that I'm asking about the how and what. This explanatory nature of the research combined with my interest in culture, people and roles can be best answered through case study designs.

Second, the context of the study included the children's school, home and community spaces such as the playground and the community center, where data was collected and interactions with the participant took place. The case study design provided natural opportunities for interaction and multiple sources for triangulating the data. Using a case study design helped me gain insights and understand the experiences that underlie and influence the behavior of these children in the school and home context and provided rich explanations and insightful descriptions of their experiences (Stake, 2003; Flyvbjerg, 2006).

Third, research on digital forms of learning have utilized case study designs to understand and highlight the unique conditions under which learning occurs when digital technologies are used. The main research question in this study and other questions that might emerge during the data collection process sought to examine the ways in which five different children in a case study school use digital technologies in school and out-of-school, and how their use of these tools fostered emergent biliteracy development. In answering these questions, this study provided a deeper understanding of the role of digital technologies in fostering the overall personal, social and intellectual development of Arab immigrant and transnational immigrant children in the United States.

### **3.2 Participants**

The primary participants in this study were Arab American families whose children are

enrolled in the school. Pseudonyms were assigned to the five children: Ali, Majid, Manal, Lama, and Jehan. The selection of the participants included a mixture of immigrants and transnational immigrants to compare attitudes towards language education and efforts to maintain the home language. I also selected participants whose parents included at least one native speaker of Arabic for the purpose of investigating the different ways Arabic is developed at home.

### **3.2.1 Recruitment Procedures**

Five Arab American families were recruited through their children's enrollment in the school. I attended the Open House event at the schools before the school year started and explained the project and informed consent materials at the Open House event. I met with the parents at school, mostly during pick-up time after school and explained the objectives of the study, and explained the Human Subjects Informed Consent form and to conduct the interviews. I gave them the consent form then and gave them the option of taking it home, discussing with their family members and then sending it back to school. All parents gave their initial agreement to participate at the first meeting time, which shows that they likely trusted me because of my insider role.

### **3.2.2 Procedures for Participant Observation at the School**

My participant observation at school started in September 2013 and lasted for almost eight months. I attended regularly every week, visiting the classroom at least twice a week. At times, I was present in the classroom three to four days a week in order to assist the Arabic teacher with projects and once to substitute the lead teacher. The two main teachers and the assistant teacher were informed that I would be conducting two to three semi-structured interviews, each lasting 40 – 60 minutes. At the initial interview, I asked the teachers a series of

questions about their teaching practice, use of digital technologies and beliefs about pre-kindergarten Arab children's education and the Arabic language. With permission, I audio-recorded the interviews for later transcription. I took field notes immediately after each interview. Follow-up interviews allowed me to clarify and ask for additional details about answers from the initial interview.

I collected written artifacts from the participating children (e.g. drawings, writing), which I obtained during classroom visits. I photographed the children's written artifacts and the originals remained in the classroom until the teacher sent them home to the families.

### **3.2.3 Procedures for Case-Study Families**

The five participating families were informed that I would be conducting two to three semi-structured interviews, each lasting 40 – 60 minutes. At the initial interview, which was slightly longer than the subsequent interviews, I asked the family a series of questions about their thinking and beliefs about education for their pre-kindergarten child and about aspects of the learning environment they create at home. With permission, interviews were audio-recorded for later transcription. Field notes were taken immediately after each interview. Follow-up interviews allowed me to clarify and ask for additional details about answers from the initial interview.

As is common in a qualitative research design, member checking (Lincoln & Guba, 1985) was employed as I checked back with the subjects to ensure that my descriptions were true to them. The families were asked to review initial descriptions of each family's home learning environment before progressing to the interpretive phase of the research. Member checking occurred during interviews after the initial one.

### **3.2.4 Rationale for Purposeful Sampling, versus Random, Recruitment of Case-Study**

#### **Families**

All 11 families whose children are in the pre-kindergarten class in Al-Noor School agreed to participate in the study and signed the informed consent form. However, only five families were selected for the in-depth interviews in order to provide an in-depth examination of the phenomena under study (Creswell, 2007). I chose five cases of Arab American families, deciding that even if one or two families did not follow through with participation in my study, I would remain among the recommended number of case studies in qualitative research (Creswell, 2007).

Among the families who agreed to participate in the study, there were two transnational immigrant families who are residing temporally in the U.S. in order to complete their higher education. The rest of the families were American citizens. I included the two transnational immigrant families in the study to form the transnational immigrant Arab families group and three other families from the remaining were selected to form the immigrant families group.

The reason behind including both types of immigration status is to examine how are the two groups similar/different in their use of digital technologies to teach/ expose their children to Arabic/English. A random selection may not have allowed for this comparison if the randomly selected families ended up being all immigrant families. Choosing the sample this way enabled me to analyze and interpret the data in terms of their immigration status and future plans to either remain in the US or travel back to heir country and how does that affect their perception towards biliteracy development in Arabic and English. Additionally, choosing the samples based on their immigration status may help teachers, educators and researchers know which category utilizes digital technologies for language development more and why. It also clarified reasons why

parents would opt for focusing on teaching their children one language than the other at this stage! In addition, it provided a stronger logical argument as to why these learning experiences differ or are the same in different home cultures. It also provided a platform for drawing parallels among various other immigrant sub-cultures, such as the experience of immigrant Mexican American children versus the experience of transnational immigrant Mexican American children on the borders, given that this study took place in a predominantly Mexican American community

### **3.3 Data Collection Strategies**

Multiple sources of evidence are needed in order to appreciate and understand the different variables that affect a case study using qualitative methods (Dyson & Genishi, 2005). As a result, this study employed a variety of data collection methods. Data for this study was collected through participant observations, informal interviews with the children (conversations), in-depth, semi-structured interviews with the teachers and parents and documents analysis of students' artifacts. Documents and artifacts include students' writings and drawings.

#### **3.3.1 Observations**

This study investigated the digital literacy experiences of pre-kindergarten children who are 3 and 4 years old. I conducted participant observations in the school two times per week for the duration of the school's first academic semester (September to December, 2013), a total of approximately 30 participant observations. Visiting the school regularly and conducting regular participant observations helped me develop a holistic understanding of the students' experiences (DeWalt & DeWalt, 2011). Each observation lasted for 6 hours, the whole duration of the school day excluding the nap-time (12:30 to 1:30 pm), starting at 8:30 until 3:30. During these

observations, I helped the teacher and the assistant teacher with classroom activities, classroom discipline and use of digital technologies. I took the role of the teacher at times, once when the teacher had to step outside the classroom and I took over to read a story to the children, and another time when the teacher was sick and did not come to school. In addition, I helped the children with the completion of different activities inside the classroom, such as explaining the guidelines for completing some classroom activities and worksheets in addition to general classroom rules mostly by translating them to Arabic. At times, I also took the role of the Arabic teacher who went on maternity leave, teaching 1<sup>st</sup> and 2<sup>nd</sup> grades Quran and Arabic as well as substituting the Islamic studies teacher, teaching grades Kg through 4<sup>th</sup>.

In addition, I conducted participant observations at the children's homes; however, the frequency of this varied between the participants for reasons that ranged between parents' availability and their welcoming my presence at their homes. However, at least one participant observation has been conducted in each of the participants' houses or outside during their use of digital devices, in places such as the playground, the community center, and the mall. The participant observation provided time to interview the children informally and talk about their use of digital technologies at the school and home. These conversations built on the activities that the students were involved in and questions, comments or explanations that came up during the participant observations.

The classroom participant observations provided an account of the children's attitudes towards and beliefs about (DeWalt & DeWalt, 2011) learning in a dual language setting using technology. In contrast, the home participant observations revealed ways digital technologies are used to enhance biliteracy development at home. Polkinghorne (2006) argues that participant observations are primary data collection methods in qualitative research where the investigator



records his/her notes directly into a written form. Moreover, participant observations allow for studying the everyday context of the participants and having the researcher as a member of the social context that is being studied (Williamson, 2006). The extent of use of digital technologies for this purpose revealed the children's and their parents' practices and approaches towards their children's biliteracy and reasons why they use digital technologies for this purpose. In both contexts, I paid attention to how children speak to one another, how they speak and respond to their teachers, how they communicate with their parents at home and in what language(s) they speak to their siblings.

### **3.3.2 Interviews and Informal Conversations**

A second source of data consisted of in-depth, semi-structured interviews with the parents and the teachers as well as informal conversations with the children. The in-depth, semi-structured interviews with the teachers (at school) and the parents (mostly at their homes) were conducted to examine their perspectives about their use of digital technologies as related to their views about the children's use of digital technologies for biliteracy development. Many of the interviews with parents took place at the community center where parents preferred to meet with me.

I intended to follow Seidman's (2006) three-stage interview process in this study. However, while Seidman (2006) suggests that people's behavior becomes understandable and meaningful when placed in the context of their lives and in the lives of the people surrounding them, the three stage interviewing was slightly rigid for this type of study, and possibly the population under study (Arab). Its restricted nature that suggests first conducting an interview on a focused life history, then an interview asking about the details of the experience and finally an interview seeking the participants' reflections on the meaning of that experience was very rigid

to follow. In addition, open-ended questions without probe left some of the participant wondering about what exactly the question is seeking. For example, a question about culture with one of the participant lead to confusion because the participant misunderstood the word since its meaning in Arabic is different. Another open-ended question with one of the participants left her thinking for a minute about what to say because she felt the question “is too general, what do you mean”, she said. Instead, interviews for this study followed a fluid line of inquiry where the interviews appeared as guided conversations rather than structured queries. Questions were mostly ‘how; questions in order to avoid creating defensiveness from the participants’ side and rather putting forth friendly and nonthreatening questions (Yin, 2003).

Each of these in-depth semi-structured interviews lasted between 40 to 60 minutes. The interviews were tape recorded in order to “obtain verbatim records” (Johnson, 2002) of the participants’ responses that were transcribed later by me and were used to generate themes for analysis. The in-depth semi-structured interviews revealed the participants’ perspectives of the phenomena under investigation and showed facts about how parents enforce or privilege one language over another, available digital technologies devises that the children use at school and at home to reinforce language acquisition and language maintenance, parents’ and teachers’ use of them, the children’s access to and interest in them and the parents’ and teachers’ views on the importance of the children’s biliteracy. In addition, these interviews allowed for cross checking of the understandings obtained during participant observation about the context and the experiences (Johnson, 2002; Fontana and Frey, 2003).

Due to the small size of the school and the availability of only one pre-kindergarten classroom, I did not have a criterion for selecting the teachers. However, the criteria for selecting the children included first generation and a mixture of immigrants and transnational immigrant.

These criteria provided an opportunity to compare the use of digital technologies for biliteracy development between the transnational immigrant who are temporarily residing in the United States and immigrants who plan to stay in the United States or are already American citizens.

The informal conversations with participating children and in-depth semi-structured interviews with parents provided in-depth knowledge about how the children think about Arabic literacy and what it means to learn to write and read in Arabic in El Paso and their lives. The in-depth semi-structured interviews with the teachers were a converging line of inquiry (Yin, 2003) to corroborate the influences of the students' digital literacy practices at home on their performance at school. The preliminary participant observation research guided and prepared the generation of semi-structured interview questions that were used when interviewing parents and teachers.

### **3.3.3 Artifacts**

A third source of data for this study included artifacts produced by the children. These included children's drawings, writing, and pictures and screen shots of activities with digital technologies taken by the researcher. These artifacts were collected during participant observations in the school and the children's home. Artifact analysis contributed to the understanding of how the children use digital technologies to become biliterates and what do they do during their use of digital technologies that provides them with opportunities for digital biliteracy development.

The artifacts that I analyzed in this study were mainly digital in nature, including the use of different digital devices, screen shots of examples of their use and pictures of the children while using them. These artifacts, the digital technology devices that the children accessed on daily basis, access the children daily lives and generate literacy learning. Pahl and Rowsell

(2010) discussion on artifactual literacy provide a useful lens for the digital biliteracy development stance that I took in this study because it unites the realms of home and school and brings children's passions for digital technologies to the forefront.

### **3.4 Data Analysis**

During the eight months I spent at the school, I conducted data analysis at various points of the data collection stages. Throughout the data collection process, I generated themes from the participant observations, informal conversations with the children, as well as the in-depth semi-structured interviews. This practice helped shape the continuous, recursive process of qualitative data analysis that occurs throughout the life of the study (LeCompte & Schensul, 2010). As a means to provide credibility to the findings, I crosschecked data and findings with the teachers and the parents in order to establish the validity of the results (Johnson, 2002; LeCompte and Schensul, 2010).

I used grounded theory to analyze the data using open coding (Emerson, Fretz, and Shaw, 2011) as a first step and continued analyzing as I gathered more data in order to develop categories of information that account for segments of the data. This process helped me identify emergent ideas and themes and examine hidden assumptions and to answer emerging questions (theoretical sampling) (Charmaz 2006). This procedure assisted the data collection process by directing the next steps that I took and suggesting what data I need to gather to strengthen the themes and categories that are emerging (Emerson et al., 2011). After themes start to reoccur, I conducted focused coding and memo writing (Charmaz 2006) to create relationships and comparisons between the codes. I started data collection in September of 2013, and carried on until December 2013. I returned to the study site in January 2014 to collect supporting data and answer questions that emerged from the theoretical sampling. This process lasted for 8 months

(April 2014). Table (3.1) below shows the number of participant observations, informal conversations, in-depth interviews and artifacts collected during the phase of data collection.

Table 3.1

*Frequency of Data Collection*

Type of data collected	No. of data points
Participant observations at school	40 (x 6 hrs)
Observations at home and the Community Center	10
Informal conversations at school	30
Informal conversations at home and the Community Center	15
In-depth interviews	21
Artifacts	24

### 3.4.1 Reflective Notes and Memos

As I typed my field notes, I composed succinct reflective memos, posing questions and generating ideas, linking them to events, participants' words, or practices that I observed. I compared and contrasted emergent patterns with the categories in the conceptual framework, and moving back and forth between the theory building and theory-dependent aspects of ethnographic research. I started my fieldwork with certain questions and assumptions about children's use of digital technologies a school and at home. I wondered if the types of activities that the children engage in at school continue at home or if the types of activates that they do with digital technologies at home would be guided by what their parents' believes and values. I also wondered if language use at home would be of a similar importance as it is in school or if it would be geared for different purposes. During the process of writing descriptive field notes, I wrote reflective notes when I noticed similar digital practices or language use by the children's in and out-of-school. In the following reflective note, I consider and contemplate on the value

that parents put on digital technologies and the extent they use digital technologies and for what reasons. Manal drew what looks like a 'Phone' on her paper to show something that start with the letter 'P':

I notice that Manal mentions her use of digital devices at home during her work at school. I wonder about access and family roles: who owns the phone and who's allowed to use it? Manal told me she plays Arabic games on the phone. I wonder if Manal call the device 'fone' when referring to it in Arabic or she knows it's called 'Phone' in English and she knows that it starts with P!

(Reflective notes, 10-14-2013)

In these notes I posed questions about issues that I thought were important in theorizing Digital Biliteracy, and access and use of digital technologies at home by the children and parents. I also wondered about the teachers' beliefs about digital technologies' role in language development. These instances also informed the questions in the semi-structured interviews with both the parents and the teachers as I referred to them to probe.

In the descriptive field notes, I also wrote comments about the types of relationships I was building with participants, how some of them were curious about what I do, and the ways in which they understood my role in this process. In one instance, an Arab mother at the community center asked about what do I study:

Mother: What do you study?

Author: Children's uses of digital technologies and their support for English and Arabic language development.

Mother: why is that important?

Author: I want to learn more about how digital technologies can be used to support Arabic language development and cultural practices if they deem important to Arab families.

Mother: that's interesting. I think they are important. Maybe your experience with your kids gives you an idea.

(Field notes, 09-08-2013)

Similar notes like this assisted me record my multiple positionalities during the fieldwork; wondering in what ways I was viewed as an insider to the community, but also understanding if I was positioned (or positioned myself) as an outsider. This became critical during the data collection phase, where I negotiated various positionalities as a researcher, a substitute teacher and a parent volunteer in the school.

In general, field notes were useful in documenting interpretive aspects that were not a major part of the descriptive field notes, and to record feelings and explanations that informed the interviews. They were also valuable in assisting me rethink the concepts I identified in the literature as possible tools to analyze immigrant and transnational immigrant children's language development processes. They supported the building of categories and explanations that later became codes in the process of the analysis of classroom experiences and home practices around digital technologies.

### **3.4.2 Analysis of Classroom Digital Practices**

With the purpose of understanding the ways in which language development was enhanced by access to digital technologies in the classroom, I used grounded theory methods (Strauss & Corbin, 1990) to code classroom field notes. As part of the ethnographic stance I took

upon this study, I was interested in examining the patterns of digital learning that emerged in the classroom, and that could also inform the interviews with parents and teachers, to seek for confirming or disconfirming evidence, as part of an analytic induction process (Erickson, 1986; Le Compte & Preissle, 1993). Using open coding techniques, I created the first set of codes by reading and analyzing the field notes and listening to the interviews. I then merged codes that were similar, and looked for relationships between them.

This initial set of codes helped me represent and analyze digital literacy patterns in the everyday practices of the classroom, and the different tools that the teachers used to facilitate emergent literacy development. I was able to ask interview questions about what the teachers regarded as effective instruction. I used the English language to label the codes, since it was also easier to abbreviate the words in this language, or to relate them to the theory. However, I tried to keep the language used by participants in some emic terms.

### **3.4.3 Analysis of Home Digital Experiences**

After I categorized observation data, interview data, and informal conversation data, assigned pseudonyms for all participants and their places of origin, I analyzed their accounts using open coding, looking to identify understandings, events and persons related to their digital biliteracy and transnational practices. I created case study narratives that identify the role of digital technologies in shaping the participants' digital biliteracy practices. I analyzed these trajectories by first listening and then transcribing, reading and coding the interviews in Arabic and in English. I used English to write the codes and comments while analyzing.

An additional goal of open coding of home field notes, interviews and informal conversations was to identify different social practices in which participants incorporated the use of digital technologies, and their purposes and goals for using them as immigrants and



transnational immigrant. While I was analyzing the digital literacy practices at the participants' homes, I focused on their use of digital technologies to conduct different tasks such as contacting extended family members at their countries of origin through Skype, Facebook and other social relation media. I was able to ask the children and their parents about such practices. This analysis was recursive and the alternation of data collection with data analysis led me to more interesting and well-focused data. The transnational uses of digital technologies to preserve the Arabic language as well as the appropriation of digital technologies to achieve autonomy in literacy were overarching themes in the data. I compared and contrasted examples of digital biliteracy practices across the five cases and based the categorization of digital biliteracy practices on their purpose and function (Heath, 1980) within a particular social practice (e.g., literacy development in Arabic and English). The data sources for this coding were the participants' own reported practices during interviews, my participant observations at home, and interactions with other children and families in the community center.

These categories cut across a variety of literacy domains (Barton & Hamilton, 2000) including participants' households and community. Informed by the concept of literacy practices (Street, 1993), each of these practices was situated in participants' profiles in order to understand how they were appropriated in their everyday literacy practices. The practices that I observed included social practices that connected them with ideas and people beyond geographical distances. I coded and explored the purposes and meanings participants ascribed to these practices. This level of analysis allowed me to analyze their personal understandings of digital biliteracy.

### **3.5 Ethical Considerations**

Qualitative research is a subjective practice. The researchers bring to the data collection some of themselves and their biases. Yet, the ethicality of research in any field and in social sciences in particular require that the researcher is alert to his/her own biases and adopt different guards to ensure their thoughtful reflexivity about the personal dimensions of the research. Taking into consideration the different personal dimension typically results in ethical work, through transparency and reflection about one's own position.

#### **3.5.1 Subjectivity and Reflexivity**

No researcher comes to a project as a blank slate. There is, I believe, a degree of responsibility and ethical commitment on the part of the researchers to reveal what preconceptions they hold and how they shaped the design of the investigation. Thus, I was reflexive throughout the research process, through keeping a journal of my feelings towards the different events that occurred during the data collection stage. My use of participant observations was a useful tool for checking against my own subjectivity as well as the subjectivity of the participants (Dewal & DeWalt, 2011). Adopting this confessional style allows the reader to reflect on how my background and experiences as a researcher have influenced the results and the story I told in this study. My reflexive strategy of keeping a personal journal of my feelings and thoughts of different events at or immediately after they occur contributed against instilling my biases into the findings of the study and the results that emerged.

Mosselson (2010) argues that recognizing the role of subjectivity and bringing in the researcher's positionality can improve the ethical integrity of the research as well as enhance both the research process and the analysis and interpretation of data. I considered critical thought and reflexivity as important ethical tools in interpreting the children's personal, social, and

intellectual advantages that I explored as possible outcomes of the integration of digital technologies at school and home. I carefully considered what digital technologies were available and how they were used to achieve digital biliteracy. By reflecting upon the role of my experiences with the use of digital technologies with my daughters, I recognized the subjectivity of the research. However, the inherent subjectivity of this process is also regarded a strength in qualitative fieldwork research. That is because my prior knowledge about the topic shaped my sensitivity towards the experiences and concerns of the people being studied (Anderon, 2004). Maykut and Morehouse (1994) state ‘the qualitative researcher’s perspective is perhaps a paradoxical one: it is to be acutely tuned-in to the experiences and meaning systems of others—to indwell—and at the same time to be aware of how one’s own biases and preconceptions may be influencing what one is trying to understand. (p. 123). Accordingly, I identified the roles that the participants’ backgrounds and positionality have in the research process, therefore achieving a deeper understanding of the complexities of the study, and improving the quality of the data obtained in particular, and the research in general.

In addition, in using multiple strategies of data collection, I removed some of the subjectivity and biases that could otherwise affect the data collection and analysis process if I were to use only one single strategy for data collection. It also allowed me to present a richer picture of the children’s bilingual experiences and to triangulate the results in order to build the validity and credibility of the findings. The reflexive journal that I kept was useful in directing where the study goes (Watt, 2007) and kept me conscious about my own biases and subjectivities (Glesne, 2011). Writing such reflexive diaries and journals was one way to critically reflect on my own perceptions and the perceptions of the research participants as to where I stand in the researcher-participant relationship. In addition, the iterative nature of qualitative research that I

adopted required a spiral examination of the ethical and theoretical process espoused in the research processes. Recognizing the role of subjectivity and bringing in my positionality not only enhanced the ethical integrity of the research but also enriched both the research process and the analysis and interpretation of data.

### **3.5.2 Access, Entry and Trustworthiness**

As a member of the Arab community and a parent of two children in the school, I position myself as an insider in the research context. This positionality granted me access to the research site and the trustworthiness of the school principal, teachers and the children's parents. As a result, acquiring the consent of the parents and assent of the children was not difficult, since the community was familiar with my research intentions, which I have explained and demonstrated during a pilot study in the school (more details about the pilot study appear in section 3.6). The parents' consent form indicated and explained what the research purpose was and why the parents and their children were being asked to participate in this study. It explained the nature of the research and the anticipated benefits to the participants and the Arab population in the United States in general. Besides acquiring the consent of parents and assent of their children, I acquired the consent of the teachers who welcomed me to be present during the pilot study and invited me to visit their classes any time, even if it was not for research purposes. Although I have informally acquired access and entry to the site and the trustworthiness of the participants, I used the consent and assent forms to obtain the formal consent of the participants and comply by the requirements of the IRB.

### **3.5.3 Member Checking**

Research ethics necessitates that the participants are aware of any changes in the purposes of the research and must be given the full freedom to withdraw at any point. I obtained informed consent of the participants continuously (Glesne, 2011) in order to keep the participants aware of any changes in the research design or purposes. I recognized the fact that some personal information may be disclosed through the in-depth interviews with the parents and the teachers and during the informal conversations with the children and the ethical issues that may arise. Thus, I conducted a continuous crosschecking of emerging concepts against the participants' meanings, I listened to recordings of the interviews many times and compared them with the transcriptions that I did, and I constantly referred back to the participants when I was not sure about the interpretation of what they said. I also took discussed aspects of my analysis and findings, as they occurred, in order to gain a feeling of what they think about what is being written about them.

### **3.5.4 Confidentiality**

In order to comply with the requirements of the IRB and to protect the confidentiality of the school and the participants, I did not use the name of the case study school and participants. I gave the participants, the parents, the teachers and the children, the choice of using a pseudonym or their actual name in the study. All participants opted for the use of a pseudonym, and some of them chose their own pseudonym. I referred to the school as Al-Elm (equivalent of education in Arabic) and referred to the city as Al-Noor (equivalent of 'light' in Arabic).

## **3.6 Evolving Roles of the Researcher**

My roles with the school evolved at different stages and in different ways, starting as a

parent, then as a spouse of a member of the school board, and finally a parent-researcher. My relationship with the school started three years ago, in 2010, when my daughter, Mariah, who was 5 years old, was ready to enter in kindergarten but her English was very limited. I remember the first day she gathered with some children and everyone was speaking English, and how she felt lost and not able to communicate with them. My concern then was to help her learn English so that she could define herself in this new context. Several factors influenced our, her dad and I, choice for Mariah's first schooling experiences in the United States to be at this school. First, when we first came, Mariah spoke very little English and she appeared occasionally confused and lost when she tried to interact with children. So, we thought a school where English and Arabic were being taught would provide her with some support until she acquired English. Second, we were concerned that the cultural differences may affect the way she perceived education in the United States, coming from a predominantly Muslim country, Oman, with different cultural and religious orientations. Third, we wanted to make sure that Mariah preserved the Arabic language because it is our mother tongue, the language of the Quran and is important in maintaining ties with our family in Oman, particularly in being able to communicate with them. In Fall 2012, my other daughter, Reem, joined the school's pre-kindergarten level at age 3. This again strengthened my relationship and interactions with the pre-kindergarten teacher and her assistant. As a parent of two children, I was able to get to know the teachers better and interact with the parents occasionally, especially during pick-up times. Being a parent also increased the amount of time I spent in the school and gave me access to the school site, the school activities and the parent-teacher meetings. In addition, being a parent at the school provided me with two additional perspectives, those of my daughters' and my husband's, which were useful for confirming patterns of biliteracy development.

Over the course of the two years that followed my daughter's (Mariah's) enrollment in the school in Fall 2010, my relationships with members of the school and the Arab community changed in ways that strengthened my role as an insider. In addition to being a parent in the school, I have been a spouse of a member of the school board, who also served as the school's president during the academic year 2011/ 2012. My husband's role strengthened my insider role to the school and enhanced our voice in some of the school's decisions regarding matters related to the school's sources of funding and its scope as 'open to all'.

In Fall 2011, I conducted a pilot case study with one pre-kindergarten child in the school, her teacher and her parents. The study revealed interesting aspects of digital biliteracy and the use of digital technologies for cultural and language development. The pilot study discussed themes that are related to and has informed the purpose of this study such as: 1) types of digital involvements at home, 2) confusions around dominant culture and native culture, 3) use of digital technologies to retain language and culture and 4) parents' role in the digital biliteracy development process. These themes and the literature reviewed in chapter 2 have informed some of the themes I expect this study to reveal (discussed in section 2.6).

The skills and background experiences I brought to this inquiry had important implications for the ways in which I negotiated access and interacted with the participants of the study. They also affected the construction of subjectivities of the researcher and the researched. I am a bilingual, biliterate, and college-educated Arab woman. Although I share a language, a common culture and the same religion with the participating families, I had to negotiate my insider/outsider roles: on the one side, being a an Arab minority, non-citizen in the United States, but on the other side, occupying the position of a researcher, affiliated with a higher education institution. I used our shared native language, Arabic, in mostly all of our interactions except

with one of the families where the mother did not speak Arabic fluently.

The shift in my participation roles added an additional layer to the construction of my subjectivities. At the onset of the study in the fall of 2013, my initial role was that of a participant observer the classroom. Through time, I got more involved in the classroom activities, helping the children in the technology center assisting during lunchtime. This role afforded me the experience I needed as a participant observer and to carry on conversations with the children, asking about their feelings and preferences on their use of digital technologies and print literacies. In the spring semester, my role involved being a substitute for both the lead teacher and the Islamic studies and Arabic teacher when they were not feeling well, attending workshops or are committed to school work. I documented the intersections and tensions between my multiple positionalities (Herr & Anderson, 2005) by keeping detailed notes and reflections on my own thoughts and roles. I recognized that sharing this learning space with the participating children from a tutor's perspective gave me access to information on their learning process that I would not have obtained as a participant observer. In addition, taking up the role of the tutor strengthened my relationship with the children and allowed me to spend more time with them using digital technologies.

### **3.7 Summary**

In this chapter, I introduced and described the methods and methodologies I utilized to collect and organize data, to analyze the digital biliteracy practices of Arabic speaking immigrant and transnational immigrant children as described by their teachers and parents, and the role of their digital transnational practices in their biliteracy development. I provided an overview of grounded theory approaches that I drew from, as well as case study approaches to situate the experiences of the participants. Finally, I described my access to the research site, and the



various data collection and data analysis methods to examine home and classroom practices as well as the meanings that participants attributed to their digital practices. In the following chapters, I present the key findings from this study, describing participants' profiles, classroom digital biliteracy experiences and practices and the different appropriations of digital biliteracy for different purposes, including transnational and autonomy in literacy purposes.

## **Chapter Four: Context of the Study**

### **4.0 Introduction**

In this chapter, I provide a description of the community where the school is located and trace the establishment of the school and the changes that it has faced. I also provide a description of the pre-kindergarten classroom where the case study students are studying, its spatial organization, students, teachers and daily routines. A description of the school and the classroom context of the study provide an overview of how biliteracy is perceived by the teacher in the school and their pedagogical practices that contribute to the Arab children's biliteracy development. I also include a description of the Arab community to contextualize the study and to provide a description of the Arab community and their professional, religious and cultural orientations that may contribute and/or affect the value of the Arabic language. Finally, I describe the participants and their families and provide detail about their lived experiences around digital technologies.

### **4.1 The community**

There are limited published documents on the Arab-speaking population in El Paso. Arab Americans living in El Paso have originally come from diverse Arab countries and different parts of the United States. El Paso is a minority-majority city with a predominant Hispanic population of Mexican and Mexican American descent. The Arab-speaking population could well be considered a hidden and not highly visible population in the region of study, and thus merits the attention given in this study. As is the case with most Arab immigrants in the United States (more details in section 1.3), Arab immigrants and transnational immigrants came to El Paso seeking better economic opportunities, to escape religious discrimination, and to get higher educational degrees including Ph.D. and MD degrees. According to one female Christian

informant, Syrian, Iraqi, and Lebanese immigrants arrived at El Paso in the 1960s, including Christian as well as Muslim families. According to a 2006 estimate by the Islamic Center of El Paso, there were about 600 Muslims in El Paso in that year. In 2011, a physical count of the number of people who were attending one of the major Islamic celebrations identified about 900 Muslims in El Paso. Although this number is expected to be bigger as not all Muslims in the city might attend these Islamic celebrations, other factors might make a census like this less than accurate, including the attendance of local non-Muslims and the attendance of Muslims, and possibly non-Muslims too, from out of town. However, a speech that was given at the mosque recently indicated that there are more than 3000 Muslims in El Paso (Lecture in the ICEP, 2013).

El Paso has been recognized by the Arab American Institute as a place with a concentration of Arab Americans (Arab American Institute Foundation, 2003). In addition, El Paso is the home of Fort Bliss military installation that hosts soldiers from countries around the world, including Arab countries, to attend training courses. These soldiers are counted among the 3000 Muslims cited in the recent lecture. When Muslim Arab Americans first came to El Paso, they were mostly seeking jobs in the city. As the population continued to grow, it moved into middle class neighborhoods, particularly on the City's more-wealthy Westside. In 2005, the Islamic Center of El Paso was established in West El Paso, built with generous donations and funds by the affluent families in the region.

According to Aiman, a 58-year-old male informant who grew up in El Paso, Muslim Arab Americans in El Paso have swiftly integrated and assimilated in the local El Paso community. In Aiman's point of view, Arab immigrants in El Paso joined the community "with no marginalization." Being a male, however, his point of view might not represent the point of

view of Arab females who might have experienced marginalization as a result of their dress code and hijab (head cover).

Shatha, who came to the United States as a refugee from Palestine in 1960s, indicated that it was hard for her to find a job to support her family and help her husband who has worked as a waiter. Shatha stated, “I couldn’t find a job, it was hard. I tried to work as a waitress, as a cleaner, as a delivery personnel but I think my hijab, which is part of my religion, was the reason I was rejected.” Proficiency in English was also an obstacle to some Arab immigrants. Suha, who migrated to the United States in 1970s, was a qualified professional in Jordan. She stated, “I had a degree as an assistant pharmacist from Jordan but they told me I had to take an exam on Pharmacology in English in order to consider my degree.” Almost 45 years after migrating to the United States, Suha still travels to California every year in an attempt to pass the exam and find a job as an assistant pharmacist.

Muslim Arab Americans are an integral part of the El Paso community, having established businesses and entered professional careers. However, their presence and activity in El Paso is not associated with particular professions and businesses, contrasting to other Arab immigrant communities in the United States such as those in Michigan and New York, where there are streets identified as the ‘Arab Street’ that are marked by the presence of written standard and local varieties of Arabic. Recently, however, El Paso has witnessed an increased number of Muslim Arab immigrants, particularly from Syria and Libya as a result of the political situation in these countries, a change in the constituency of the community that might impact their occupational and professional activity in the city.

## **4.2 The School: Al-Noor**

Al-Noor (pseudonym) was established in 2006 as the first bilingual English/Arabic private school in El Paso, Texas. It is located on the second floor of the Islamic Center of El Paso (ICEP), (see 4.1). It started as a K-12 school with an estimated total enrollment of 150 students. However, due to lack of funds, the school faced the danger of being closed down. As a result, an unexpected decision to close the school a month earlier than its calendar in 2006/2007 was taken as a solution to overcome the financial difficulties. This decision, however, was not welcomed by many of the teachers and parents, which resulted in their withdrawal of their children from the school. The stakeholders, made up of parents and affluent Muslims in the community, were not happy with the early closure of the school and the danger that decision posed for the closure of the school in the following year. The stakeholders offered to provide more support to the school in the years to come. Their resistance succeeded in keeping the school open for the years to come.

In 2010, Al-Noor school shrunk into an elementary school offering only pre-K to 2nd grade, with a total of 25 students attending the school. The school then started to gradually expand; every year including one more grade level and an increased number of children enrolled each year. During the study, the school of year (2013 – 2014), Al-Noor offered pre-K to 4th grades and admitted a total of 40 students. Most children are concentrated in the lower levels (11 children in pre-k; seven in kindergarten, eight in first grade, five in second grade, six in second grade and three in fourth grade).

The school's current mission statement states that Al-Noor school is "committed to the development of the student as a whole. It seeks to provide students with academic excellence and religious training that they may strive for success, in this life and the Hereafter, in an

increasingly competitive and challenging world.” This mission statement is translated into reality through the integration of the teaching of *Qur'an* and Arabic. In addition, the school put a lot of emphasis on combining theory with practice and providing the children with the teaching that balances high expectations and support.



*Figure 4.1* Islamic Center Of El Paso, Al-Noor School on The 2nd Floor

#### **4.2.1 Faculty and Staff**

The Al-Noor school faculty consists of nine part-time and full-time classroom teachers, each teaching a specific subject area for k-4th grades. There is also one lead teacher and one assistant teacher for the pre-kindergarten class. Out of the ten teachers, four teachers are full-time and six teachers are part-time teachers. There is also an ESL teacher who comes to school twice a week. Non-instructional staff includes playground and cafeteria monitors, office workers, and the principal. Table 4.1 provides a summary of some aspects of the teachers' demographic

information including gender, country of origin, language of origin, language/s educated in, educational level and role at the school.

Table 4.1

*Faculty Demographics and Education*

Faculty Name (Pseudonym)	Gender	Country of Origin	Language of Origin	Language Educated in	Education	Role at School
<i>Violet</i>	F	Mexico	Spanish	English	BA Elementary Education	English Teacher (K – 2)
<i>Nancy</i>	F	Mexico	Spanish	English	MA Math Education	Math Teacher (K – 4)
<i>*Susi</i>	F	United States	English	English	BA Elementary Education	Pre-kindergarten Teacher – Science Kindergarten Teacher
<i>*Elena</i>	F	Mexico	Spanish	English	Certificate in Preschool Ed.	Assistant pre-k Teacher
<i>Abdullah</i>	M	Kuwait	Arabic	English	MA adult Education	Science Teacher (1 – 4)
<i>Sandra</i>	F	Libya	Arabic	Arabic	BA Arabic Education	Arabic Teacher (1 – 4)
<i>Sindi</i>	F	Iraq	Arabic	Arabic	BA Engineering	Islamic Studies Teacher (K – 4)
<i>*Jane</i>	F	Libya	Arabic	Arabic	Attended school in Libya – currently getting GED in the United States	Arabic and Islamic Studies Teacher (Pre-k – K)
<i>Romi</i>	F	Palestine	Arabic	Arabic/English	MA English Literature	English Teacher (3 – 4)
<i>Hala</i>	F	Mexico	Spanish	English	BA Elementary Education	Social Studies Teacher (K – 4)
<i>Kemble</i>	F	Mexico	Spanish	English	BA Elementary Education	PE, Health and Coding Teacher (1 – 4)

\* The participating teachers demographics

Although teachers at Al-Noor School recognize the importance of teaching Arabic to the children, the practice of speaking Arabic at school and in their own homes may not always reflect that. Among the ten teachers in the school, there are five teachers who are native speakers of Arabic and are first generation immigrants in the United States. One of these teachers doesn't speak Arabic to his children and his children do not speak or understand spoken Arabic. The other four teachers speak Arabic to their children at home and claim that their children speak Arabic very well. Yet, encounters with their children showed that the children prefer to speak English between themselves, with their friends and sometimes even with their parents. Younger children who are born in the United States tend to speak English all the time even when they respond to spoken Arabic by their parents. Not being unique to Arab immigrant and transnational immigrant children, research on immigrant child bilingualism and child language socialization in the United States show that the students' preference to the English language is a nationally and historically attested phenomenon, and not (only) a product or consequence of these parents' and children's actions and language choices (Arnot, Schneider & Welply, 2013; Thomas, 2011)

AL-Noor school is quite different from other private Arabic/English heritage language schools in the United States. Situated in a small urban city with a small number of Muslims, Al-Noor school serves a small number of interested Muslim families who can afford to pay the fees of private schooling. That is a reason why the school offers only elementary school levels. As a result of the small number of enrolled students, the school's program does not employ a dual language program (50/50). The limited enrollment of students affects the financial abilities of the school to hire more faculty and staff members. However, due to the affluent status of the parents who are interested in enrolling their children in the existing grade levels (grades one to four), the school receives a decent financial support. With this support, the school is



increasing one grade level per year. In addition, the school is trying to attract language and content experienced teachers who are qualified and experienced.

### **4.3 The classroom**

#### **4.3.1 The Pre-Kindergarten Teachers**

There are two teachers and one assistant teacher for the pre-kindergarten classroom. The lead teacher, Susi, is a White middle-class female. A mother of two teenagers in her late thirties, Susi is a student in her senior year getting a BA degree in elementary education (see Table 4.1 for more details). Susi is the lead-teacher for the pre-kindergarten class, teaching all subject areas and the science teacher for the kindergarten students. She grew up in El Paso but did not find herself learning to speak Spanish, “Spanish is not for me,” she indicated when I asked if she speaks Spanish after I noticed she was seeking the assistant teacher’s help to communicate with the janitor at the school. Susi and her husbands are devoted converts to Islam.

The pre-kindergarten’s Arabic teacher, Jane, is an immigrant female from Libya. She is a mother of six (three boys and three girls, the oldest is a female junior at college and the youngest is a three-year-old boy). She is a native speaker of Arabic and was educated in Arabic in Libya (see Table 4.1). She moved to El Paso with her husband and children in order for her husband to complete a Ph.D. degree in civil engineering. However, Jane and her family decided to live in the United States because of the difficult political situation in Libya. Upon coming to the United States, they were issued the Green Card that made their migration to the United States easier. In the past two years, Jane was taking ESL classes to improve her English language. She is now enrolled in the free G.E.D. classes at New Mexico State University (NMSU). Jane is a part-time

teacher in Al-Noor school, teaching Arabic and *Qur'an* to pre-kindergarten and kindergarten children.

The assistant teacher, Elena, identifies herself as a Mexican American. She is in her late 50s. She is a mother of two married children and has five grandchildren. Elena migrated to the United States with her family when she was five years old. She received her education in English while living in the United States (see Table 4.1) She converted to Islam in her early 40s. She has a certificate in pre-school education. Before she joined the Al-Noor school in 2013 as an assistant teacher, Elena had a home-daycare where she looked after children ages six months to three years old. This is the first year (2013/2014) that the three teachers work as a team to teach the pre-kindergarten class, in the school site where this study took place.

#### **4.3.2 Classrooms' Environment: Organization and Instruction**

Al-Noor school implements a bilingual program that offers full academics in addition to Islamic and *Qur'an* studies and Arabic language, at 80% of the school time for full academics and 20% for Islamic, *Qur'an* studies and Arabic respectively. This language distribution is being used because the school follows a local district's system and offers Arabic and Islamic/Qur'anic studies as a foreign language. Instruction for the prekindergarten class, the school site of this study, took place in two classrooms. The full academic content is taught by the lead teacher, starting at about 8:30 am until 1:30 pm, and then from 3:00 to 3:30. The Arabic language instruction took place in the Arabic and Islamic studies classroom, between 1:30 and 3:00. The setting of the two classrooms is similar, with emphasis in each classroom given to the language being taught, English in the lead-teacher's classroom and Arabic in the Arabic classroom. Below is a description of both classrooms. For the purpose of clarity in the description of these two classrooms, I referred to them as 1) the lead teacher's classroom and 2) the Arabic classroom.

This division might imply that the English language or the Arabic language is being used in each classroom. However, both languages are present in both classrooms in different ways. In the lead-teacher's classroom, where English is the primary language for communicating with the children, the teacher reviews Arabic letters, numbers, and colors as a way to reinforce Arabic language development. In addition, if the lead-teacher feels a child might understand better if told in his/her mother language (Arabic or Spanish), she asks for a native speaker of that language to translate to the child, mainly for discipline purposes. In the Arabic class, however, instruction is delivered in English. The teacher uses Arabic only when she is conversing with native Arabic children whom she is confident that they speak Arabic, however, she delivers instruction in English. In fact, the teacher insists that these children converse with her in Arabic in order to encourage their Arabic language development.

#### **4.3.2.1 The Lead-Teacher Classroom**

The classroom is well organized, colorful and cheerful for children. There are nine learning centers in the classroom: blocks center, technology center, sensory center, reading center, math center, kitchen center, arts center, science center and literacy center. Figure 4.2 shows the classroom from one angle, showing the area where the child leader of the day revises what have been taught to date.



*Figure 4.2. The Lead-teacher classroom – Morning-Revision Area*

The teacher usually divides the children into groups of two or three and rotates them between the learning centers for the day. The children usually spend about 15 minutes in each center, and rotate to the five learning centers.

The children's work is usually displayed on the classroom walls and board, or outside the classroom on display boards. The children enjoy looking at their artifacts and telling visitors about them. They are always eager to take it home in order to show to their parents. When their artifacts are displayed outside the classroom, the children look at them on their way in and outside the class and like to tell other grade level children about it. For example, the children designed a house on cardboard using small stones (see Figure 4.3). On their way out of the classroom to drink water, a child from the third grade passed by. All the prekindergarten children shouted out to him, "look, this is mine," said Jehan; "this is a house," added Manal; "we made it in Str. Jane's class," commented Jehan; "we used rocks to make it, isn't that awesome?" said Ali. The children displayed pride in their work and expressed happiness to see their crafts displayed

for everyone to see them. These exchanges between other students took place primarily in English.



*Figure 4.3* A House Illustration Using Cardboard and Stones

Instruction in the lead teacher's classroom is carried in English. There are many educational materials in the classroom. On the walls, there are wall charts displaying: English and Arabic alphabet, days of the week, months of the year, seasons, the weather, classroom rules, drawings that show colors and shapes, numbers, rhyming words, and pictures close to each center to represent the purpose of that center. There are two carpets in the classroom where the children sit during review and instruction time and during *magic wall* time (projecting songs, stories, and pictures on the wall). There are two computers in the classroom, and the teacher usually brings in another when there are three children in one group during center time. There

are comfortable chairs in the reading center for the children to sit on when they read. There is a round red table in the math center with four chairs, a brown table in the literacy center with four chairs, a white table in the Arts center with two chairs and a half-circle table in front of the teacher's table with four chairs.

There is a small fish tank with two goldfish in the classroom, which the children feed everyday. There is also a white board and a magnetic black board. The teacher usually uses the magnetic blackboard to display children's artifacts. These artifacts change every month to represent the letters that they are studying each month. In addition, there is a chart on the board that reads: 'yesterday', 'today' and 'tomorrow.' As part of the daily routine of the classroom, the children use this chart to place the correct day on each category as a way to teach the days of the week. Besides, there is a pocket chart where the student groups for each day are organized so that the teacher knows which child was grouped with whom and where.

One feature of this classroom is a reward system that is made clear to the students and is emphasized by the teacher and her assistant almost every day. There is a chart with a smiling green apple, a neutral yellow apple and a sad red apple. At the beginning of every day, all the children's names are placed in the green apple and they are encouraged to remain there in order to receive the 'good student stick' at the end of the day. The teacher gives each child an ice-cream stick at the end of the day if they maintain their name in the green apple by following classroom rules. If a child does not follow the classroom rules, they receive a couple of warnings, usually three, before the teacher moves their name to yellow. If the child continues to disobey rules, their name is moved to red and they lose their 'stick' for the day. Losing the ice-cream stick means that the child will not receive a treat on Friday, the last school day of the week.

The lead-teacher's classroom organization and instruction, the daily routine and reward system support emergent literacy development in English and, to some extent, scaffolds Arabic literacy development. The teacher's systematic instructional methods such as digital technologies, including the projector, the computers and the Internet, and print materials provide the children with multimodal literacies that are considered important constituents of today's educational processes (Gee, 2004). The understanding of the classroom system and the use of digital technologies to support literacy development provide a context to make sense of the teacher's efforts to construct the children's digital biliteracy experiences.

#### **4.3.2.2 The Arabic Classroom**

The Arabic and the Islamic Studies classroom is shared between the pre-kindergarten's Arabic teacher, who also teaches Arabic and Islamic Studies to kindergarten, and the Islamic Studies teacher of the other grade levels. Figure 4.4 shows the organization of the Arabic classroom. The classroom has a carpet where the children sit during review, instruction, and during free time. There are eight small rectangle-shaped tables in this classroom, every four are grouped together to make two groups of four. There are also two round tables in the classroom with four chairs each.





*Figure 4.4 The Arabic Classroom*

On the walls, there are several artifacts made by the higher grades children in addition to images of the *Ka'aba* (the Holy House in Mecca), verses from the *Qur'an* and educational wall charts showing guidelines for writing in Arabic, and steps for getting ready for prayer. The days of the week, the numbers, shapes, colors and Arabic alphabets are written in Arabic and displayed on the wall. There is also a wall chart of the transportation vehicles and their names in Arabic script. In addition, there is a magnetic blackboard, where the teacher displays new letters and pictures that start with that letter, and a small white board that the teacher occasionally uses to write and draw during instruction.

The class starts with a review done by the leader-of-the-day (the same leader-of-the-day in the lead-teacher class) for about 5 minutes, and then the teacher asks the students to say words that start with the Arabic letters that they have studied. The children usually provide words that



they have studied in class, but also bring in their own words that they might have thought about themselves or were supplied by their parents at home. They then review the *Qur'an* verses that they learned in the previous class, continue the same verses or move to a new *Sura* if the teacher feels they have memorized it. The students, then, move to sit on the tables in order to complete activities and commercially produced worksheets that come from their text and workbooks in order to practice what they are studying. After that, the students have a snack time for about ten minutes. There is one laptop in the classroom that the teacher uses to project the *Qur'an*, Islamic stories, the letters of the Arabic alphabets, and the Arabic numbers during snack time.

The selection of the order of letters, the words to be taught, and the worksheets that the children complete follow the curriculum that the school has adopted. There are 28 letters in the Arabic alphabet system, all of which are consonants. However, there are six vowels in Arabic, three short ones and three long ones. The short vowels are in the form of marks placed on top or below the consonant letter in order to show the correct pronunciation of the word. The long three vowels are also consonants but called vowels when they are used to put stress on the consonant. The short vowels are used with all the consonant letters and taught to the prekindergarten student at Al-Noor school throughout the year. This focus on short vowels is not typical in the Arab-speaking nations at the pre-Kindergarten level. Al-Noor School is exposing students to an advanced level of Arabic literacy than they would be doing if they were being schooled in their home countries.

#### **4.3.3 Daily Routine**

The following description is a typical day of the daily routines that the pre-kindergarten children follow at school:

#### **4.3.3.1 Pre-class Time**

Around 8:15 am, children start to arrive at the school where a staff member is waiting for them by the door and welcomes them inside to the waiting area. The children sit down on a carpet or sit in the library. They usually chat with each other about different topics. They get in groups mostly according to age. The pre-k children are usually the ones who gather last. At around 8:25 am, the staff member starts to organize the kids into rows by calling the grade level and wait until their teacher comes down to lead them to the classroom on the second floor of the building. After all the older children have gone upstairs, the pre-kindergarten lead-teacher comes down. While they are downstairs, usually waiting for all the children to arrive, the lead-teacher greets the students and asks about their day. They often run to her when she gets down and give her a hug. The teacher then announces the leader of the day, who will stand in front of the line and lead the group upstairs, assisted by the classroom teacher and her assistant at about 8:35 am. The reason the pre-kindergarten children are taken in last is because they take a long time to get their backpacks into the racks, which might cause crowding in the hallway if they go up before the older children. Before the children get into the classroom, the children get their folders and lunch boxes out of their backpacks and place each in the designated places (red box by the door for lunch boxes and white basket on the grey round table inside the classroom for folders).

#### **4.3.3.2 Morning Class: Full Academics Content**

The children then sit on the carpet and the leader of the day starts reading the classroom rules by holding a pointer and pointing to pictures that show the rule in print and picture. The child then points to each alphabet letter, gives example words of words and children's names that start with that letter and says the sound of the letter. S/he then says all the alphabet letters with the whole class. After that, the child reads out the date by reading the numbers on a calendar on

the wall. The children are also taught pattern identification and are expected to apply the pattern they learn to the date cutouts. The teacher has a box that has the numbers 1--30 written in paper cutouts. Each side of the paper cutout has a number written on both of its sides, one side showing a picture of an apple and the other side showing a picture of a book. The children have been learning the 'AB' pattern (the AB pattern on the calendar would show the numbers on the calendar illustrating the patterns of apple, book, apple, book, ... etc.).

After that, the child leader of the day says the day, if s/he finds it hard; the teacher gives a prompt by singing the "Song of the Days" which is:

*Sunday, Monday, Tuesday, Wednesday, Thursday, Friday,*

*Saturday,*

*There are seven days, there seven days; there are seven days in a week!* (Children show the number seven using their fingers and jump).

Another child will then say the previous day and a third one will say the next day. Once they figure them out, each of the three children puts a cut out with the name of the day on a chart on the board, indicating: 'yesterday', 'today' and 'tomorrow.' The teacher, then, asks everyone to say the full date, month-day-year, and then the leader of the day writes on the board. After that, the teacher asks the children: how many months are there in a year? They start guessing and a few of them give the correct answer. The teacher tells everyone to say the months together while the leader of the day point at each month on a chart on the wall. Then the teacher asks the students: What season are we in? And they answer together: summer/fall. Then the teacher asks about the weather and usually the children give the correct answer from among the choices that

are displayed on a chart on the wall (with printed letters and pictures): sunny, cloudy, partly cloudy, windy and snowy.

After that, the child leader of the day moves to a chart on the next side of the wall where s/he says the shapes, then says the colors and numbers in English, Arabic and Spanish, each time followed by the class repeating after him/her. The leader of the day, then, says the rhyming words that are posted on the board. After that, s/he turns to the opposite side of the wall and reads the sight words. S/he then selects one child at a time and points to one of the sight words and asks them to read it. Finally, the leader of the day switches off the lights announcing time for the *Magic Wall* and goes with the assistant teacher to the other side of the classroom in to feed the fish.

During *Magic wall* time (the projector), the teacher uses “YouTube” videos and/or videos from ‘Have Fun Teaching,’ that sings, talks about and/or provides words that start with the letter of the week. The pre-kindergarten teacher also uses ‘Have Fun Teaching’ which is an educational website that offers teaching resources in the form of worksheets, activities, songs, videos and flash cards for free in addition to other tools that can be purchased. The children seem to enjoy and get involved with these videos. For instance, my daughter comes back home usually singing songs about the letter of the week or saying new words that start with that letter. Sometimes, the teacher reads a book to the students or shows a book on the screen. After this, the children split into two groups, four-year olds stay with the lead teacher and three-year olds go to a separate room with the assistant teacher. During this one hour, the students do crafts, coloring or worksheets around the color, number, letter, or sight word they are learning or other concepts they are studying. Recently, the teacher started to use the website ABCmouse.com during this time too. She splits the four years old children into two groups; one group works on the computer

while the other group complete worksheets with her. During the first month of the year, before introducing ABCmouse.com, the children used to get into two groups as well, but some do the worksheets while the others do specific activities related to some concepts they are studying, same/different, rhyming, etc. The children seemed to enjoy using the computers more than the worksheets, as shown in the children's profiles (chapter five).

After one hour, all the three and four year-old children come back together as a whole class. The teacher divides them into four groups of two and one group of three (the total number of children in the class is 11) and assigns each group a center. Centers and group members change everyday. The only exception to this routine is the use of the technology center, which is featured every Monday, Wednesday and Friday. The literacy center is considered the main center, where the children do craftwork featuring the letter they are learning (See Figure 4.5 for an example of children's crafts). Once the group in that center finishes, it is time for everybody to move to a different center. At 11:35 am, all students should finish cleaning up. The children are then directed to sit on the carpet and get ready to put hand sanitizer on their hands and go for lunch. All the kids are expected to sit on the carpet cross-legged, have their hands ready for the teacher/assistant to put the sanitizer and wait for their name to be called. The teacher then gets the red box located next to the classroom door and where all the kids put their lunch boxes. She passes the lunchboxes out, starting with the leader, who will lead everyone down the stairs. Children who do not sit cross-legged or who move around will not be called until they stay in place and follow the rules.



Figure 4.5 Pre-Kindergarten Children in the Literacy Center – B is for Butterfly

#### 4.3.3.3 Lunch Time

Time for lunch usually starts at 11:45 am and lasts for 15 minutes. When all the children are ready to go downstairs, the teacher tells them: “my hands are hanging behind my back, my feet are on the floor, my eyes are looking straight ahead, I’m ready for the door”. Then they sing, “we’re following (child’s name, three times), we are following (child’s name) down the stairs.” Once they get into the library, where they are going to have lunch, they sit, or get seated and say the eating duaa (prayer) “*allahuma barik lana feema razaqtana waqina athab alnar, bismillah*” (O Allah, bless the food you provided us and save us from the punishment of hellfire, in the name of Allah). Saying this prayer before meals is an Islamic tradition that is taught at the school. The teacher teaches the *duaa* in an oral form by saying it and asking the children to repeat after her. They sometimes see this *duaa* and other prayers they learn at school in written form as a text that they color. The teachers also remind the children to say it before eating

everyday. The children are expected to say the prayer at home, too. Religious and cultural practices that emphasize the importance of family, honoring age and wisdom, etc. are instilled in the children and discussed with them frequently. The reason for that is to give them a sense of belonging and understanding of the Islamic values and Arab culture and to support the cultural practices of their homes and families.

Many conversations go around during lunch, usually looking for common food items they have, saying the shapes of the containers, color of the day if it is present and favorite food. It's a precious time for the children because they get to talk about things they like. The children mostly use English in their conversations. They sometimes say some words in Arabic if they do not know how to say them in English. These are usually names of the food items that they bring from home and conversations that were carried at home and they are reporting them to their friends at school. However, some children prefer to use Arabic with their peers, like Manal. Her friends respond to her in Arabic too, particularly the children who speak the same Egyptian dialect.

When a child finishes his/her food, the lead teacher, her assistant or a staff member accompanies him/her to the restroom in order to wash their hands and use the restroom. Once all the children have finished, the leader of the day stands to form a line and all other children stand behind him/her. The teacher says, "my hands are hanging behind my back, my feet are on the floor, my eyes are looking straight ahead, I'm ready for the door" and all the children go out to the playground accompanied by the assistant teacher and a staff member who acts as the Physical Education teacher.

#### 4.3.3.4 Play Time

The children head to the playground outside the building, the green field or stay inside the building if the weather is cold or windy. The P.E. teacher usually asks the children to perform some exercises such as skipping, hopping, running or passing balls to each other. These activities usually last for 10 minutes. After they finish the activities, they go to the playground where they talk, slide and run. They usually divide themselves into two groups, one that chase each other and the other one that plays on the slides. A lot of talking take place during playtime when the children share a game they played with their friends outside school or at home with their siblings. They also talk about what they did with their parents or upcoming events that they are planning.

#### 4.3.3.5 Naptime

Around 12:25, the children come back into the building, drink some water and then go upstairs again led by the leader of the day. They go into the classroom where the class teacher is waiting for them. They sit on the carpet and either watch *magic wall* or listen to a story read by the teacher. During this time for *Magic wall*, the children usually listen to a relaxing-tone song such as “ten in the bed” or other songs from starfall.com. Stories are usually around the sight word that the children are learning. After that, the children line up again, go to drink water and come back to the class. The children are supposed to nap for one hour. They sometimes listen to some verses from the *Qur'an* in a low volume or listen to a story. Most of the children fall asleep during naptime. The ones who do not sleep can read a book silently or just stay on their mattress until the end of naptime. At 1:30, the teacher wakes the children up. The children are expected to help the assistant teacher fold-up their mattresses. After that, the children line up in order to go for a drink of water, and then go to the Arabic and Islamic Studies classroom.



#### 4.3.3.6 The Arabic and Islamic Studies Class

Before they get into the Arabic and Islamic Studies class, the Arabic and Islamic studies teacher is usually waiting for them at the door. Each child is greeted and is expected to respond back with the Islamic greeting (teacher says: *Alsalam Alaikum* (Peace be upon you); child responds: *Wa Aalaikum Alsalam* (May peace be upon you too)). The teacher then asks them to sit on the carpet and start the class by having the leader of the day, same leader of the day as in the main classroom, say the Arabic alphabets, the days of the week, the numbers and the colors, all in Arabic (see Figure 4.6), while the other children are listening. She then asks the children to say words that start with the letters that they have been studying and focuses on ones that are mentioned in their book. The teacher then introduces the new letter, explains the words that are in their book that start with that letter and then proceeds to show the children the activities that they will complete in their books. After that, she calls every child to his/her seat and she goes around and helps him/her complete the activities. If a child finishes, they get to have free time where they can play with blocks, toy fruits, color, etc.



Figure 4.6 Wall charts showing: A,B) Arabic numbers, C) letters and D) days of the week

At around 2:50 pm, the assistant teachers prepares the children's snack and have it ready while the children are finishing up their work or sitting on the carpet playing during free time. After all children have finished their work, she then places each child's cup and bowl on the tables and calls each to the table. The children usually look for their names, which are written in English on the cups and bowls and sit down to eat. During this time, the teacher prepares the projector and once everyone is seated, she plays the alphabets, the *Qur'an*, or stories, mostly in Arabic but sometimes in English too.

As the children finish their snack, they go and sit on the carpet and continue to watch the *magic wall*. At 3:00 the children get ready to go back to the lead teacher classroom. The Arabic teacher calls them one by one to stand in a row, tells them about how they did in the classroom and rewards them accordingly. Usually the child who had listened and behaved gets rewarded with a sticker, candy, and gets a green mark next to his name on a chart by the door. If a child hasn't listened to the teachers' instructions, they get a yellow or red mark; depending on how many warnings s/he got during the class. After that the children say 'a'salam alaikum' to the Arabic teacher, shake hands with her and proceed to their class.

#### **4.3.3.7 Math/Science and Social Studies Time**

In their class, the lead teacher is usually preparing the *magic wall* for them or waiting for them on the carpet to read a story. This last half an hour of the day is usually dedicated to math, science and social studies. So the children, listen to a story, watch the *magic wall*, sing together or do an activity that is on the subject being learned that day. At about 3:25, the teacher starts call one child at a time, starts with the leader of the day, to go get their backpacks and on the way she gives those who have followed the rules and teacher's instructions a stick. They place the stick on the wall, in an envelope that has their names, get their backpack from the rack outside the classroom and return back and sit in the carpet. At 3:30, the teacher calls the children to stand on a row, tells them "my hands are hanging behind my back, my feet are on the floor, my eyes are looking straight ahead, I'm ready for the door". She makes sure that the children have followed the instructions and then starts marching them downstairs where their parents are waiting for them.

#### **4.4 Summary: Literacy Development the Arabic and the English Classrooms**

Arabic and English languages are used differently in the Arabic and the English language classroom settings.

There are some similarities between the kinds of tasks that children are performing in Arabic and in English. For example, in both classes, the children start with a revision of all the letters of the alphabet, the numbers, colors and shapes. Both teachers believe that digital technologies provide digital literacies that the children are interested in and enhance literacy development (see sections 6.1.1 and 6.2.1 for more details). In the English classroom, however, there is a daily task at the literacy center where the children produce crafts related to the letter they are learning (see Figure 4.5 for an example of craft-work made during the English class), and there is hands-on use of the computers when the children complete tasks on ABCmouse.com or StarFall.com three times every week (see Figure 4.7). On the contrary, craft-work is very limited in the Arabic classroom due to the limitation of time (see Figure 5.3 for craft-work made by the children during the Arabic class). In addition, the children do not have a hands-on experience using digital technologies because of time limitations and the unavailability of an educational website devoted to teaching Arabic. Moreover, biliteracy is supported in the English language classroom because the teacher revises the letters of the alphabets, the numbers and the colors in both English and Arabic (see sections 6.1.1 and 6.2.1 for more details).



*Figure 4.7 Children Completing Tasks on StarFall.com at the Computer Center*

There is no planned connection between the letter of the day or week in the English language classroom and the Arabic language classroom. The teachers use different planned curriculums and follow the sequence of the assigned book for each language. As a result, the curriculum taught in the Arabic classroom does not correlate to the curriculum taught in the English classroom; letter, numbers, and shapes are not taught simultaneously in each of the classrooms. However, I have observed the children making connections between the letters of the Arabic and English alphabets in both classrooms. For instance, Ali once told Str. Susi that the letter 'R' sounds like the Arabic letter 'ر' (/r/) that they learned a few weeks ago in the Arabic class. Similarly, another student made the same point in the Arabic class explaining that the letter 'l' sounds like the letter 'ل' that they learned in Str. Susi's class. In the same fashion, the children make connections between the names of the shapes, the numbers, and the colors in English and Arabic. Research has indicated that children usually make connections between the

two languages and two writing systems and instruction even when their teachers and the curriculum do not (Moll and Díaz, 1987).

## **Chapter Five: Profiles of Participating Children and Families**

### **5.0 Introduction**

In this chapter, I provide an in-depth description of the five focal participating children in this study. First, I separately present the profiles of the participating children and family with particular detail to each family's migration history, educational background, home environment, conditions of access to digital technologies, and the parents' cognizance of the level of their children biliteracy. I also describe the children's schooling experiences, with particular detail to their teachers' views about the children's biliteracy development and their interest in digital technologies. Data for this chapter come primarily from interviews with children and parents as well as classroom observations. Pictures of the families' practices with digital technologies were not obtained due to the families' rejection to take pictures at their homes.

The mothers of all the participating children represented the family views presented in this study. Interviewing fathers was difficult, as gender mixing is not acceptable in the Arab culture. That is why there are usually two sitting rooms in Arab homes (one for men and the other for women, including the homes of the case-study families). In all the cases, conducting the interviews in Arabic or English was offered to the families as an option. Of the five mothers, four mothers opted to conduct the interviews in Arabic and one mother opted for English because Arabic is not her first language. However, in some cases, code switching was prevalent during the interviews. Pseudonyms have been assigned for each family, and the young children as well. Tables 5.1 and 5.2 provide the pseudonym and demographic information of each family including nation of origin, reason for being in the United States, years in the United States and El Paso, parents' levels or years of formal education, current occupations, number of children, the position of each child in the family and the predominant language(s) used at home by the parents

and their children. These variables are important in understanding the participants' experiences and biliteracy development processes because they provide the context needed to understand the different factors that affect biliteracy development in each household.

Table 5.1

*Demographic Information about the Participating Families*

	Name	Nation of origin	Reason for being in the U.S.	Years in U.S. and El Paso	Siblings
1	Ali	Both parents from Egypt	Work (immigrant)	U.S.: F=13 M=11 El Paso: F=13 M=11	Farah: 10 Ahlam: 7 Ali: 4
2	Manal	Father Egyptian, Mother Mexican	Work (immigrants)	U.S.: F=16 M=12 El Paso: F=2.5 M=2.5	Ahmed: 7 Manal: 4 Ameer: 1
3	Lama	Both parents from Palestine	Work (immigrants)	U.S.: F=32 M=11 El Paso: F=27 M=12	Dana: 9 Zahra: 7 Lama: 3
4	Jehan	Both parents from Libya	Study (transnational immigrant)	U.S.: F=4 M=4 El Paso: F=3 M=3	Jehan: 3 Ismail: 2
5	Majid	Both parents from Libya	Study (transnational immigrant)	U.S.: F=7 M=7 El Paso: F=4 M=4	Azan: 5 Majid: 4



Table 5.2

*Parents' Levels of Education, Occupations and Language Spoken at Home*

	Name	Parents levels or years of formal education	Current jobs	Language(s) spoken at home
1	Ali	Mother BA, Father MA	Father staff at a local university	Parents: Arabic Child: Arabic with parents, English with siblings and friends
2	Manal	Father MD., Mother BA	Father Doctor	Parents: father Arabic, mother Spanish Child: Arabic with father, Spanish with mother Arabic with friends who the knew outside school
3	Lama	Father BA, mother doing BA in nursing	Father Taxi driver, mother student	Parents: Arabic Child: English
4	Jehan	Father doing PhD in Geology, mother taking ESL courses	Father TA/ Mother student	Parents: English Child: English
5	Majid	Father doing PhD in engineering, Mother dropped out of school at 17 year-old age	Neither parents are employed	Parents: Arabic Child: English

In the following section, I describe the children's literate lives at home and at school in order to provide details the ways digital technologies are shaping their literacy development in Arabic and English. Their profiles help us frame their engagement in digital biliteracy practices as being socially constructed and practiced in particular literate contexts. In addition, considering the families' permanent or temporary status in the United States (see Table 5.2)

allows us to understand the reasons that motivate their emphasis on literacy in one language over the other.

## **5.1 Ali**

### **5.1.1 Ali's Family**

Ali's parents moved to the United States a few years apart. His mother, Aseela, said that that they came directly from Egypt to El Paso, Texas. The family's migration history started with the father, travelling to El Paso to get his masters degree in 2000. He then got a job there and decided to stay for a couple of years, in order to establish himself economically. Two years later, he got married and his wife, Aseela, travelled to El Paso to live with him. Ali's family has always had the intention to go back to Egypt but the political and economic situation there have been holding them back, the parents stated.

Both parents in this family are college educated (see Table 5.2). Ali's father, who is 42 years old, has a Master's degree in computer science, and the mother, who is 38 years old, has a Bachelor's degree in business. They have three children: two daughters age ten and seven, and one son who is four years old (see Table 5.1). All their children were born in the United States.

This family lives in a duplex house that has a small backyard. Ali and his sisters have one room that they share, in which they all sleep on separate beds. Whenever I visit, the children run to the door and open it for me happily. I have known this family for three years. They have American style furniture: sofas, chairs and coffee tables in the living room, dining table in the kitchen, but also a separate sitting room for men, which is primarily a bedroom.

There are many artifacts hanging on the wall that reflect the family's Islamic heritage and the Egyptian culture, such as images of religious places and quoted verses from the *Qur'an*.

They also have a digital watch that calls for prayers when it is time. In addition, there are many

drawings and art pieces on the walls made by Ali at school. Aseela did not use to display these on the wall. She tended to unintentionally or unconsciously discard them until one day Ali told his teacher at school that he was upset that his mom did this. When Ali went home, he told his mother that he informed his teacher about it. Since then, Aseela told me that she keeps all his artifacts, even the torn and broken ones.

Ali's mother stated that their Ali is literate in both Arabic and English; he can read and write both the Arabic alphabets and the English alphabets, and he sounds out words in both languages too. Ali's mother stated that Ali is learning how to speak Arabic from both parents, whose primary language is Arabic, and is learning how to speak English from his older sisters. She also stated that Ali's sisters speak Arabic with them and speak English with each other. It seems that Ali learns Arabic from both parents and English from his sisters.

Ali's mother stated that Ali could write and read the letters of the English alphabet, read the letters of the Arabic alphabet, can count numbers 1–100 in English, and counts numbers 1–20 in Arabic. Ali's mother stated that Ali's sister, Ahlam, helps Ali to learn letters, numbers and helps him memorize the *Qur'an*. Ali's sister Ahlam also helps him practice writing his name and his family's names in Arabic and English. When asked about the role of digital technologies in Ali's early language development, Ali's mother stated,

Before he goes to school, Ali used to watch a lot of cartoons on the computer. That is how he learned to speak English. He would copy Animals names from his books and use Google to look for and watches videos about them. I was surprised to see how he was using the computer on his own.

When asked about how the parents spend time with their son, his mother indicated that

they tell them stories about their childhood and teach them about their culture. They sometimes show them pictures of their country and places that they have visited when they were living there. They also talk to them about their family members, especially their grandmother, uncles and aunts. Ali's mother also stated that their father likes to tell them religious stories that carry morals such as honesty, justice, and equality.

Ali's family does not have a television. Instead, they have a desktop computer in the living room. The children use the computer to watch cartoons through YouTube. They also use it to complete school projects, such as finding information, pictures, and definitions for words, watching videos and completing homework assigned by teachers through different websites, such as studyland.com. In addition, they use the computer to listen to children's Arabic songs called *Toyor Al-Janah*, Skype with family in Egypt, and send pictures through emails. Other digital devices that the children 'own' are a camera, a tablet, a DS (short form of Digital Stereoscopic portable gaming device) and an iPod (Apple brand MP3 Player).

Ali's mother asserted that Ali primarily spoke English because "he used the computer, and the iPod to watch cartoons and videos on YouTube". In the afternoon when Ali's sisters come home, he watches Arabic cartoons with them. When asked about Ali's use of digital technologies to learn Arabic, Ali's mother responded that, "They learned about this *Hikayat A'alamiyah* (world stories) from their friends at school and they like to watch them a lot." Ali also sits with his mother when she Skypes with her family in Egypt. She talks to her mother, her sisters, and her mother in law almost all weekdays and Ali "sits with me and chats with them too. He likes to speak to his aunts, grandmother and cousins". Ali's mother stated that Ali watches cartoons and videos in both Arabic and English, at "approximately 70 percent in English and 30 percent in Arabic."

Ali's mother indicated that she and Ali's father consider Arabic and English to be equally important for their children. They want their children to be literate in both languages:

As much as English is important in this society, Arabic is important for understanding our culture, our history and our religion. I mean Ali needs to read and understand Arabic in order to be a good Muslim as the *Qur'an* will teach him all he needs to know about being a good person, treating others well, behaving with good manners, and living a good life.

Ali's mother stated that they enrolled Ali and his sisters in the Al-Noor School because they want them to receive formal Arabic instruction. This is because:

Arabic is the language of the *Qur'an* and it is part of our culture. Our children will be in better positions to learn to read and write it because it is important and because we want them to be able to communicate with family members back in Egypt.

Ali's family considers the Holy Book of the *Qur'an* to be a valuable resource that is vital for Muslim children to read in order to succeed in life.

The family sees the role of school to be fundamental in teaching children to read and write because, "as much as we try to teach Ali at home, he listens to his teacher more than us," Ali's mother asserts. However, Ali's family tries to help him memorize the *Qur'an* at home through the use of digital technologies. His sister Ahlam has downloaded an application (The Young Muslim) on the iPod for him to listen to, which recites passages from the *Qur'an* recorded by other children. Ali's mother stated that, "the app really helped him memorize the *Suras* (chapters from the *Qur'an*) that he is supposed to memorize because he enjoys listening to

the children's recitation."

Ali seems to be interested in both Arabic and English as part of his biliteracy development. His mother reported that Ali consistently asks for English equivalents for words that he knows in Arabic, and asks for translations of Arabic words into **English**. Ali's mother, whose English is limited, stated that she occasionally uses *Google translate* to translate words between Arabic and English whenever Ali asks for equivalents that she does not know. Ali also listens to stories that are digitally read aloud on the tablet. When I asked him about his preference for digital or print books he said, "I like the ones on the tablet because I can see the pictures move and I can listen to the stories anytime, even when my sister [Ahlam] is busy. Because she is the one who reads to me." Ali appears to like digital stories because they are interactive and available anytime he wants them. He likes to listen to stories in both languages but mostly enjoys ones that are in English because, Sister Susi "reads to us in English and I love her a lot". He also added, "if sister Jane reads stories to us in Arabic, I will watch more Arabic stories."

Ali can read words in English. His mother said that while his teacher obviously teaches him how to read in English, she thinks, "The tablet has helped him learn to read words." Ali's mother indicated that her son has an application called 'First Phonics and Letter Sounds' in his tablet, with which he practices how to sound out individual letters in a particular word. She believes that this application has tremendously improved his reading skills because "he continuously uses it at home and then he reads words in his sisters' books." The application helps the user sound out individual letters in a word and then pronounces the word. The user then has to match the word with the pictures that represent that word. It gives the user a choice between four pictures and the user has to click on the right picture. This application was

available in the tablet when they bought it. The children learned how to use it on their own by exploring it and talking about it with other friends who owned the same kind of tablet.

### **5.1.2 Ali at School**

Ali was in his first year of pre-school during this study. Although he is learning a lot of new concepts, his teachers are very happy with his progress and have described him as an advanced-level learner. Ali is doing well in the general subjects and Arabic. The Arabic teacher, Str. Jane, is very impressed by his ability to memorize and learn quickly that she moved him from the level one (beginner) to level two (intermediate). She always thought that his parents help him with schoolwork at home and that they care about him learning Arabic. She says, “That is clear because he is advancing very quickly.” Str. Susi is also proud of his performance and has repeatedly described him as a ‘smart boy’ during the interviews.

Ali loves school and feels bored during the weekends. When I asked him about what he likes at school, he said, “I like playing with my friends and learning new things.” Ali also added that, “I like reading the *Qur’an* and Arabic.” He cooperates with his classmates and plays with everyone, although he told me he has preference of playing with some of them. Yet, the language that the children use does not seem to be a factor in who Ali likes to play with at school. He uses English to speak with the other children and his teachers, unless the children are speaking in Arabic.

Ali prefers to speak in English with his classmates. He uses English to speak with the other children and his teachers, unless the children are speaking in Arabic. However, he does use Arabic in the middle of a conversation after starting in English when he is looking for the right word to describe something for which he doesn’t know the word in English. For instance, when Ali wanted to tell one of his classmates that he saw a chick when he visited his family in Egypt,

he did not know the word “chick” so he said “ we saw the.. ahh ... amm .. the small *farkha* (chicken).”

Every two weeks, Ali gets a turn to be the leader of the day (see section 4.3.3 for more details). Ali has consistently shown progress and language development in both languages. Although the schedule in the teacher’s annual plan is to teach numbers 1–10, Ali can already count from 1–20 in both English and Arabic and 1–10 in Spanish. He can name colors in Arabic, English and Spanish. In addition, he can read and write the letters of the English and Arabic alphabets.

Ali pays attention and follows classroom rules. He likes coloring, but sometimes rushes so he can have ‘free time’. He likes to use the computer. During his use of ABCmouse.com, he seemed to spend time in coloring pages, but he mostly liked playing games such as jigsaw puzzles, mazes and games. When I asked him about what he likes to do on the computer he replied, “I like to color. It is fun.”

## **5.2 Magid**

### **5.2.1 Magid’s Family**

Magid’s family came from Libya to Portland, Oregon in 2007, where his father enrolled in English Language classes that were a prerequisite for his Masters degree. After a year, they moved to El Paso, where Magid’s father enrolled in an engineering masters program and then in a Ph.D. program. Magid’s family intends to go back to their home country-after his father finishes his studies. They consider themselves “temporary citizens” in the United States and look forward to going back to their country. When asked about the difference in life between the United States and Libya, Magid’s mother said that life in Libya is better economically and culturally because her husband has a good job there. In addition, she thinks that living in Libya



will provide her children with better opportunities to learn about their culture and socialize with their cousins. Magid's father is currently a Ph.D. student in Engineering. His mother dropped out-of-school when she was 16 and got married when she was 17 years old. Magid's father is 32 years old and his mother is 25 years old. Both of their children, Azan and Magid (see Table 5.1 for more details) were born in the United States.

This family lives in a duplex house with a small backyard. Magid and his brother have one bedroom where they sleep on separate beds and keep their toys. They have American style furniture: sofas, chairs and coffee tables in the living room, dining table in the kitchen. When Magid's family invites friends over to their house, usually women meet in the house and the men meet in another house or outside. However, most of their gatherings are in the community center or outside in a park.

Magid's father has a laptop computer that he uses for school but is not available for the children to use. His mother has a smartphone that she uses to call family in Libya but this too is not accessible to the children. Magid and his brother share an iPad that they use to watch cartoons, mostly in English (80% English and 20% Arabic according to their mother).

In the sitting room there is a television that is connected to both local cable and an international receiver that broadcasts Arabic channels. Magid and his brother spend most of their leisure time watching cartoons on TV and videos on their iPad. He watches cartoons with his brother on an average of four hours a day during weekdays. They usually watch cartoons in English on TV, when they get home from school, such as *Sid the Science Kid* and *Word World*, which are 'PBS kids' manufactured cartoons that present educational materials in science and language. They then watch Arabic cartoons through the satellite TV such as *Captain Magid* and *Can Ya Makan*, *Al Hayah* (Once upon a time, Life). When asked about their preference between

Arabic and English cartoons, Magid's mother said, "they sometimes cry while watching Arabic cartoons and I think that is because they do not understand it." When asking about how the parents spend time with Magid, his mother said that they go out to the park or to the community center where he plays with other boys. I observed him several times there and noticed the language he speaks with the other children was English.

Magid learned how to speak Arabic from both parents, whose primary language is Arabic, and learned to speak English through watching cartoons in the English language. Magid speaks English with everyone including his parents, brother, friends, and teachers. His parents speak Arabic to him most of the time but sometimes translate what they say to English when they feel he doesn't understand what they have said in Arabic. According to Magid's mother, Magid is literate in both Arabic and English. He can read and write the letters of the English alphabet, say the letters of the Arabic alphabet, and count from 1–10 in both English and Arabic.

Magid's mother reported that Magid learned to speak faster than his older brother. Magid was exposed to TV more than his brother who did not show an interest in watching cartoons until he started to go to school when he was four years old. Until then, Azan would just utter sounds and point to things in order to convey a message to people around him. On the other hand, Magid started to speak clearly at the age of two years and half years old, even before his brother Azan who was, at that time, three and half years old.

There is an artifact on the wall that reflects the family's Islamic heritage, showing quoted verses from the *Qur'an*. In addition, there are many drawings and pieces of art on the walls made by Magid at school, especially ones that have Magid's picture on them. Magid's mother keeps most of his art and intends to take them to Libya when they travel back because these artifacts "are not something that they would do in schools in Libya, they are unique." She takes pride in

her son's work at school and thinks that it shows that he is learning to become an independent child.

When asked about the frequency of listening to the *Qur'an* on TV and his iPad, Magid's mother said,

They do not listen to the *Qur'an* and I do not have an application on their iPad for them to listen or practice it. After all, they are not doing well in memorizing it at school and I do not think they are able to do so. I mean, maybe they are not ready yet, or maybe it can help to download some application to help them memorize. I did not think of that.

When asked about their view on the importance of the English and Arabic languages, Magid's mother indicated that she and Magid's father believe both Arabic and English languages are important for their children. Magid's mother reported that at this stage they think Arabic is more important because they are going back to their country soon and that's the language that everyone speaks and the language of formal schooling too. Magid's mother stated that they enrolled Magid and his brother in Al-Noor School because they want them to improve their English language skills and also to keep Arabic alive in their life. However, Magid's mother doesn't believe that the school has a role in helping them learn Arabic as Magid is not able to speak and understand Arabic well, nor he can write the Arabic alphabet. He can only say the letters of the Arabic alphabet, and that is "because he watches videos on YouTube that sing the letters and numbers in Arabic," his mother explained.

Magid seems to be interested in digital books more than in print books. His mother reported that when they bought print books, Magid and his brother would just look at the pictures

and would not open the books again. At times, they used to cut out the pictures from the books and then throw them away. For that reason, Magid's parents stopped buying printed books. When I asked Magid about whether he likes print or digital books, he said he likes digital books more because, "I like to see the pictures on the computer (he means the iPad's screen) and sometimes I can color them many times until the pictures looks like I want." Magid also told me that he likes to listen to stories in English because "I do not understand the ones in Arabic. When the cartoons are in Arabic I do not know what they say, I just guess by watching what they do."

Magid's ability to read in English and Arabic is limited, according to his mother. He knows some sight words that he learns at school but he doesn't try to sound out words by himself. He can say the names of the letters in the Arabic alphabet but is not able to read words in Arabic. However, he can easily name things in English when shown a picture. In an observation at his house, I showed him many pictures of fruits, transportation, and scientific equipment that appeared on the cartoons he was watching (Bob the Builder). I was surprised at how fast he was recognizing and naming the pictures although it was the first time he watched that cartoon, according to his mother. When I asked him about how he was easily able to name those items he said, "Well, I saw them on some other cartoons."

### **5.2.2 Magid at School**

At the time of this study, it was Magid's second year in the pre-kindergarten class. Magid is a quiet child at school, disobedient at times but generally calm. He gets in trouble most often because he doesn't follow instructions. His teachers are not very happy with his progress in school and blame that on the parents, in their opinion, who "don't follow up with what their children are learning at school." During the first two weeks of the school year, he would cry in the morning and pretend to be sick because he didn't want to go to school. However, his attitude

towards school changed over time. Now, Magid likes school and feels happy that he is going to play with his friends. He told me, “I like to go to school and play, magic wall is nice, and I like ABCmouse too.”

Magid cooperates with his classmates and plays with everyone. He doesn’t show a preference to play with anyone in particular. He speaks English with everyone in the class even when the children speak in Arabic. I noticed that he doesn’t seem to understand standard Arabic when I try to talk to him. His Arabic teacher has noticed the same thing, the reason why she speaks to him using the Libyan variety of Arabic.

Like Ali, and everyone in the class, Magid gets a turn to be the leader of the day. He struggles with the letters of the English alphabet, but he has been showing improvement every time he is the leader. And like all the other children, Magid is happy when it is his turn to be the leader (as mentioned in section 4.3.3). In an interview with his teacher, Str. Susi, she reported that Magid has shown a slight improvement in both English and Arabic language development over six months. Str. Susi thinks that is because Magid doesn’t concentrate in the class. She said, “he always looks sleepy, and when I asked his parents about it they told me he goes to bed late.” Similarly, the Arabic teacher, Str. Jane reported that Magid’s is not developing Arabic language with the proficiency he should be. She also added, “his mother uses baby-talk in Arabic with him, that’s why he is not developing the Arabic language.” Yet, Magid can count from 1–10 in English, Arabic and Spanish. He can also name the colors in the three languages.

Magid likes to use the computers at school. He likes to color, listen to songs and play color and art games such as *bubble plaster* and *primary color pop and peak*. However, he gets frustrated with puzzles. When coloring on paper, Magid always colors outside the line despite his teachers’ efforts to get him to color “neatly”. When I asked him about which form of coloring

does he prefer, paper or digital, he said “on the computer, it is easy.. And I can change colors when I want.”

### **5.3 Manal**

#### **5.3.1 Manal’s Family**

Manal’s mother moved from Mexico to Phoenix, Arizona when the mother was six years old (see Table 5.1). Her father moved from Egypt to the United States when he was 23 years old. Both parents’ reasons for settling in the United States were to seek better economic and educational opportunities for their children. Manal’s mother is a convert to Islam while her father was born a Muslim.

Manal’s family do not have the intention to look for jobs outside the United States, but realize that they might do so one day. Both parents are educated. The father, who is 35 years old, has an MD degree, and the mother, who is 31 years old, has a BA in psychology. They have three children (see Table 5.1 for more details). All the children were born in the United States.

Manal lives with her family in a two-story house that has a nice big backyard. Manal and her brother Ahmed have separate bedrooms where they sleep and keep their toys, books and school materials. They have an elegant Western style furniture: sofas, chairs and coffee tables in the living room, big dining table with six chairs in the dining room.

When asking the mother about their biliteracy, she affirmed that their four year-old, Manal, is literate in both Arabic and Spanish. Manal’s mother stated that Manal learns how to speak Arabic from watching Arabic cartoons that she purchases online and to a lesser degree chatting with friends, her brother and her father, whose primary language is Arabic (see Table 5.2). Manal also speaks Spanish, which she learns from her mother. Manal’s mother asserted that Manal did not learn to speak English until she joined school in Fall 2013. English is not spoken

at home except for about half an hour when her mother and father communicate with each other, which doesn't happen much since Manal's father is a doctor who spends most of the day at work. Manal and her brother speak Arabic with their father and they speak Spanish with their mother.

Manal can read and write the English alphabet, read and write the Arabic alphabet, and can count numbers 1–100 in English, Arabic, and Spanish. Manal's brother Ahmed practices speaking Arabic with her during the day after school time; they use both Arabic and Spanish at home to speak with each other. However, they mostly use Spanish because their mother spends more time with them than their father and that is the language they use with her. Manal's mother reported that when her children use a language, they do not code switch except when they switch talking between their mother and their father. Ahmed sometimes reviews Arabic letters and numbers with Manal and at times he also reviews the *Qur'an* with her too. Manal is an independent child, she likes to complete her homework by herself and doesn't seek her family's help. She would get a piece of paper and write her name in Arabic and in English letters without someone asking her to do so. Manal enjoys spending time using her own smartphone or her mother's computer and tries putting letters together to make words.

Manal's parents spend free time with their children between home and the community center. At home, Manal watches TV, plays games or just colors. At the community center, Manal usually plays with her friends if they were around or in the playground. She sometimes uses her smartphone to play games. When one of her friends bring their tablets, iPad or DS to the community center, she makes sure that she gets a turn to just explore it or play some of the games on the device. She doesn't carry her own smartphone there because, "she knows all about the applications in the her phone and she doesn't want to play them much."

Manal's family has a television in the living room that is connected to 'Dish Network' (a

channel streaming company that provides channels viewed in the Arab World). In addition, there is a laptop computer that belongs to their mother, which Manal uses to play Arabic educational games. Both Manal and her brother Ahmed have smartphones, which are not used as cellular phone but for entertainment. Manal has many Arabic applications downloaded on her smartphone, through which she plays games that help her practice writing in Arabic such as: dragging letters to the right place in order to name a picture and listening to interactive stories read to her. The children rarely use the computer to watch cartoons through YouTube since their parents purchase Arabic cartoons through the Internet in DVD format.

Ahmed and Manal use the computer at home to memorize the *Qur'an*. Ahmed in particular uses [houseoftheQur'an.com](http://houseoftheQur'an.com) to help him memorize faster, as well as the *iQur'an* application on his smartphone. According to Manal's mother, while Ahmed uses the website and the application, Manal would mostly sit with him and she has been showing more interest in memorizing as a result of that. Ahmed also uses the laptop to complete school homework assigned by teachers through different websites such as [studyland.com](http://studyland.com) and [istation.com](http://istation.com). Manal's mother sends pictures of the children to their family in Egypt via email, "but they don't really send me any," she commented.

In Manal's house, there are many artifacts displayed on the walls that reflect the family's Islamic heritage and the Egyptian culture such as short *suras* (verses) from the *Qur'an*, names of Allah and a sign that says *Ahlan wa sahlan* (welcome) written in Arabic script. In addition, Manal's mother displays all Manal's artwork from school on her bedroom door. Once the door gets full, Manal's mother takes a picture of it and takes the artwork down, then puts new stuff on as they come. Manal's mother believes that Manal doesn't do artwork in the Arabic class as all the artwork she brings home has writing in English.



When asked about the role of digital technologies in Manal's early language development, Manal's mother stated,

Since Ahmed was young, I used to buy Arabic cartoons for him in DVD form. So, Manal grew up watching these cartoons with him and speaking Arabic with Ahmad most of the time, especially while they watch the cartoons.

Manal's mother asserted that Manal primarily spoke Arabic because "she used the applications in her smartphone, and my computer and watched cartoons in Arabic, both Egyptian Arabic and Standard Arabic." She also added that, 'at times, Manal would go around the house speaking Standard Arabic,' which, according to her mother, she only heard through watching cartoons. In the afternoon when Manal's and her brother come home, they usually watch Arabic cartoons after they finish doing their homework and after Ahmed finishes his after school private Arabic lessons, which Manal "did not show any interest in joining".

Manal's father stays in touch with his family at home via phone. They sometimes use video calling so that the grandparents can see their grand children and talk to them. When asked about the reasons why they are interested in teaching their children the Arabic language, Manal's mother stated four reasons. First, she told her story that when she was at college taking an Arabic language class and how most of the students in that class were Arab but did not speak Arabic well. She said, "I certainly don't want that to happen to my children, so I decided that they have to learn Arabic when they are young". A second reason was the fact that since they have Arab origin, they will meet a lot of Arabs and she wants them to be able to communicate with people who spoke the same language as theirs. Third, she said that speaking Arabic for her children is vital to keeping family relationships strong and be able to communicate with their family

members in Egypt as well as her family, who speak Spanish. That is why the parents are keeping both languages alive in their children's' lives. The most important reason, however, was to be able to read the *Qur'an* and understand it well.

Manal knows the alphabet in Arabic, Spanish and English. She tries to sound out words in the three languages but is still developing that skill. Her mother confirmed that she learned the Arabic alphabet through different applications that she has on her smartphone and on her mother's computer. She learnt the English alphabet at school and the Spanish alphabet from her mother. Manal speaks an Egyptian Arabic dialect. Her mother said that most of the cartoons she watches are in the Egyptian Arabic dialect and that must have been the primary source of her Arabic language development at approximately "80 percent in addition to conversations with her father, brother and friends at 20 percent".

Manal's mother stated that Manal watches cartoons and videos in Arabic "almost all the time". She reposted that the children are not allowed to watch a lot of TV but when they do, about one hour a day, it is in Arabic. She watches Arabic channels or Arabic cartoons that they purchase online. Manal's parents consider the Arabic language to be most important for their children. Manal's mother stated that they enrolled Manal in the Al-Noor School because it is a small school where their children will receive focused instruction. Another reason for enrolling the children in this school was to protect them from identity crises as a result of belonging to two cultural groups.

Manal's family recognizes the importance of having the children be literate in multiple languages. They also recognize that Arabic is the most demanding and beneficial language for their children. That is why they are keeping the language alive in their children's life through contact with Arab families, watching cartoons and television primarily in Arabic, enrolling them

in the Al-Noor school and providing afterschool tutoring in Arabic, to Ahmed only at the current time.

Manal doesn't seem to be interested in formal learning settings generally, according to her mother. She has the strong personality of a leader who doesn't want to listen to instructions. At home, her brother Ahmed consistently corrects her Arabic, especially when she uses feminine to address masculine and singular to address plural, or visa versa. Although she does not take that very kindly, Manal's mother observed, "she avoids saying it or at least corrects herself."

### **5.3.2 Manal at School**

At the time of this study, it was Manal's first year in the pre-kindergarten class. Manal is shy and quiet. The first weeks at school were hard for her because it was the first time she is away from her mother. Manal understood very little English when she came to school. I was surprised to hear her speak in clear Egyptian Arabic dialect. The assistant teacher, Str. Elena also told me that she spoke fluent Spanish. She used to speak Arabic to those whom she knew they could speak Arabic because they are friends but would not talk to others whom she did not know. Over the course of two weeks, Manal's English has improved a lot. She was able to communicate with other children who did not speak Arabic and befriended some of them. Although she had issues going to the bathroom without her mother, her academic performance improved a lot. Her teachers were very happy with her progress in school. She is an independent child who likes to complete worksheets and activities on the computer on her own.

When they get in pairs during center-time (as mentioned in section 4.3.3 Daily Routine), Manal has shown an ability to get along all the children in the class. After 6 months, she knew all of them well. She would use Arabic with all her classmates and used English well enough to communicate with the others who did not speak Arabic (only one child in the class). She

cooperates and plays with everyone, and at times, like all children do, she would say to some of them that she likes to play with another child.

Manal prefers to speak in Arabic with her classmates. She uses English to speak with her teachers and one child in the class. She sometimes uses Arabic in the middle of a conversation that she started in English, trying to convey a message but doesn't know the right word in English. For example, she always says *bita'ti*, using the Egyptian dialect, when she wants to say 'mine' in English. Also, she uses the word *busi* in the middle of a conversation that started in English when she wants to say 'look'.

During review time, which takes place when the child is the leader of the day, Manal demonstrates great progress in her language development, saying the numbers and colors in the three languages, English, Arabic and Spanish. According to Str. Jane, Manal can count from 1–20 in English, Arabic and Spanish. She can name colors in Arabic, English and Spanish. In addition, he can read and write the letters of the English and Arabic alphabets.

Like Ali, Manal is progressing very well in the general academics and the Arabic and Islamic Studies. Str. Susi is proud of her performance and believes that she is a smart child. Her issue at the beginning of the year was with Manal not listening to directions and not following rules. I was asked to speak to her in Arabic several times at the beginning because Str. Susi thought she doesn't understand English. However, after eight months of being at school, Manal is more out spoken and behaves well in the class.

The Arabic teacher, Str. Jane, is also amazed by her ability to speak Arabic very well, memorize the *Qur'an* and learn quickly that she moved her from level one (beginner) to level two (intermediate). She always thought that her parents must spend a lot of time with her teaching her Arabic language and educating her on letter, numbers and colors. Str. Jane once told

me, “she is a smart child and is able to learn languages easily.”

Manal likes to use the computer in the classroom. Whether it was ABCmouse.com or Starfall.com that the children are using to practice, she was able to find her way through and enjoys coloring, playing games and listening to books read aloud. When I asked her about what she likes to do on the computer, she said, “I like to read books.. But I don’t want to only read books.. I want to draw and play games.” On another occasion, I asked her if she likes to color on the computer, she said, “I like paper more. I can keep it with me and show to my mom.” I took the chance then to tell her that when she clicks on YES after coloring on ABCmouse.com. She is actually saving a copy of the page she colored. She then said, “Wow, so I can show these to my mom, she will like them because they are colored nicely.”

## **5.4 Lama**

### **5.4.1 Lama’s Family**

Lama’s parents have moved to the United States at different times. Lama’s father moved to El Paso in 1988 after he spent about six months in Ohio. Her mother moved to the United States in 2002 from Jordan, when she got married to Lama’s father. Lama’s father has a BA in business and her mother is a senior-year BA student in nursing (see Table 5.2). Lama’s father doesn’t have a stable job. He is currently a taxi driver but on the search for another job.

Lama and her sisters (see Table 5.1 for more details) were born in the United States. They live in a small duplex house that has a small backyard. They have Western style furniture: sofas, chairs and coffee tables in the living room, dining table in the kitchen. There are three bedrooms in their house. Lama and her sisters share one room where they all sleep on separate beds. One of the bedrooms is a playroom where they keep their toys and a desktop computer. This room is also used as a sitting room for men when families visit. Lama’s family has a television in the

sitting room that is connected to *Netflix* and local TV channels. Lama and her sisters watch TV for approximately one hour a day. That usually takes place while their mother prepares dinner. Each one of the girls has a kindle tablet that they use mainly to play games. However, Dana has an application that helps her memorize the *Qur'an*. Lama's mother reported that Lama usually ask to have applications similar to the ones her sisters have on their tablets. Lama's mother told me that there are no Arabic applications on their daughters' tablets because she couldn't find any on the android store. She would love to download some and is going to check again if there are any available.

Lama and her sisters use the desktop computer in the playroom to complete school projects, and listen to children's Arabic songs through *Toyor Al-Janah*, to Skype with family at home country and to send pictures through emails. Each one of the girls has a tablet (kindle) that they mostly use to play games. Lama has many educational games on her tablet that have helped her in learning the English Alphabet and counting. Her mother wishes there are more applications that provide educational play time for the children.

On the walls, Lama's parents have many artifacts that represent their heritage and religion. There is a map of Palestine and its flag. There is a picture of the holy mosque, *Al-Qudus* and a number of chain beads that Muslim people call *Misbahah* and use for praise of God, *Allah*, and supplication. There are many drawings and arts on Lama and her sisters' bedroom most of them made by Lama at school. Most of the drawings have writings or Lama's name in the English language, which lead Lama's mother to conclude that they "do not make crafts in the Arabic class."

When asked about language development, Lama's mother reported that she considers Lama to be literate in both Arabic and English. Lama learned to speak Arabic by listening to the

language spoken by her sisters and parents, whose primary language is Arabic. She learned to speak English by hearing the language spoken by her older sisters, over the cartoons on TV and friends. Lama's mother stated that their older children speak Arabic with them and they speak English with each other.

Lama's mother stated that Lama can write and read the English alphabet, read the Arabic alphabet, and can count numbers 1–20 in English and counts numbers 1–10 in Arabic. Most of this learning started at home with her sisters and some educational cartoons on TV, in addition to spending time with friends.

Lama's parents consider both Arabic and English languages to be equally important for their children. As immigrants in the United States, they want their children to be proficient in English because "their future, whether in the United States or outside will be better if they know English well," Lama's mother stated. In addition, Lama's parents consider Arabic to be important because it is the language of the *Qur'an*, and speaking and understanding it will help them understand their religion better. Besides, they want their children to be able to speak Arabic with their family in Jordan in order to maintain their familial ties. Besides, being able to speak and interact with people in Arabic is important because "it allows them to understand their culture better and be able to discuss it with people around them," Lama's mother added.

At the time of the study, Lama was in her first year at Al-Noor school. Her sister Dana attended the Al-Noor school for two years in the pre-kindergarten stage, and Zahra attended Al-Noor school for three years, two years in the pre-kindergarten stage and one year in kindergarten. Lama's parents have the intention to enroll Lama in the school again next year. When asked about the reason why they enrolled Lama and her sisters in Al-Noor, Lama's mother indicated that they want their daughters to learn as much as possible about Islam at this young age because

“whatever they learn at this age will remain with them for life, and the school can do that better than parents.”

Lama listens to stories digitally reads through her tablet in the English language. When I asked her about her preference for digital or print books she said, “the computer, and my tablet. I don’t know how to read so it’s easy to listen to the story and see the pictures on the tablet.” Like Ali, Lama likes digital stories because they are interactive and available anytime she wants them. However, she likes to listen to stories in English because she doesn’t have Arabic stories on her tablet. Lama’s mother however indicated the Lama prefers print books to digital ones. She said that Lama “is ready to spend hours looking through books but get bored of the stories on her tablet because they are the same stories every time.” When asked if Lama would rather listen to the stories on the tablet if she had the option to see new stories everyday, Lama’s mother said, “I think she would like them on the tablet better, after all she can listen to them whenever she wants and not wait for me to have time to read to her.”

When asked about why she reads more stories in English than Arabic, Lama said,

I don’t have any stories in Arabic. I would like to listen to them or have my mom read them.. But I’m not sure if I will understand them. Maybe I will because I understand the ones sister Jane show us in school.. I actually like them.. Its fun when we watch the stories at school, sister Jane sometimes translates them into English too.

Lama tries to sound-out words in English. She has an application on her tablet that allows her to touch the letter and it will say the sound of that letter. Lama’s mother believes that this application along with other phonics applications have helped Lama learn how to sound out



letters and eventually words.

Lama's parents spend time with Lama and her sisters everyday after school. They talk about their day at school, watch family friendly programs in English or just sit at chat. During the weekend, the girls go to swimming classes on Saturday and go for a walk in the park or to the mall on Sundays. They talk about Jordan and Palestine and how both of them are their countries because they are originally from Palestine but their parents had to migrate to Jordan because of the war. Lama's mother emphasizes the fact that they are from Palestine and want the girls to understand that they belong there.

#### **5.4.2 Lama at School**

At the time of the study, it was Lama's first year in the pre-kindergarten class. Lama is a very quiet and calm child. She likes to sit in a particular spot on the carpet, a square that is purple, because that is her favorite color. Lama likes to go to school and feels sad when she doesn't because, "I miss my friends," she once told me. Her teachers are very happy with her progress in school and feel that she is an outstanding child.

Lama enjoys doing activities and playing with all her classmates, although she has a best friend in the class. She manages to calm tensions down if they ever arise by just saying, "I'm not a baby," and then she completes what she was doing. She speaks English with all the children and her teachers, even if they speak Arabic to her. She tries to speak in Arabic during the Arabic class when the teacher asks her to do so. However, she starts with few words in Arabic and then she switches back to English. I once asked her to tell me the equivalent of the word 'dress' in Arabic. She did not think a lot and immediately responded with *fustan*. Then she said, "but it is easy to say dress, everyone knows it." Like she acts at home, Lama prefers to use English because, "it is easy to say what I want, everyone know English."

Lama's teachers are proud of her literacy development at school. Although it is Lama's first time to go to formal schooling, she has shown a great progress in all three languages. Lama can count from 1–20 in English and Arabic, and 1–10 in Spanish. She can name the colors in Arabic, English and Spanish and is able to read and write the letter of both the English and Arabic alphabets. In addition, Lama tries to sound out words when she works on the computer. She races with the read aloud function on starfall.com in order to say the word before. She tries to read words that have three letters and have been successful in doing that.

Str. Susi considers Lama to be one of the most progressing students in the class among the three-year-olds children. She has shown “incredible progress in all aspects, academic, behavior and socialization,” Str. Susi commented. Lama is a smart child and is a quick learner. All her classmates love her and sometimes argue about who is going to sit next to her. When she first came to school she did not know the alphabets, she would say them but she did not know how they looked like, so she did not know which letter is which. Yet, after eight months of being in school, Lama is able to read, write and give examples of words that start with all of the letters. Str. Susi stated that, “I know Lama likes to use the computers a lot and enjoys both starfall.com and ABCmouse.com, and that is clear in her outstanding performance.” The Arabic teacher, Str. Jane, is also very happy about Lama's progress in school. She commented that Lama is “a terrific child, she is just amazing being super quiet and smart, that's the type of children I like.” Lama was also among the children who memorize the *Qur'an* quickly, and along with Manal and Ali, she has been promoted to level two (intermediate) although she is still three years old at the beginning of the study.

Lama likes to use digital devices. Although the only ones available in school are a desktop and some small laptops, Lama prefers to use the desktop computer because, “the screen

is big, and it works well,” she replied to a question about why she likes the desktop better. Lama likes coloring and does it very neatly on paper. When using ABCmouse.com and Starfall.com, I noticed that Lama spends more time with coloring pages and puzzles. She would repeat them a number of time in one sitting. She said that she likes coloring on the computer more than on paper because “it looks neat.. And is faster too.”

## **5.5 Jehan**

### **5.5.1 Jehan’s Family**

Jehan’s parents are from Libya. They immigrated to the United States in 2011. Jehan’s parents came to El Paso in order to pursue higher education degrees. Her father is doing a PhD in geology and her mother is taking Intensive language courses in order to pursue a Masters degree in mechanical engineering (see Table 5.2 for more details). Jehan’s mother indicated that life is economically better in Libya than in the United States. As an academic in Libya, Jehan’s mother asserts that her husband makes good income that affords them better living circumstances.

Jehan is the oldest child. She has one brother Ismail (see Table 5.1 for more details). Jehan was born in Libya and her brother was born in the United States. Jehan’s family lives in a two-bedroom apartment. They have Western style furniture: sofas, chairs and coffee tables in the living room, dining table in the kitchen. Jehan and her brother share one bedroom where they sleep on separate beds. There is a desktop computer and a TV in their bedroom. Jehan’s family does not have many visitors as the Libyan families in El Paso gather in the community Center every weekend. However, when they have male and female visitors, the children’s room is used as a sitting room for men. The TV in the children’s bedroom is connected to an Arabic satellite and a cable. Jehan watches TV for about one hour a day. Her favorite cartoon is Sponge Bob,

which she watches in Arabic and English. Jehan's mother has a smartphone that Jehan and her brother use sometimes. However, there are no Arabic applications on it because Jehan's mother thought that there are no application in Arabic that provide phonic or literacy practice.

The desktop computer in the Jehan's room is used to watch cartoons in both Arabic and English when there are no cartoons on the TV. The computer is usually used to keep Jehan and her brother busy when Jehan's mother has visitors or is studying. The children also watch and listen to children's Arabic songs through *Toyor Al-Janah* and Skyping with family at home country and sending pictures through emails. There are no artifacts on the walls in Jehan's house. Most of the arts and crafts that Jehan makes at school are stored in a box in Jehan's bedroom. Jehan's mother intends to scan those artifacts in order to keep a soft copy that is easy to carry when they travel back to Libya.

When asked about language development, Jehan's mother reported that she considers Jehan to be an emergent biliterate child in both Arabic and English. Jehan doesn't speak a lot of Arabic. She does understand the local Libyan dialect that her mother speaks and what ever she might utter in Arabic is what she learned by listening to the language spoken by her parents, whose primary language is Arabic. Jehan learned to speak English by attending daycare since she was 1 years old. However, her mother indicated that watching the TV had a huge role in helping her acquire English because, "she used to go to daycare for four hours a day and then watches TV for about four to five hours a day." Jehan's mother noticed that Jehan would "repeat words that she sees on the cartoons and point to objects that sees on TV and name them." Jehan's mother stated that she speaks Arabic with Jehan at an 80% of the time while her father speak English with her at about 80% of the time. That is because Jehan did not speak until she was two and a half years and her pediatrician told the parents that it is a result of hearing two languages.

As a result, Jehan speaks English with her parents and brother all the time.

Jehan's mother stated that Jehan can say the English alphabet, says the Arabic Alphabet at a lower accuracy, and can count numbers 1–10 in English and Arabic. Most of this learning took place at school. Jehan's mother believes that digital technologies played a huge role in developing Jehan's literacy. She reported that Jehan likes to listen and watch the songs that she watches at school.

Jehan's parents spend free time with their children talking to them about their family in Libya and chatting with the family twice or three times a week. They go to the community center where they meet with other Arab families and where the children can socialize and play with others. They also take the kids to the mall or the playground because they want them to socialize children from other ethnicities who also speak English.

Jehan's parents consider both Arabic and English languages to be equally important for their children. However, because they are temporarily living in the United States, they want Jehan to be literate in English because Jehan “will have the opportunity to be literate in Arabic when we go back to Libya.” Her mother also added “there aren't good bilingual schools in Libya so whatever they can learn in English while we are in the United States will be of benefit to them.” In addition, Jehan's parents consider Arabic to be important because it is the language of the *Qur'an* and they want them to maintain it so that “they can read the *Qur'an* when they are ready to.” Jehan's mother also added “I realize that Arabic is more complex and is harder to learn, so I want my children to learn it at a young age in order to be literate when they grow up and not face difficulties reading and writing in it.” In addition, Jehan's mother wants her children to be able to speak with their family in Libya because she believes that “maintains family ties.” She feels sad that Jehan doesn't speak Arabic very well, she stated:

I feel embarrassed when I talk to my mother and Jehan starts to speak in English. My mother doesn't understand what she says and I then go and try to translate when she is saying. Sometimes it's okay with our family they like it when they speak English but after a while they feel frustrated because they do not understand what she is saying.

When asked about the reasons why they enrolled her in Al-Noor school, they Jehan's mother listed many reasons. The school was in close proximity to where they live, was cheaper than going to daycare and is a full time school. However, Jehan mother said "most importantly, I want her to be in a safe environment, where she get the chance to hear the *Qur'an* recitations and memorize with children of her age."

Although Jehan's mother recognizes the importance of being literate in Arabic, they think that she has time to gain that literacy when she goes back to Libya, at the age of 6 when she will be in first grade. However, they also see Arabic as a complex language that a child should acquire at a young age. Yet, the importance that is given to English as a world language and its high status in the Arab world makes transnational immigrants more appreciative to English. Jehan's mother stated, "My daughter will not have an opportunity to acquire English in Libya, as there are no private bilingual schools there. And you know. English is needed these days to get higher education and a good job in the Arab world."

### **5.5.2 Jehan at School**

Jehan was three years old at the time this study began; so it was her first year in the pre-kindergarten class. Jehan is a calm child, but disobedient at times. She likes to tell stories from home all the time. However, she generally follows instructions and classroom rules. Like all the

other children, Jehan likes school and feels happy in the morning when she is going there. She says she likes to “play with friends. And run in the playground.” Her teachers don’t see that she is progressing in school as like other children but are not worried about that because “she has got another year in pre-kindergarten,” Str. Susi stated.

Also like all the other children, Jehan cooperates with her classmates and plays with everyone. She doesn’t have preference to play with particular children although she sometimes gets along with troublemakers. For example, if any of the children decides to run around the classroom, she would be the first one to join. However, she immediately responds to the teacher’s or the assistant teacher’s request to sit-down. Jehan uses English to speak with all the other children and the teachers. Like Magid, she doesn’t respond to anyone speaking in Arabic, neither children nor adults. However, she understands and follows the Arabic teacher’s instructions when said in the Libyan dialect.

Jehan has shown language development in both languages. However, she left school for almost a month when she accompanied her family to a visit to Libya. After her return, Jehan has forgotten a lot of what she had learned including English and Arabic alphabets, sight words, and class rules. Before that, what it is was Jehan’s turn to be the leader of the day, she was able to recognize the letters that they had learned with Str. Susi, she was able to count from 1–10 in English and Arabic. However, she was having a hard time with the letters of the Arabic alphabets, naming colors in Arabic, English and Spanish, and numbers in Spanish. The Arabic teacher, Str. Jane, is disappointed because she believes the reason for Jehan’s fall back in Arabic, before and after her visit to Libya, was the fact that her parents do not speak Arabic with her at home.

Jehan likes the computer time at school. She enjoys coloring, and spends a lot of time on

it. She likes to play games and solve simple puzzles, but she is not patient when listening to stories. Her favorite activity on ABCmouse.com is listening to songs. Whenever I try to speak to Jehan or ask her questions, she starts to tell a story about her family such as “daddy bring me a new toy,” and “I saw Sponge Bob cartoon at home.”

## **5.6 Summary of Participants’ Profiles**

In this chapter, I presented the profiles of the five focal participating children who are central to this study and their families. The case-by-case analysis of each child’s family aimed to allow the reader to be able to form a deeper understanding of each case study family. I described each family’s migration history, educational background, physical home environment, conditions of access to digital technologies, and the parents’ perception of their children biliteracy. I also described the children’s experiences at school and developed their teachers’ views about their biliteracy development and interest in digital technologies.

Although there are many similarities among the children and their families, there are differences too. All the families are Muslims coming from Arab countries. All the fathers are college educated or hold higher qualifications, and their mothers are college educated, except for one participant’s mother, Magid, whose mother dropped out of school. All the families owned digital devices, some which were accessible by the children and others that are not. All the children use digital technologies at home during their leisure time.

There are also some differences between the participants. Magid and Jehan’s families are transnational immigrants while Ali, Manal and Lama’s families are immigrants. The transnational immigrant families identified themselves as Arab while the immigrant families identified themselves as Arab Americans. The families came from different Arab countries and had different immigration histories. These difference presented important implications on the



families' perceptions of the importance of biliteracy and language development.

In addition, none of the parents, mothers and fathers, were simultaneous bilinguals. With the exception of Manal's mother who started to learn English at age six, all the parents' English language learning experiences occurred when they were teenagers at school, while enrolled in public schools in their countries of origin. They all immigrated to the United States when they were adults for the purpose of getting a college education, e.g. Lama's father, to receive a graduate degree, e.g. Ali, Magid, Jehan and Manal's fathers, or to accompany their spouses.

The families' profiles and descriptions of their literate lives, at home and at school, will shape their biliteracy development in Arabic and English. In addition, their profiles will support the understanding of their engagement in digital biliteracy practices as being socially constructed and practiced. Moreover, the families' immigration histories and conditions of access to digital technologies will assist in explaining their emphasis on literacy in one language over the other. The children's digital practices and the factors that contribute to the children's digital biliteracy development, such as availability of digital devices and technologies at home, children's access to these digital devices and technologies, and the frequency of their use of the different digital technology devices, may provide implications for using digital technologies for the purpose of emergent biliteracy development.

## **Chapter Six: Digital Biliteracy at Home And School: How Digital Technologies Shape Children's Biliteracy Development**

### **6.0 Introduction**

In this chapter, I describe the experiences of the five focal participants at school and home and depict their use of digital technologies to develop biliteracy in English and Arabic. In order to understand the instructional practices that support emergent biliteracy development, I explore the schooling process that facilitated digital biliteracy at school. I explain the pre-kindergarten teachers' views and practices in using digital technologies to provide an interactive practice that is religiously and culturally responsive. In order to examine the development of digital biliteracy outside the school, I discuss the factors that motivate parents to emphasize literacy development in one language over the other. To accomplish that, I focus on the reasons that inspired parents to send their children to the Islamic school, their roles in supporting the digital biliteracy experiences of their children, and the parents' perspectives on digital biliteracy.

In order to understand the everyday practices that support biliteracy development, I explore the means that facilitated biliteracy development, including digital and print means. In addition, I describe other factors that might have contributed to the children's digital biliteracy development such as available digital technologies at home, children's access to these digital technologies, and the frequency of their use of the different digital technology devices. The research questions guiding the analysis of activities and events in this classroom are the following: in what ways do pre-kindergarten teachers in a bilingual school in Southwest Texas use digital technologies and describe the role of technology and its impact on Arab immigrant and transnational immigrant children's biliteracy development? and what is the role of

family/home outside of school learning in the process of digital biliteracy development?

## **6.1 Digital Biliteracy in the Bilingual Classrooms: Teacher's Views and Practices**

In this section, I examine the ways pre-kindergarten teachers at the school portray their use of digital technologies to promote biliteracy development. I explore the teachers' use of digital technologies to provide instructional methods and materials that are religiously responsive. I also describe the teachers' views on the interactive nature of digital technologies and the children's inclination towards learning through interacting with digital technologies. In addition, I discuss the teachers' uses of digital instructional materials to address classroom cultural and gender differences that the teachers believe are a result of cultural variances between the students. Finally, I describe the teachers' views of the functions of print and digital materials in the biliteracy development of the children. I conclude with a summary of the teachers' uses and description of the role of digital technologies in digital biliteracy development.

### **6.1.1 Digital Technologies Assist with Teaching Religiously Responsive Materials**

Teachers described their use of digital technologies to serve multiple purposes that ultimately contribute to the children's language instruction and biliteracy development. One of the teachers' uses of digital technologies is to prepare for class. Instruction in the pre-kindergarten class follows an established curriculum. Starfall Education Corporation provides the curriculum that is used for the general academics class. This curriculum aims to provide a comprehensive program that integrates math, science, health, creative arts, social studies, physical movement, early literacy, and social-emotional development. Similarly, Excellent Education Company and My Fun World Corporation in Kuwait designed the curriculum that Str. Jane uses for teaching Arabic and Islamic Studies to the pre-kindergarten children. The Arabic

and Islamic studies curriculum is not accompanied by digital supplementary material. Yet, both teachers, Str. Susi and Str. Jane, prefer to supplement this curriculum with more interactive practices that emphasize religion and enhance the core curriculum.

Str. Susi shows a lot of enthusiasm about using digital technologies in the form of the *magic wall*, displaying the projector on the wall, because she believes that “technology is a great asset to biliteracy development, especially in the context of this school, where most of what is taught usually reinforces Islamic beliefs.” Str. Susi tries to use digital technologies to locate materials that reflect the Islamic beliefs and ones that address the curriculum objectives in enhancing the children’s biliteracy development. Although Str. Susi teaches the core curriculum to the pre-kindergarten children in the English language, she tries to integrate digital literacy in her instruction to emphasize the academic areas, religious education and Arabic language acquisition. One of the strategies she follows is the reinforcement of numbers, colors and letters in Arabic side by side with the numbers, colors and letters in English and numbers and colors in Spanish. This practice takes place every morning by the child leader of the day, saying and pointing to the numbers, colors and letters in the three languages. Str. Susi adds, “I like to integrate the three languages in my classroom and technology has been a great help for me to do that ... I mean I do not speak Arabic or Spanish, and so looking up videos and materials that support the acquisition of these languages is great.” Although Str. Susi isn’t expected to reinforce biliteracy development in her classroom, she finds joy in doing that; she states, “I love the fact the I can search and find videos, songs and cartoons that are religiously appropriate for the nature of this school.”

On the other hand, Str. Jane is expected to reinforce Arabic literacy and Islamic education. She also likes to supplement the Arabic and Islamic Studies curriculum that she uses

with digital materials. She uses many YouTube videos and songs to reinforce her instruction. In particular, she uses video recordings on YouTube to assist the children in memorizing the *Qur'an*. Str. Jane believes that “listening to the *Qur'an* on YouTube helped them (the children) remember it better. They are very attentive when they hear the children's voices reciting after the *Shaikh* (religious leader). I cannot provide that, it is hard to imitate children's voices.” The digital technology in this case provided the teacher with a way to present religious practice for the children that she observed is more fruitful for the purpose of instruction. While she can read the *Qur'an* verse she is teaching, it appears that the children are more attentive when they hear it recited by other children.

### **6.1.2 Interactive Practice**

In addition to being helpful in providing educational materials that the curriculum doesn't otherwise provide, digital technologies appear to be useful in providing interactive practice for the pre-kindergarten children. Str. Susi describes interactive practice as “hands-on exercises where they see letters and hear words, songs and music. The children find that amusing and more relevant to what they like to engage in considering their age.” Str. Susi and Str. Jane find digital technologies to be particularly attractive to the children because, unlike printed books and materials and traditional teacher-centered teaching methods, the children can interact with the characters, watch images, hear sounds and have some hands-on practice such as tracing letters on the screen. The impact of placing these digital technologies in the children's hands to manipulate provides them with an autonomous learning experience to explore, discover and promote higher order thinking, and creativity (Ringstaff & Kelley, 2002). The teachers believe that having interactive practice help the children acquire language better and support their biliteracy development.

Str. Susi uses a variety of educational materials to support her instruction. Besides the video materials, songs and educational episodes that she display during *magic wall* time, she also uses educational websites that provide a variety of practice for the children in order to stimulate their interests in learning and enhance language development. Str. Susi elaborates on the advantages that interactive practice provides by saying, “when they use the educational websites ... you know ... ABCmouse.com and Starfall.com, they learn faster and remember what they are practicing better.” The interactive practice that is offered by digital technologies seems to enhance the children’s learning and provide instruction that in addition to being involving and interesting, it is what young children usually engage in and enjoy.

Similarly, Str. Jane believes that digital technologies provide interactive practice that supports the children’s Arabic language development. Although Str. Jane doesn’t have time in her Arabic and Islamic Studies class to provide daily hands-on practice, nor there are educational websites that serve this purpose, she makes use of *YouTube* materials that provide practice on the Arabic letters, numbers, and colors, and practice and recitations of the *Qur’an* in order to enhance the children’s learning. She considers the *YouTube* materials to be interactive because the children “sing with the characters, dance like them, repeat letters, recite the *Qur’an* and see pictures moving and glowing.” These types of materials involve the children and provide them with the opportunity to be active learners who are participating in their own learning. She adds, “when I use digital technologies, like the computer and the projector to display *YouTube* materials, to show the children some *Nasheeds* (Islamic songs) and educational cartoons, they are more attentive. They indulge in watching and later when I ask or review they seem to have learned better.”

### **6.1.3 Cultural and Gender Differences**

Considering the different backgrounds of the children and the circumstances that brought them to live in the United States, permanently or temporarily, their interests, experiences and cultures vary and have implications for their literacy development. Research has shown that “knowing two languages is inextricably linked to knowing two cultures” (Hornberger & Skilton-Sylvester, 2003, p 50). The teachers in this study have found that using Digital Technologies afford them a variety of materials that help address the children’s curiosities and encourage their interests in developing two languages. They used digital technologies to provide the children with materials to attempt to “satisfy their curiosity and reflect and acknowledge their background information” (in the words of Str. Jane). Cultural and gender differences appeared to be the two most recurrent aspects that the teachers tried to include in their instruction through the use of digital technologies.

#### **6.1.3.1 Cultural Differences**

Culture gives people the sense of order they have to their everyday social lives (Hill, Loch, Straub and El-Sheshai, 1998). It is a shared set of traditions, belief systems, and behaviors that is shaped by history, religion, ethnic identity, language, and nationality, among other factors (Samovar, Porter & McDaniel, 2009). Tyler (1871) defines culture as consisting of patterns of behavior as well as patterns of thought, it is “that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society,” (p. 1). The Arab world consists of different religions and a variety of ethnic and linguistic groups. Given this diversity, there are different cultures coexisting in the region. While cultures can be similar on the macro level, there are differences between persons of the same race coming from different countries and even among people from the same country and

sometimes even the same town at the micro level. Cultural differences among Arabs include talking in the presence of older people; dealing with other children, turn taking, etc. For example, children in Libya are expected to not talk in the presence of older people unless asked to while they have the freedom to talk and sometimes interrupt older people in Egypt.

Although the teachers did not explicitly point this out, they alluded to the existence of cultural differences among the children. Str. Susi stated:

you see they are coming from different cultures and background,  
they are raised quite differently and have different interests.

Sometimes when we talk about a topic, like helping others or being  
kind, they show differences when they give their own stories.

However, when I show them a video or a song on the same topic, it  
catches everyone's attention, and sometimes settles disagreements.

I have observed an instance of differences and confusions during my participant observation in the classroom. This happened on a Monday morning when Str. Susi usually gives a chance for everyone to talk about what they did in the weekend. As Manal was telling everyone about the things she did the previous day, she went on and on for a couple of minutes when Ali raised his hand. The teacher asked Ali to wait. After almost a minute of waiting, Ali said, “you need to take turns! My mom said we should talk a little and give others a chance to talk”. So Manal stopped for a second and replied, “it is still my turn.” At this occasion the teacher took the chance to remind everyone of the classroom rules and told them, “one of the rules in the classroom is to take turns. We should listen to our friends and not interrupt them when they are talking.”



In a conversation with Ali during lunch he told me that he feels sad because his turn took so long to take place. He added, “ I wanted to tell about what I did with my sisters we went to the park but she [Manal] was taking too long. I felt like I do not want to tell my story anymore.” Str. Susi heard the conversation and wanted to clarify what turn taking means. So she looked up a story on YouTube during naptime and showed it to the children after the Arabic class. In her choice for what to show, Str. Susi specifically chose a video that had kids in it and one that was teaching with a song. The video clip was about a group of bunnies that are friends and were chatting in the park. The bunnies were so excited that they unintentionally left one of them out by not giving her a turn and not listening to the story she wanted to say, so she got sad and sat by herself. The other bunnies noticed she wasn’t playing with them and went back to her to ask and apologize for what happened. After she showed the children the video, she asked the children questions like what happened to the bunny? Why was he sad? What should we do to make our friends happy?

In a conversation after the class, Str. Susi told me that she thought that a video would help clarify the rule that the children were expected to follow. She said,

I know they sometimes misunderstand what their parents tell them at home. Like Ali wasn’t patient enough to listen and he just wanted to get his turn. But you know what I believe; pre-k is the time when they should learn to take turns and be patient. You see those people who do not stand in-line at grocery stores; they did not learn to do so at pre-k. And that video just did it, it is coming from kids like them and that reinforces what I tell them.

In Str. Susi's point of view, this disagreement was the product of the children being from different national cultures and being raised differently by their parents. Her use of the video exemplifies her belief that digital materials are easier for the children to understand because they seemed to enjoy them. In addition, using the video would deliver the message she intends to give to the children in a more salient and approaching manner that "removes the adult power and imposed opinion." Another incident that she had to deal with at school is standing for oneself when Magid decided to take his pencil back from Adel and hit him. Str. Susi got upset and asked Magid, "Why did you hit your friend?" Magid responded, "My dad told me to hit back if someone hits me." Str. Susi talked to Magid's parents about what happened and understood that that is what they do in their country in order to teach boys to stand for themselves. Str. Susi said,

I understand there is some type of culture in this, but this cultural difference doesn't work here in the United States. I had to explain that it is against the rules of the schools and that a child should report to the teacher in case of misunderstanding.

In addition to using digital materials to clarify misunderstandings of school practices that result from cultural differences, the teachers also use digital technologies to relate to the children's backgrounds and funds of knowledge. Str. Jane repeatedly shows the children videos, songs and short cartoon episodes on YouTube that display the children's countries of origin. She takes advantage of the letter being taught to talk about one of the children's country, display the flag and present the national anthem. For example, when teaching the letter 'م' that is sounds as /m/ and with which the Arabic version of 'Egypt' starts with (مصر/Misr), Str. Jane took the chance to display the country's flag and had the children listen to the national anthem. In addition, when she was teaching the letter 'أ' which sounds as /a/, she gave an example of

famous architecture in Egypt ‘the pyramids’ (إهرامات/Ihramat), and when teaching the letter ‘ق’, which sounds like /k/ she gave the example of Jerusalem (قدس/Quds). On each occasion, Str. Jane shows pictures of these places on the screen and invites the children to talk about them and give more examples of their own. Str. Jane explained her method as “a way to include everyone in learning, especially that I’m teaching them Arabic and I feel it is good to connect the language with the culture.” Str. Jane described the reasons behind choosing to teach in this manner as an effort to “provide different practices of the same concept that matches all the students’ interest, so no one is left out.” Her inclusion strategies rely heavily on using students’ cultures and funds of knowledge to strength the children Arabic language literacy development.

Str. Jane’s and Str. Susi’s strategies seem to serve the children’s biliteracy development in an unprecedented way. Their efforts seem to represent the digital biliteracy (section 2.6) that I propose in this study. Both teachers rely on digital technologies to serve the purpose of biliteracy development but each one of the teachers is aiming at the development of a different language while at the same time support the development of the other language. In other words, each of the teachers individually target the language they are focusing on by providing supporting digital materials that strengthen the children’s emerging literacy development in that language. At the same time, each of the teachers use the other language to support the literacy development of the language they are teaching. As a result, the children are developing biliteracy in both languages simultaneously.

### **6.1.3.2 Gender Differences**

While some of the differences that digital technologies have assisted in sorting out were around cultural differences, like all children, the Arab children in the classroom had different preferences related to gender. This discussion of gender focuses on what linguists call

“biological gender.” The children seemed to prefer to see characters, colors, and sounds they associated with being male or female. Both Str. Susi and Str. Jane resorted to digital technologies to address the children’s interests and provide digital materials that were related to their instruction and is appealing to both genders.

At the beginning of the school year, the teachers started to notice that the children were showing preferences in terms of color, character, and sound, “I noticed boys seem to not be interested when the characters I’m showing are feminine and vice-versa,” Str. Jane said. Based on what the teachers said and on my own observations, boys and girls would show signs of boredom or disinterest in what they are viewing, reading or doing if they are addressing the other gender. I frequently observed that when the teacher reads a book, the girls point to characters that are feminine and the boys point to the masculine ones, saying words like, “this is me”, “I like this one” or “that’s mine.” Str. Susi stated: “Sometimes, there would be a child or a couple who look bored or not interested and I understand that is because they might not like the colors, the characters or the rhythm, you know, boys and girls.” The teachers use digital technologies to provide digital materials that interest both genders. Str. Jane commented saying: “digital technology gives me the leeway to provide something to appeal to the interests of both genders.” They found that it is rewarding for children if their interests are given attention and when included into instruction because, “they felt acknowledged, that they are important because they can see and interact with what they like,” Str. Susi declared.

#### **6.1.4 Print vs. Digital Materials**

While research has shown an increased inclusion of digital materials at higher educational institutions (O’Brien & Scharber, 2008; Ribble & Baily, 2007), the major instructional materials that are used at Al Noor School are print based. The teachers in this study,

Str. Susi and Str. Jane, have noticed that their use of digital materials is beneficial in many ways (as discussed in the section 6.1.1, 6.1.2, and 6.1.3). They also noticed that the children show preference and pay more attention when a topic is presented digitally compared to a presentation in print. Although this view seems to be treating print and digital texts as either/or, there is much evidence and theory (Kress & Jewitt, 2003; Gee, 2004) that texts can be multimodal and that learning often seems to take place across modalities instead of within them. This view, however, attests to the fact that the focal teachers are not well versed in the academic view of multimodality and understand an either/or view of print and digital literacies. However, they use multimodal instruction, both digital and print materials, to deliver their instruction.

The children expressed a preference for digital materials in many ways. The teachers have noticed that the children pay more attention when the video they are watching is showing them how to write the letter than when the teachers model it to them. The teachers also believe that the children remembered names of objects that were shown to them on the screen better than ones that they see on paper. In addition, the teachers reported that the children expressed joy and happiness when they interacted with letters, numbers and colors using the educational websites rather than when they were completing a worksheet, or being told about them by the teacher. Str. Jane stated, “the children definitely enjoy videos and songs more than completing an exercise in a book.” Str. Susi thought that the children “after all, they like movements and action, books [print books] are static and do not offer much fun compared to a cartoon that has characters moving, and jumping, colors that are changing and sounds that are appealing.” In addition, movements and colors, the teachers thought that the children enjoy and are attracted by another child’s voice. Str. Susi explained,

It is also that child voice that you find in digital materials rather than the teacher's

voice who reads or talk to them. They are more attracted by kids voices which obviously books do not provide and hard for me to provide too.

Str. Jane noticed the same when reciting the *Qur'an* with the children; “they are more attentive when they hear a child’s voice read to them.” In addition to being attracted to voice, color and movement, Str. Jane thought that there are other advantages to using digital materials,

It calms them down, it is hard to get them to sit down and finish an activity on the book, but they easily sit down to watch an educational cartoon and listen to a song. They also learn the letter, the words and the *Qur'an* better when they listen to it.

The teachers report many benefits of using digital technologies to complement print. These multimodal natures of these instructional strategies enhance instruction and understanding as well as classroom management. The calm and quiet atmosphere that result from the use of digital technologies, when children sit and listen to the voices coming from the screen and watch action, pictures, colors and movement, provides a healthy environment for learning, especially with young children who are always excited and active.

#### **6.1.5 Summary of Teacher’s Use and Views of Digital Technologies**

The pre-kindergarten teachers at Al-Noor school use digital technologies to apprentice the children into culturally relevant instruction and to provide digital materials that meet their interests. Table 6.1 summarizes the teachers’ routine in the use of digital technologies that the teachers reported and the actual uses that I observed in the classroom.

Table 6.1

*Summary of the Teachers' Views and Practices on the Use of Digital Technologies for Biliteracy Development*

<b>Teachers' routine</b>	
<b>Practices reported by the teachers</b>	<ul style="list-style-type: none"> <li>• Provides interactive practice for the kids</li> <li>• Unlike books, the variety offered by digital technology can match child's interest</li> <li>• Culturally sensitive materials can be found</li> <li>• Children enjoy watching the ways they write the letters and listening to songs about the letters, numbers and colors. They are very attentive to a story shown digitally on the <i>magic wall</i> than to a story read by the teacher from a print book.</li> <li>• Children like to listen to other children voices, it attracts their attention.</li> </ul>
<b>Practices performed by the teachers</b>	<ul style="list-style-type: none"> <li>• Use technology in every class to reinforce the concepts being introduced</li> <li>• Children practice using digital technologies twice a week, using Starfall.com, or ABCmouse.com</li> <li>• Obtain digital and print instructional materials to support teaching</li> <li>• The teacher uses starfall.com and ABCmouse.com to practice letters, math, and reading related to what they do in class.</li> <li>• Occasionally, they get to use starfall.com the way they want, and mostly they want to play educational games.</li> </ul>

The teachers realize that the children show preference to and get more benefits from interactive tasks that give them the opportunity to see characters, color and movement. The teachers believe that this approach is more relevant to children's learning and is appropriate for reinforcing the concepts that the children are learning. All these tasks are intended to support the children's biliteracy development in English and Arabic, providing the foundation for a digital biliteracy approach that makes use of digital technologies to insinuate emergent literacy development at a young age. Although it seems that the teachers' practices were not directly

intended to provide digital biliteracy development through digital technologies, that the intention of each one of the teachers was on developing the language they teach (Str. Jane's teaches Arabic and Str. Susi teaches English), they both occasionally used the other language or resorted to use digital technologies to reinforce the other language as well.

## **6.2 Digital Biliteracy Development Outside School**

In the following section, I start with a discussion of the factors that have contributed to digital biliteracy at home such as the available digital devices and applications at home, children's access to these devices and the regularity of their use of these devices. I describe Arab parents' roles in their children's biliteracy development. In particular, I examine the roles of the five mothers who participated in the study and their views on the use of digital technologies to promote biliteracy in Arabic and/or English. I explore their use of digital technologies for religious purposes such as helping their children recite and memorize the *Qur'an*. I describe the decisions they make around the use of digital technologies to enhance children's literacy in both languages. These decisions include decisions to send their children to a bilingual school, how to deal with ideas brought home from school regarding Arabic digital materials such as cartoons, and the children's use of digital technologies at home. I also discuss the parents' perspectives on their children's readiness to become digitally biliterate and their children's interest in using digital technologies to learn languages. In addition, I examine the ways by which the participating Arab children developed literacy in Arabic and English at home. I conclude this section with a discussion of digital and other resources and means that supported the development of the children's biliteracy.



### **6.2.1 Factors Contributing to Digital Biliteracy Development at Home**

There are a number of factors that may contribute to the children's biliteracy development at home. There are many factors that may affect digital biliteracy at home, especially that it is usually controlled by parents. Researchers have indicated that low-income families may have limited access to digital technologies (Mossberger, Tolbert, and Stansbury, 2003) and that can affect their biliteracy development. However, other researchers argued that issues of access and availability are not controlled by socio-economic status but can contribute to literacy development (Bradbrook & Fisher, 2004; Bromley, 2004; Selwyn, 2004; Warschauer, 2003). In this section, I discuss the effects of two factors, access and availability, on the Arab children's biliteracy development at home and how they contribute children's development of biliteracy.

#### **6.2.1.1 Availability of Digital Technologies at Home**

All the case study families reported that they own several digital devices at home, which their children can use for biliteracy development. Table 6.2 summarizes the available digital technologies in each household and the devices that each of the participating children have access to. Magid's mother reported that they have one iPad, a TV and a laptop. Magid watches Arabic and English cartoons on TV; they watch Arabic cartoons on the Arabic Satellite and English cartoon through the local cable. When there are no more cartoons on TV, Magid and his brother ask their mother to put cartoons on the iPad. However, they do not use their father's laptop because he uses it for schoolwork (see Table 6.2). On the contrary, Lama's mother indicated that each of her daughters has her own tablet, in addition to an iPad, a television, a desktop computer and a laptop computer. Lama uses her tablet to play educational games in English, listens to English stories digitally read through her tablet and listen to songs in Arabic

through *Toyor Al-Janah*. She uses the desktop computer to complete school projects, listen to children's Arabic songs through *Toyor Al-Janah*, Skyping with family at home country and send pictures through email (see Table 6.2). The iPad and the laptop computers belong to her parents; Lama and her sisters "do not use the laptop as it has my (mother's) school work."

In Jehan's home, there is a television, Arabic satellite, smart phones, and desktop and laptop computers. Jehan mostly watches cartoons in English on TV and the Arabic satellite and. She sometimes watches cartons on the desktop computer, especially when her mother is busy and there are no cartoons on TV. She also uses her mother's smartphone to play games that she downloaded while they were visiting in Libya. However, Jehan's mother doesn't have any Arabic applications on the smartphone because she wasn't aware there were any educational ones. She also doesn't use the laptop unless her parents are present with her because they use it for schoolwork (see Table 6.2). Likewise, Manal and her brother each have a smartphone (see Table 6.2). There is also a television, Arabic satellite and a laptop computer. Manal's mother reported that Manal is free to use her smartphone whenever she wants. She also uses her mother's laptop in which her mother downloaded Arabic educational games for her. Her mother also stated that Manal and her brother "watch Arabic cartoons and programs in DVD format or on TV during the weekdays and more in the weekends." Similarly, there is a desktop computer, a laptop computer, a DS, a tablet, a camera and an iPod in Ali's home (see Table 6.2). Ali can use the tablet, the iPod and the desktop to watch cartoons in Arabic and in English. Neither his sisters nor him are allowed to use their father's laptop unless their father is present because a lot of his employment work is in it.

Table 6.2

*Available and Accessible Digital Technologies in Relation to Participants' Socio-economic Status*

<b>Child</b>	<b>Available Digital Technologies</b>	<b>Accessible Digital Technologies</b>	<b>Socio-economic status</b>
<b>Magid</b>	iPad, Laptop Computer, TV, Arabic Satellite	iPad, TV, Arabic Satellite	Middle class
<b>Lama</b>	Tablets, iPad, TV, Desktop Computer, Laptop Computer, Smartphone	Tablets, TV, Desktop Computer, Smartphone	Low-income
<b>Jehan</b>	TV, Arabic satellite, Smartphone, Desktop Computer, Laptop Computer	TV, Arabic Satellite, Smartphone, Desktop Computer	Middle class
<b>Manal</b>	TV, Smartphone, Laptop Computer, Arabic Satellite, DVD Player, Camera	TV, Smartphone, Arabic Satellite, DVD Player	Upper class
<b>Ali</b>	Desktop Computer, Laptop Computer, DS, Tablet, Camera and iPod	Desktop Computer, DS, Tablet, Camera and iPod	Middle class

Availability of digital devices at the children's home was an advantage for the their biliteracy development. The children have different options to use even with the restrictions to access to some of the devices. It is interesting though how more options and devices are available to the low-income families compared to the high income ones. For instance, Lama owns a tablet, and has access to TV, desktop computer and her parents' smart phone. On the contrary, Manal owns a smartphone that used to belong to her mother, and have access to TV on

which she watches cartoon through the Arabic satellite or the DVD player (see Table 6.2). Research shows that the expanding use of digital technologies among low-income families reflects the parents' ability to control and check on how their children use technology than their access to it (Richtel, 2012). Moreover, research demonstrated that access to digital technologies is not affected by the socioeconomic status (Livingstone & Helsper, 2007). On the contrary, Livingstone (2003) found that access to digital technologies is more common in household with children.

#### **6.2.1.2 Children's Access to and Use of Digital Technologies at Home**

Priority in using digital devices at the participating families' homes is always given to the children. In houses where the same devices are shared by the children and the parents the children have the privilege to use the devices (see Table 6.2). For example, in Magid's and Jehan's home, Magid and Jehan use the desktop computer, their mothers' phones and the TV more often than their parents because they are used as a way to keep the children busy. In the other homes, where the children each have their own devices, like Manal and Lama, or share devices with their siblings, like Ali, their use of the digital devices is open but limited. The parents have 'parental control' on these devices and set times when technology can be used such as after eating their food, after doing homework or during some of their free time.

Most of the parents reported that their children do not use digital devices very frequently, especially during school days. Magid's mother stated, "They watch TV when they come back from school around four pm until five pm. They also watch Arabic cartoons on the satellite at nine pm." However, Magid's mother also stated, "when there are no cartoons on TV they ask to watch on the iPad." According to Lama's mother, she "uses the kindle about half an hour a day; she doesn't like to play much with it. She has educational games. Teaching phonics and

vocabulary, body parts.” While the mother was stating this, Lama was playing with her smartphone; her mother gave it to her to keep her busy. Similarly, Jehan’s mother stated, “during school days she (Jehan) watches only about one hour of TV but she used to watch a lot of TV before she went to school and in the summer.” During the interview, Jehan’s mother switched the TV on for her to watch cartoons, then switched the desktop computer on for her too watch Arabic cartoons and also offered to give Jehan her smartphone in order to keep her busy. Likewise, Manal’s mother stated that her daughter watches one hour of TV per day and two to three hours during the weekends. She also stated that her children.

Do not use their phones that much. Maybe just in the summer. If they use them now they use them for... I have very few games that I put in my computer for Manal, Ahmed (Manal’s brother) does not use my computer at all. Actually, he doesn’t use his phone anymore. He doesn’t have anything educational on it. I think he lost it somewhere and he hasn’t looked for it so I did not rush to look for it anyways. And Manal has a lot of Arabic games on her phone but she misplaced the charger so I did not look for that either.

Manal’s mother considers the use of digital technologies to be for entertainment only. However, as the interviews unfolded, it appeared that her children do use the computer and the smartphones to learn the alphabets, play educational games and learn the *Qur’an*. On the contrary, Ali’s mother stated that their children use digital technologies more frequently. Ali’s mother confirmed that her children “watch a lot of cartoons and play games but after they do their homework. However, they almost spend three hours in front of the computer everyday.”

### **6.2.2 Literacy in Arabic or English**

One of the values that parents share is the importance of their children's biliteracy in Arabic and English. All participating parents expressed the importance of both languages; for example, Lama's mother stated, "both Arabic and English are important to me." The parents stated different reasons for their emphasis on one language over the other that are unique to each language and that resulted from the family's life circumstances. Arab families' identities as immigrants or transnational immigrants seem to influence their views and practices of English and Arabic. Interestingly, transnational immigrant parents' views about the importance of English and Arabic, and the emphasis they put on one over the other differed from those of immigrant parents. In this section, I describe the three main factors that influenced the Arab parents' choice for the language that they want their children to learn, which are 1) Geographical positioning, 2) their view of the language as a World Language and 3) the benefits of simultaneous biliteracy.

#### **6.2.2.1 Geographical Positioning**

The first factor that influenced Arab parents' choice for the language they wasn't their children to learn was geographical positioning. Transnational immigrant parents who are living temporarily in the United States and who were planning to return to their countries of origin favored English language learning over Arabic. Jehan and Magid's mothers reported that they wanted their children to develop English literacy while in the United States. Jehan's mother stated that her children "have the opportunity to learn English here in the United States and they will definitely acquire Arabic in Libya, that's what everyone speaks there." As transnational immigrant families, they considered English literacy development as more important at this age because their children "will learn Arabic when we go back to Libya," Magid's mother stated, and

they “will start formal school there and Arabic won't be an issue” Jehan’s mother added. Both transnational immigrant families wanted their children to acquire English at this young age, and recognized that when they go back to their country, their children will still be at an age that allows them to develop Arabic literacy easily.

On the contrary, immigrant parents affirmed that their choice for which language is more important for their children to learn is affected by their living status in the United States. Ali’s mother stated, “English is an easy language to learn, especially in the United States. They hear it everywhere and can get it from school. But Arabic is harder, it is more complex and children who do not acquire it at a young age have difficulty with correct pronunciation later.” Ali’s mother confirmed that Arabic is harder to learn because her children are living in the United States and that influences the frequency they can hear it, the amount of material they can access in Arabic and their fluency as a result of these barriers. In the same way, Manal mother asserted that she recognized how important literacy in Arabic is for her children and focused on providing digital materials to help her children develop literacy in Arabic. Manal’s mother believed that “English will come naturally because they are exposed to it in school.” Similarly, Lama’s mother wanted her children to retain the Arabic language and develop literacy in Arabic. Arabic is the language of communication in Lama’s home because her mother believed that “ speaking it home is the best way to keep it alive.”

#### **6.2.2.2 World Language**

The second factor that influenced Arab parents’ choice for the language they wasn’t their children to learn was the status of the language in the world. The status of a language in the world was one of the factors that affected parents’ preference for enforcing and helping their children develop literacy in or language or the other. Magid’s mother indicated that “English is

an important language in the world and people in Libya are not strong in it. It would open better educational and occupational opportunities for the children.” Although Jehan’s mother had previously stated that she would like her children to develop literacy in Arabic in the first interview when she said “I want her [Jehan] to learn Arabic but my husband wants her to speak English,” she sided by her husband’s view in the second interview and stated, “English is an important language ... people in Libya wish they can speak it fluently because it is the language that they can speak any where in the world.” Jehan and Magid’s parents recognized English as not just a world language but as the language of the world. They view the English language literacy to be essential for quality life and a principal feature that is increasingly sought for in the Arab world and beyond. Magis’s parents consider literacy in English as a key-qualification to finding a good job and prospering in life. In fact, this seems to be a common view stressed by governments in the Arab world as literacy in English is a prerequisite for admission into most higher education institutions and a quality that puts preference for one job applicant over the other. Although such views are not formally stated, job advertisements mostly make a note of them.

Lama’s mother, who is an immigrant in the United States, described feeling guilty because her children were not reading Arabic; she stated:

I feel bad because my children cannot read Arabic. English is a universal language and will be helpful whether we stay in the United States or go back. Arabic is important too because through it they can understand our religion and be able to communicate with other Arab people and their family members at home.



However, she recognized English as a world language too. Similar to the transnational immigrant parents, Lama's mother viewed English with the lenses that people in Arab countries view it. Nevertheless, she stressed the importance of Arabic as well, relegating its importance to being a language of communication with other Arabic speakers and an important vehicle for understanding religion and re-integrating with extended family members.

### **6.2.2.3 Simultaneous Biliteracy**

The third factor that influenced Arab parents' choice for the language they wasn't their children to learn was their understanding of simultaneous biliteracy. Immigrant parents expressed their desire for their children to develop both English and Arabic simultaneously. Manal and Lama's mothers understood biliteracy as an advantage that "bilingual children are smarter and able to understand two cultures and languages," as Lama's mother stated. Manal's mother explained,

The thing is like in one's brain, if they are not bilingual they will always be stronger in a language. Unless they have both languages in their brain at the same time, like they acquired both at the same time or somehow they managed to be strong in both languages at the same time.

Manal's mother indicated that simultaneous bilingualism is important for the child's biliteracy because "at a young age, children are able to digest two or more languages, unlike adults." To make her point stronger, Manal's mother referred to her situation trying to learn Arabic when she was an adult; she stated:

Let's say, like now, I can think in Spanish and speak in English because they are both there and I was really young when I learned

them.. So... if I'm now learning Arabic, I can understand so much of it.. When people speak in Arabic I can understand most of what they say especially if it is basic interaction, like if they are reading a story it gets complicated. Even like the simplest paragraph can be hard for me because I did not learn it, I just heard it. Like a lot of new comers would speak to me in Arabic and I'm like I understand what you said but let me just answer you in English. If I'm going to answer in Arabic, I have to really think very hard and maybe I can come up with a sentence. But I do not go through the trouble and it would take me a lot of time. And that is what I think would happen to the kids, if they do not grow speaking Arabic it might be hard to learn it.

Although Manal's mother expressed her understanding of simultaneous biliteracy, she seems to consider Arabic language development to be more demanding. Manal, who is a native Spanish speaker and a fluent speaker of English, makes a lot of efforts to provide her children with Arabic practice by purchasing Arabic cartoons, print books and hiring a private Arabic language tutor for her children.

### **6.2.3 Religious Education**

Digital biliteracy was evident in the children's religious education at home. In order to assist the children in memorizing the *Qur'an*, especially immigrant children, parents used a number of digital devices. Lama's mother stated, "There is an iPad that helps them recite the *Qur'an* ... they also use their own tablets to recite and memorize the *Qur'an* at home." In addition, Ali's mother mentioned the different devices that her child uses in order to help him

memorize the *Qur'an*; she stated, “Ali listens to the *Qur'an* on the computer. He, with his sisters’ help, also found one on their tablet and their father downloaded another app on the iPod.” Although their goal was to help their children memorize the *Qur'an*, Ali’s family used different digital devices to acquaint Ali and his sisters with Arabic through the *Qur'an* recitations. It was one way the children developed their literacy in Arabic. I also observed the children holding the *Holy book of Qur'an* and reciting the verses. I wondered if they were reading or they already memorized the *Suras* and were just holding the holy book to acknowledge the recitation activity. Yet, I found that the children were in fact reading from the holy book, and referring to it frequently to revise a verse when they get stuck.

Although Manal was not involved in religious education much because her parents “did not want to push her too much because we do not want her to have some sort of resentment neither with Arabic nor with the *Qur'an*,” Manal’s mother indicated, her brother was involved with digital religious literacy a lot. Being one of the high achievers in memorizing parts of the *Qur'an* at school, I asked his mother about how he memorizes the *Qur'an*, she stated “his father is busy and I can’t obviously read Arabic to help him, so he mostly learned the *Qur'an* and is able to memorize it through digital apps on his phone and also through websites that have *shaiks’* (Islamic leader) recitations.”

When asked about the frequency of her children’s use of digital technologies, Manal’s mother realized that her children do in fact use digital technologies frequently. In one interview she claimed that her children do not use digital technologies very often and just use it rarely for pleasure. In a subsequent interview, Manal’s mother said, “he actually also uses my computer. Now, wait a minute, I realize that they do use digital technologies more than I thought.” Most of the mothers claimed that their children do not use digital technologies frequently and when they

do it is for fun. However, observations at home and conversations with the parents and the children revealed that their use of digital technologies is frequent and more than mere pleasure. It appears that the parents haven't thought about the frequency of usage because they are involved in other household and study activities while their children are using digital technologies. In addition, the parents did not view the activities that the children were involved in to have an educational value beyond entertainment. Yet, by time the parents started to realize that their children are often learning new things as a result of watching cartoons or playing digital games.

#### **6.2.4 Biliteracy Experiences at the Islamic School: Reasons and Roles**

The role of parents in their children's biliteracy development started with their decision to send their children to a bilingual school of Arabic and English. Parents' motivation to send their children to the Islamic Bilingual School varied. Although for some it started with a motivation different from biliteracy development, especially for transnational immigrant families, they eventually realized the value of the school in enhancing biliteracy and religious education. In this section, I compare the reasons that motivated transnational immigrant and immigrant parents to send their children to the Islamic school, the reasons why the school's bilingual program did not motivate their choice and how their perceived role of the school in developing their children's literacy in Arabic has changed over time.

##### **6.2.4.1 Transnational Immigrant Families vs. Immigrant Families**

The reasons that motivated the transnational immigrant families to choose the Islamic school were different from those that motivated the immigrant families. Magid's mother and Jehan's mother, who are transnational immigrant families, chose to send their children to Al-

Noor school because 1) the school was more affordable than other daycare and preschools, 2) it was close to their residence and it offered religious education.

As transnational immigrant families with unemployed parents, the financial resources that they can depend on for living compelled them to seek an affordable pre-school. Jehan's mother said: "the school is cheaper than other daycare places ... we can afford this one better than other ones." In addition, Magid's mother stated: "I wasn't going to send my child to a daycare because I do not need to, but this school seemed affordable, they offered us a discount so we thought why not." In addition, the distance between the two families' houses and the pre-school they send their children to was important. Al-Noor school seemed to respond to these needs. Jehan's mother confirmed this saying, "the school was also close by, I can walk back and forth and that's good because my husband is usually busy and can't come on time."

Seeking and receiving a religious education for their children was another reason why Magid and Jehan's parents sent their children to Al-Noor school. Magid's mother stated

I want my children to learn about Islam and be informed about what is acceptable and what is not in our religion. We are conservative in our country, so when people do something against Islam, they do it without other people knowing about it or seeing them. I'm trying to raise my children according to Islamic guidelines from a young age and starting at pre-kindergarten is the best.

By the same token, Jehan's mother indicated that she wants her daughter to learn the basics of Islam and practice it everyday. She mentioned "she remembers these Islamic expressions better when she learns them at school rather than me telling her, so I thought this is another advantage of going to this school."

On the contrary, the immigrant families reported different reasons behind enrolling their children in Al-Noor school. The primary reasons, however; were mainly motivated by their willingness to provide their children with: 1) religious education, 2) focused instruction in small class sizes and 3) a safe space to learn and develop their identities. All the families, except Ali's family, indicated that learning Arabic is not the reason to send their children to this school.

Ali, Lama and Manal's mothers reported that they wanted their children to receive a religious education; however, they stated different reasons for favoring religious education. Lama's mother indicated:

I did not send Lama to Al-Noor school mainly because she will learn Arabic there but because I wanted her to know about Islam. Things that they learn at school about religion at this age resonate with them for life. My other two daughters still remember the religious facts they learned in this school like the 'eating dua'a,' and the Islamic greeting 'Al-salam Alaikum'.

While Lama's mother was focusing on providing an instruction that exposed her daughter to religious beliefs, Ali's mother wanted more of an immersion in the Islamic ideas and customs. She and her husband wanted an environment that instilled the importance of Islam in their children's life, she stated:

The Islamic school is the only school we can send our children to. If we cannot send them to a similar school then we better go back to our country. We do not want our children to be exposed to foreign ideas and beliefs that contradict with our religion. It is not how we want to raise our children.

Besides Islamic beliefs, ideas and customs, Manal's mother indicated that she sent her children to Al-Noor school because she wanted her children to learn how to read the *Qur'an* and understand it well. She believes that "when the child grows up in a certain environment, they appreciate what it provides, they try to become part of it by following what its values and practicing what it cherishes."

The three immigrant families considered religious education to be a major reason for sending their children to the Islamic bilingual school, not realizing the effect the school would also have on their children's Arabic literacy skills. In fact, literacy in Arabic appeared to be fundamental for their children to meet the goals that the parents pursued, as discussed in section (6.3.3.3).

In addition to providing religious education, Manal and Lama's mothers chose Al-Noor school because of small class sizes that would provide their children with more focused instruction and personalize learning experiences. Manal's mother stated "another reason we choose to put them here at this school is because it is a smaller school, smaller class size that would give attention to the kids' learning needs." In addition, Lama's mother affirmed that "smaller class sizes will make the children feel that they are included in all aspects of the lesson since they will have more chances to express their understanding, or not." The parents vowed for the school's ability to provide better learning experience for the children and attend to their needs fully as the teacher would not be busy attending to the needs of many children as compared to big classroom sizes.

One of the interesting reasons that the parents indicated for choosing Al-Noor school is related to the children's identity development. The parents' efforts to provide their children with religious education and focused instruction was summed in their desire to help their children

develop an Islamic identity that they might not otherwise developed in other types of schools.

For instance, Manal's mother stated:

By sending our children to this school, we do not have to worry about them having any identity crises now or in the future based on what they experience. I've seen some kids who go to public schools and by the time they are nine or ten they have this conflict like they do not know who they are and this is a very big problem. Like in order to feel proud and fit in and you are not different. It is really hard because at this age, they are developing who they really are. It is like some kids are good at it they feel they are strong and secure and they feel like confident about themselves no matter where you place them they will grow up like that, but some kids are not, so you do not know what kind of kids you have until they get older and go through that experience. So you are like I have this type of kid, so it is the child's personality.

As a psychologist, Manal's mother was concerned that the difference between the religious environment that she is trying to raise her kids within and the educational environment in public school may affect her children's ability to fit in and understand where they belong. She was afraid that her children might be confused and not fitting in because what they are being exposed to at home is different from what the other children practice in the public school. One example she mentions is dating. In Islam, boys and girls do not date and do not have a relationship with the other gender while this concept is accepted in the American culture. Another example she indicated was celebrations:



Like in Islam we does not celebrate Christmas and when I put my children into an environment that celebrates it but don't celebrate the Islamic days, the child might start to feel lost between two worlds. And at this young age, they just want to do what their friends are doing, like dress up for Halloween and celebrate Valentine's day.

Similarly, Ali's mother indicated that she doesn't want her children to experience cultural shock or be exposed to contradicting ideas at this young age, when they are still building their identities and trying to create one for themselves. As Muslims, they wanted their children to create the Muslim identity and have the confidence in their beliefs. Ali's mother also stated:

We do not want them to experience cultural shock or confusion when they get exposed to conflicting beliefs at a young age. Also, we want them to speak Arabic and be able to read and write in Arabic. It is an important language; the language of the *Qur'an* and even America realized now how important it is to teach Americans this language for security reasons.

The parents realized that children at young age want to fit in the environment that is surrounding them. That makes it hard for them to understand the differences between religions and cultures if they attend public school in the United States. Yet, Lama's mother had a different view regarding children's identities. She believes that "a child should not be constrained and put into a close environment, they should be exposed to different beliefs and made confident that they are different, and be proud of that and able to talk about it." This is why Lama's mother

sends her children to public schools after pre-kindergarten, after they learn the basics about their religion in school and be ready to face the different outside world.

#### **6.2.4.2 Why Arabic Literacy Development isn't the Reason**

Both the transnational immigrant and immigrant families in this study, except for Ali's family, indicated that sending their children to the Islamic bilingual school was not to improve their Arabic literacy. The families indicated a number of reasons for that and hoped that the school can address them in the future in order to provide a richer biliteracy experience to the children. The main two reasons that the parents expressed were 1) Time allocated for Arabic literacy and 2) Arabic Curriculum intensity.

Magid's mother indicated that the school "did not support Arabic language learning, it's too short, just half an hour a day." In addition, Jehan's mother added that "the school did not help improve her Arabic ... Arabic at school is not enough, they need to extend the time." Moreover, Ali's mother stated "I wish they gave more time to Arabic." The parents showed a desire for an extended period of Arabic language literacy to expose their children to the Arabic language in a more extensive manner. Although the time allocated to Arabic and the *Qur'an* instruction was short, offered four days per week for one hour and a half per day, these statements were made at the beginning of the school year, before the parents see their children's Arabic literacy development.

As a result of the short time allocated for Arabic instruction, the parents implied that the curriculum that is taught would not be strong enough to provide valuable and noticeable literacy development in Arabic. Lama's mother indicated that saying, "when I first enrolled her in this school, Arabic wasn't a main reason. I was thinking whatever Arabic she learns would be good. But frankly I did not expect much because how much can they teach in one hour." Lama's

mother did not have high expectations because she thought that the amount that could be taught in the allotted time for Arabic literacy isn't enough to provide meaningful instruction. In addition, Magid's mother added that, "how much can a child learn if instruction is not enough, I mean it is too short to teach them the language."

#### **6.2.4.3 Parents' Perceptions of the Role of Schooling in Arabic Literacy Development**

Through time, the families realized the role of the school in enhancing their children's biliteracy. The parents noticed their children's literacy development in both Arabic and English and valued the opportunity that the school offered to the children, including the advantages they realized at the outset of enrolling their children and more importantly the ones that surfaced as the school year unfolded.

Some of the parents acknowledged the school's efforts in providing Arabic literacy at the beginning of the school year. Although they did not consider it to have a great impact, they valued it to a certain extent. For example, Manal's mother stated, "I think it has a role in making them comfortable like especially with the language like the more you see something the more it becomes part of you. Like even if you notice it, then you start to notice it every where, so the point is that the more the exposure the better no matter how subtle it is, so yeah it does." Manal's mother implied that the fact that the school offers Arabic is not going to make her children proficient in Arabic but it has a role in making it part of their daily routines. In addition, Ali's mother, although wished for more time to be dedicated to Arabic literacy development, she stated, "I think it is the school where my children learned to read and write in Arabic. It is slow but at least it is there ... I'm happy that Ali is already able to read words in Arabic at this young age."

Other parents realized the value of offering Arabic instruction as the school days passed. For instance, Jehan's mother acknowledge the fact that her daughter learned quite a lot at school that she wouldn't if she was in an English monolingual school. Jehan's mother stated, "Jehan doesn't want to learn at home, only at school ... she learned a lot about Arabic, she can say the Arabic alphabets, she likes to listen to songs she hears at school like the *alphabet song* and *bismillah*, not new ones that I try to offer to her." Lama's mother was also thrilled at the award ceremony when she knew that her daughter had learned a decent number of *Suras*, she said "I did not know she knew all these *Suras*, I'm glad she came to the school here." It sounds like the parents' statements that they made at the beginning of the school year prove to be only assumptions that were countered by the end of the school year.

#### **6.2.4.4 Digital Biliteracy Exchanges Between Home and School**

During their time at school, the children were exposed to a variety of different experiences, coming from homes that valued biliteracy in Arabic and English and that were rich with different digital means to support their biliteracy development. Parents' roles and goals in the biliteracy development of their children varied; but were often enriched by the different ideas that children exchanged at the school and gradually altered and enhanced the parents' views on the biliteracy and religious education of their children.

##### **6.2.4.4.1 Exchanges Taken from Home to School**

Being at Al-Noor school enriched the children's biliteracy development in many ways. The funds of knowledge that the children bring to school with them and share with their classmates get transferred to the other children's homes. Most of the times, these funds of knowledge can be accessed, confirmed and used only through digital technologies, particularly

when the children are coming from two different countries and different living circumstances. For example, children talk about the types of food they bring to lunch and the cartoons they watch at home. Parents have consistently reported that their children make requests to watch or talk about something, eat a particular dish or play a certain game based on what they hear at school or what their friends share with them. Their mothers reported having to look up some of the things their children ask for at home or request to try because, as Jehan's mother said, "I had no idea what *mahshi* (stuffed grape leaves) is until I looked it on the internet and saw the picture." These exchanges mostly take place during playground and lunchtime when the children get to talk to each other and share their cultural resources or funds of knowledge. In this section I describe three main exchanges between the children at school, which are 1) Arabic cartoons, 2) Arabic games, and 3) Arabic food.

At school, the children talk about cartoons they watch at home and describe what they see to their friends. A child in the classroom once told her classmates about the cartoon she watched with her sister. Ali asked, "What is the name of the cartoon?" the child responded, "I think it is *Hikayat Alamiya* (World Stories)." In a subsequent interview with Ali's mother, she told me "Ali insisted on watching those cartoons, I looked it up and we watched them frequently." Ali's mother also reported "Ali always has something new that he wants to watch, usually something that he heard about from his classmates at school. That is ok with me as long as it is acceptable." Similarly, Magid repeatedly asked his mother to watch Arabic cartoons that his friends at school told him about and "usually ones that [she] hears of for the first time.'

The exchanges vary from talking about favorite cartoons, movies, characters and games to certain types of food or dishes. Manal once said to her classmates, "I like my mom's *macaroni bil bashamil* (a version of macaroni and cheese), it's so yummy!" In the interviews with the

mothers that took place after this saying, the mothers reported that their children have requested this dish at home. Jehan's mother stated, "I wasn't sure what she was asking for, so I had her sit with me and we looked it up." Likewise, Magid's mother told me that her son asked her if she can make that dish, and it "became his favorite ever since."

In the same fashion, the children also requested to play particular games that they got to know about from their classmates. Manal frequently talks about the games she plays at home on her phone. Most of the games are educational, so she would tell the children that she listened to a song and she sings it to them, or she knows how to spell a word and she spells it to them. In many instances, the children asked her "where did you hear it?" when they discuss this at school, or "can you show us?" when they are playing in the community center and she had her phone. Interactions among the children were mainly around how to play a game, or download it. For instance, Jehan approached Ibrahim, a boy in her class, who was playing on his tablet in the community center:

Jehan: What are you doing?

Ibrahim: Playing a game

Jehan: Can I see?

Ibrahim: Yes

Jehan: I like this game!

Ibrahim: Yes, it is cool.

Jehan: can I play a little?

Ibrahim: wait, I want to finish this one.

Jehan: What are you doing?

Ibrahim: I'm fighting these zombies.

Jehan: Look; this one is eating the flower.

Ibrahim: yes, I will plant this nut in front him?

Jehan: Why?

Ibrahim: so he can't get to my brain!

Jehan: What? Your brain?

Ibrahim: I mean the one in the game.

The children also exchanged fun games. For example, Jehan and Ali's mother reported that their children asked on several occasions to play certain games that a classmate told them about. At times, they knew the games by name such as *Aswati Almariah* (my fun voices) and *iPlay Arabic*. Their mothers looked the games up on the computer or the tablet and made them available for the children to play with.

#### **6.2.4.4.2 Exchanges Taken from School to Home**

In addition to the exchanges of games, cartoons and songs between the children at school, the children exchange Digital Arabic literacies between school and home. Jehan's mother stated that Jehan "asks to listen to songs that she hears at school from her teacher like the *Bismillah Song* (in the name of God) and the *Arabic alphabets song*." Jehan prefers to transfer literacy that she receives at school to home but doesn't respond to digital literacies offered by her mother. For example, Jehan's mother stated: "if I try to put something new she doesn't like it." Similarly, Ali's mother indicated that Lama does ask to listen to songs or watch cartoon clips that she watches at school, but she usually "wouldn't be interested in what I provide," her mother added. In the same way, Lama's mother indicated that Lama has asked to be allowed to use ABCmouse.com at home, one of the educational websites that they use at school. Yet when her mother invited her to listen to a story that she came across on the Internet, Lama "wasn't

interested, she listened a little then said ‘I’m bored’.” A few days later, Lama requested the same story from her mother, telling her that her friend Ali at school told her about it.

On the other hand, Manal’s mother reported that her daughter hasn’t expressed a desire to watch or listen to something she heard about at school. Manal’s mother stated: “she doesn’t show interest for watching something her friends are watching, she never told me.” Manal’s mother thinks that could be because Manal “watches a lot of cartoon and plays a lot of games at home. Maybe she is having a lot of it.” Manal’s mother statement was stated after she realized that her children do in fact use digital technologies more frequently than she thought. While her children do not request to watch cartoons or play games and are content with what she provides, Manal’s mother stated on several occasions that she asks other mothers, especially Arab mothers, about applications for teaching Arabic and ways to purchase Arabic books and stories for her children.

These social interactions provide spaces for digital biliteracy exchanges between children and/or mothers. These instances of digital exchanges represent the social aspect of digital biliteracy as a practice that can be transferred and exchanged through interactions with others, whether it is children or adults.

### **6.2.5 Parents’ Perspectives on Digital Biliteracy**

As discussed in the previous section, the participating Arab families consider their children’s biliteracy to be fundamental and a potential advantage in several aspects of their current and future life. Using digital technologies became a practical and reliable way for the parents and the children to develop biliteracy in English and Arabic. The parents shared their perspectives on their children’s digital biliteracy with regards to: 1) their children’s readiness to develop Arabic and English literacies at the beginning of the study, and 2) their interest in developing these languages.



### **6.2.5.1 Child Readiness for Biliteracy Development**

There is extensive research that looked at dual language acquisition and simultaneous biliteracy, which is a worry that parents express when their children are learning two languages at an early age. The participating parents in this study questioned dual language acquisition too. A concern expressed by the participants relates to the idea of children's readiness to become biliterate. Biliteracy development in English and Arabic at a young age might be challenging as a result of the major differences between the two languages. Some of the participating families reported that they were concerned their children might get 'confused' between the two languages, and not be able to develop either one of them. The parents were also concerned that their children might develop a preference for one language over the other and would develop some resistance to either Arabic or English.

Magid's mother indicated that her son doesn't seem to be ready to develop both Arabic and English simultaneously. She stated, "I want them to learn Arabic but they are not learning it. They prefer English because they hear it more often." Obviously, Magid's mother was using English more often than Arabic and that could have legitimized its use at home. In addition, English was the language that Magid heard most often outside his home. As mentioned in section 5.2.1, Magid spent most of his time outside home in the community center, where the primary language of communication among the children was English.

Similarly, Lama's mother indicated that Lama might not yet be ready to develop literacy in Arabic because she is young. She explained that when Lama "wants to use Arabic and is able to she will ask for it." Lama's mother indicated that she doesn't expose Lama to Arabic because of the lack of Arabic materials that she have access to. Lama wished she could watch more cartoons in Arabic, similar to the ones her friends talk to her about. However, her mother stated

earlier that Lama doesn't request Arabic literacy. One possibility could be that Lama, as a child, is not aware that watching Arabic cartoons is directly related to her Arabic literacy development. In addition, her peers might have influenced Lama and she showed interest in Arabic cartoons as a result of her peers' interest on them.

Jehan's mother also assumed that her daughter is not yet ready to develop literacy in two languages. Jehan's mother explained that Jehan "isn't ready yet to develop Arabic, she picks what is easier and what she hears more, and that is English." It is true that, as a child, Jehan might resort to speaking only one language and that is usually the language she hears more. Yet, a child's tendency to use one language may not be interpreted as a preference to one language over the other, especially that English is obviously the language that Jehan's parents favor.

On the other hand, some of the parents seemed informed about language acquisition and the child's age as a factor in learning. They indicated that their children could learn languages at a young age easier and faster than they would be able to after they finish elementary school. Manal's mother confirmed this view when she was discussing how her daughter acquires Arabic at home, she stated "You know even a few minutes of listening to the language when they are young really helps." In addition, Jehan's mother confirmed this view when she stated her husband's wish for his daughter to learn English in pre-kindergarten, she said, "she is still young and by the time we go to Libya, she will be in kindergarten or first grade and at that age it is easy for her to acquire Arabic."

Ali and Manal's parents did not show any concern about their children's readiness to develop two languages simultaneously. Both families had confidence that their children were able to develop literacy in English, and especially Arabic since they consider Arabic to be 'harder' (as discussed in section 6.2.1.1 and 6.2.1.3). Ali's mother stated that her son is

developing literacy in both Arabic and English at home, before he even starts school. His motivation to do so, although unconsciously, is triggered by his desire to communicate with other people and impress them. Particularly with Arabic, Ali's mother stated that Ali "likes to learn Arabic, he sometimes wants to impress his father so he would ask about the equivalents of words in order to tell his father a story or something that has happened." Similarly, Manal's mother was confident that her daughter could be literate in three languages simultaneously. Manal's mother recognized the advantages of a child's readiness and ability to develop literacy at a young age. She also recognized the difference in language complexities and decided that her children "ought to develop Arabic and Spanish first ... actually she (Manal) learns Arabic so quickly, it is amazing, I do not know how do they absorb it ... and English will come later, they hear it everywhere."

Although the differences between English and Arabic, in terms of the direction of writing, the alphabets and the script, were not conferred by the participants, it is implied in their description of Arabic as 'harder' or English as 'easier'. In fact, this description shows the perception that the parents held about each language and that they considered Arabic to be more complex. That may be the reason why their plan to remain and settle in the United States compels them to choose or privilege Arabic over English. In the case of Lama, although her mother indicate that they did not make much of an effort to develop their children's literacy in Arabic, she feels guilty for not doing so. She stated: "I feel bad because my children cannot read Arabic." While none of the parents was simultaneous biliterate (see section 5.6) it is interesting to see that some of them are trying to help their children become biliterates, and those who don't are feeling guilty about it.

### 6.2.5.2 Children's Interest in Biliteracy

The participating parents reported that their children show different interests in developing literacy in Arabic and English. Magid's mother stated that Magid "isn't interested in learning two languages, I think he finds it difficult." Likewise, Lama's mother reported that her daughters "have varied interest in learning Arabic," while her oldest "learned to read with the help of a friend," her "middle daughter is not very interested and Lama I believe is not yet ready." Equally, Jehan's mother indicated that she doesn't know her daughter's level of interest in developing two languages but she feels that Jehan "finds Arabic pronunciation difficult so she doesn't like to use Arabic." The three mothers indicated that their children's level of interest in becoming biliterate is low, especially that they find Arabic to be difficult and cannot pronounce Arabic letters easily. Manal's mother also indicated that Manal "is not interested much and [her parents] do not want to push her too much because we do not want her to have some sort of resentment neither with Arabic nor with the *Qur'an*." Although Manal has just started to learn English formally at school, and although she speaks Arabic at home, she showed some resistance to formal instruction of Arabic and English. However, her mother stated: "whether she is interested in Arabic or not, she is learning it." Manal's mother is referring to the informal setting of learning through watching cartoons and playing digital educational games on the smartphone.

On the contrary, Ali's mother reported that her son is interested in becoming biliterate. Ali translanguages in Arabic and English at home and practices reading both languages with his sisters. His mother stated that he "likes to speak Arabic because he likes to impress his father. He imitates personalities that his father embraces and those are mostly Arabic speaking. He also knows that his father wants him to learn the *Qur'an* and he can do that by learning Arabic." Ali's

mother also mentioned that he wants to know meanings of words in both languages and attempt to look up more information about a topic that interests him online.

#### **6.2.6 Digital Biliteracy Among Arab families: How Children's Digital Biliteracy was Developed?**

Digital literacies bring together literacy practices that are embedded in social relationships and differ as enacted across time and space (Gee, 2003; Street, 1995). This view suggests that literacy can be attained informally through the use of digital technologies, when used as a mean to maintain social relationships. Most of the participating parents indicated that their children acquired English and/or Arabic informally, by listening to the language and speaking it with other children. Literacy usually starts with speaking a language; usually acquired informally but can also be acquired in formal settings. In this section, I examine the children's development of Arabic literacy and English literacy through digital and other resources and means. I also discuss how the use of these forms provides multimodal experiences for literacy development at home.

##### **6.2.6.1 Literacy Development in Arabic**

The participating Arab families used a mixture of tools in order to assist their children in developing literacy in Arabic. These tools included digital means such as watching cartoons and educational programs on TV, YouTube and DVDs, reading and/or listening to digital books and stories, and playing digital games. Given the transnational dimensions of the lives of these families, literacy development in Arabic involved participants and resources that were located beyond nation-state borders by interacting with extended family members in the home country

using social media. The children also developed Arabic through other means such as reading print books, using Arabic at home and socializing in Arabic with friends.

#### **6.2.6.1.1 Literacy Development in Arabic Using Digital Technologies**

Arabic cartoons are one way Arab families keep Arabic present in their children everyday routines. All of the participating families reported that their children watch Arabic cartoons through different means, including TV, DVDs and YouTube; at various degrees and with various interests. The children sometimes ask to watch certain cartoons and their parents encourage them to do so by offering them programs and cartoons that they believe can help with Arabic literacy development. Manal, Jehan and Magid's families have an Arabic satellite TV at home.

According to their parents, the children regularly watch Arabic cartoons, educational programs and Arabic movies on TV. The different TV channels provide a limited selection of cartoons, which the children do not have the privilege to choose from. In fact they watch what is available according to the compatible time with the children's sleeping, schooling and family routines. The difference in timing can be an obstacle, as Lama's mother reported; "all Arabic cartoons that are broadcasted through the Arabic satellite are late at night." In fact, different Arabic satellites offer Arabic cartoon at different timings.

The children's mothers also indicated that they believe there is an effect on their children's Arabic literacy development as a result of watching the cartoons. In particular, Manal's mother has confirmed that Manal watches a lot of cartoons in Arabic. Interestingly, Manal's mother stated that Manal spoke both standard Arabic and the Egyptian local variety of Arabic. In responding to a question about how she managed to do so, Manal's mother said,

We have both types of cartoons, characters using standard Arabic or Egyptian Arabic. We mix them so that they learn both. Manal,

before she goes to school, she walks around speaking *fusha* (standard Arabic), so maybe she did actually learn a lot from TV. Because, obviously, her father never spoke *fusha*, it is hard. Nowadays, every now and then he would play with her speaking *fusha* and they would sound like Dora.

Besides, Jehan's mother states, "watching cartoons in Arabic might have helped too, although it is not much." Informal interactions and digital viewing of Arabic cartoons seemed to have contributed to Jehan's Arabic literacy development. I observed Jehan listening to a children's Arabic song using her mother's smartphone and asking her mother, "does *Aukhti* means sister?" on a subsequent visit to their home, I observed Jehan telling her brother, "I'm your sister, your *Aukht*." I asked her mother how did Jehan learn the word *Aukht* (meaning sister) although she doesn't have a sister? Her mother said, "she learned it from watching the song on YouTube." In addition, Ali's mother added that Ali "watches cartoons in Arabic regularly and that must have had an effect to his Arabic literacy development." She also encourages her children to "watch Arabic shows and cartoons like *Abla Fathela*," a show that the mother used to watch in her childhood.

Ali and Magid watch Arabic cartoons regularly. Their mothers reported that they watch the Arabic cartoons that are recommended by their peers and friends with their siblings at home. Magid's mother reported that Magid "sometimes ask [her] to look up something in particular for him that he learnt about from his friends at school." He asks to watch Arabic cartoons and she searches online for the ones she asks for. Yet at times, Magid "cries because he does not understand it." Similarly, Ali's mother also stated that Ali requests Arabic cartoons based on what his friends tell him at school, she stated, "he learns about new Arabic cartoons from his

friends at school like *Toyor Aljanah* and *Hikayat Alamiyah*.” Yet, Ali enjoys watching the Arabic cartoons and occasionally “asks his sisters or me [mother] to explain what was said,” if he doesn’t understand it. While Ali watches cartoons online mostly via YouTube, Magid’s mother uses YouTube to view cartoons and also have a satellite TV that broadcasts some of the Arab countries’ local Arabic channels.

On the other hand, Jehan and Lama do not watch a lot of Arabic cartoons. Lama’s mother explained that the reason behind that is the timing when the cartoons on the Arabic satellite are broadcasted; she stated “All Arabic cartoons that are broadcasted through the Arabic Satellite are late at night.” For this reason, Lama’s mother does not subscribe to an Arabic satellite at home. Similarly, Jehan’s mother reported that Jehan doesn’t watch Arabic cartoons much. She stated that Jehan “doesn't like to watch Arabic cartoons, only things that her teacher shows in class.” Jehan’s mother also added, “Even when I try to put on Arabic cartoons, she doesn’t like it and changes the channel.” While Jehan resists Arabic cartoons, Lama doesn’t get the chance to view it. She once told me when I asked if she watches any cartoons at home, “only English, I wish I can see Arabic cartoons ... my friends tell me it is nice and it is for girls.”

The families encourage their children to watch Arabic cartoons because they believe it is a handy way to connect them to the language while at the same time providing Arabic practice to develop their literacy in Arabic. Contrary to the prior discussed four cases, Manal watches a lot of Arabic cartoons at home. Her mother reported that they watch cartoons on the satellite dish and purchase others online, she stated: “there aren’t many cartoons on dish-network. So, we purchase DVDs online.” Manal’s mother, although on the first interview mentioned that her children do not use digital technologies a lot, stated, “they do use digital technologies more than I thought.” The effects that Arabic cartoons had on Manal’s Arabic language development went



unnoticed by her mother although the main reason she purchased them was to expose her children to the Arabic language and help them develop Arabic literacy since she did not speak it. Yet, talking about it helped her realize that Manal and her brother did learn a lot from watching Arabic cartoons because their father, the only other source of Arabic, doesn't spend a lot of time at home because of the nature of this work. This might indicate that watching Arabic cartoon could in fact has an effect on the child's Arabic literacy development especially that she spoke a dialect that is not spoken at home and one that is usually not spoken amongst the children.

Reading is another way to develop literacy in a language. The participating parents believed that their children would have listened and enjoyed more books in Arabic if they were in a digital format. Unfortunately, Arabic digital books, stories and games are not widely available. To this regard, Lama's mother stated:

There is nothing in Arabic, no Arabic stories, or games. I looked but there is nothing other than *Toyor Aljanah*. I searched when I first bought my phone but did not look again. Also, I just downloaded the Arabic keyboard on my phone, maybe if I search using the Arabic keyboard I can find something.

Similarly, Manal's mother indicated that digital stories and books are not common, she stated: "We do not have any digital Arabic books for children; I do not know if they are available unless I'm really out of the loop and did not spot them." Manal's mother also mentioned her personal preference to digital books rather than print books, she confirmed:

I can see that they are (digital books) the future and where everything is heading and I can see how print books are becoming a waste that I have to sell them or donate them after a while when the

children become not interested in them. So I thought we will just stick to print books for now but if there are any e-books in Arabic I need to find them, if they are out there I would use them.

In addition to her interest, Manal's mother also stated that she thinks her daughter would prefer digital Arabic books if they are available, she said:

Right now [Manal] prefers print books only because we have more of them but if I get an e-reader and put tons of books on it she would definitely go for that. Because kids have this tendency towards digital things ... and also on books she just looks at the pictures but if the digital format can read for her it would be what she and me looks for.

Jehan, Magid and Ali's mothers also indicated that their children like digital books. They reported that they are not familiar with Arabic digital books, and do not know if there are any. In particular, Magid and Ali's mothers, who own digital devices that support digital books and stories, did not look for them online or searched for applications that provide this genre because they "didn't think there are any," Ali's mother said, and because "the children did not show interest in Arabic," Magid's mother added.

In addition to digital stories and books, parents encourage their children to play educational games, specifically designed to develop their literacy in Arabic. Manal has a lot of educational applications on her phone that her mother describes as "cute." Her mother explains that Manal has:

Mostly Arabic applications, like it will have a word, like *tufaha* (apple) you know and she will have to drag the letters in the right

position of the word. So it is good because it shows you the difference positions of the letters in words. Yah and what else she has? She mostly has ... a few things that would read you a story like it will show you some words and then read you the story and flip the page. She flips the pages and it would have something like a ball and if you touch it the ball will move. It's really cute.

It appears that there is an interest from the parents' side in providing Arabic literacy support for their children, yet the lack of resource like tablets, smartphones and Arabic keyboards or ignorance about the existence of these resources hinders access to the language.

Besides watching cartoons, reading digital books and playing digital games, the families figured that getting their children to communicate with their extended family members in their home countries, and sometimes beyond, was a way to keep Arabic present in their children's minds and to eventually develop their literacy in Arabic. The parents communicated with their extended family members through different means. Magid's family in Libya makes regular phone calls because it is cheaper and because the family in Libya does not have Internet access. On the contrary, Lama's parents use the Internet to call their family in Jordan through different smartphone applications such as Skype, Viber, and Tango. These applications give them the video calling option where the children can talk to and see their family members. Similarly, Manal's father uses Viber and Tango to call his family members in Egypt. However, Ali and Jehan's parents use the computer to Skype with their families in Egypt and Libya, respectively.

The parents indicated that communicating with their family members in their countries of origin is important to develop their children's literacy in Arabic. Magid's mother stated, "I try to call home from time to time so that they can practice speaking Arabic with family. I think that is

important in order to remind them of the people who speak this language and what they mean to them.” Magid’s mother considers literacy in Arabic to be a means for strengthening family ties. In addition, Lama’s mother believes that talking to family members supports her children’s literacy in Arabic, she explained saying, “my kids like to talk to *teta* (grandmother), they look forward to it. They try to speak Arabic, and seek my support at times when they can’t find the right word or not sure about the right way to say something.” Lama’s mother thinks that Lama and her sisters “speak in Arabic because they are afraid their grandmother won’t understand what they are saying.” In fact, Lama’s mother believes that talking to family members supports her children’s literacy in Arabic, she explained saying:

Their grandmother encourages them to speak in Arabic, even when they say something in English she asks them to say the equivalent in Arabic ... I think that increased their Arabic vocabulary and made them realize that there are these people who won’t understand us unless we spoke their language.

To sum up, Lama’s mother stated:

Their communication with family helps, not as much to practice but to remind them that Arabic is an important language and they need to know it to keep in touch with their family. Communicating with extended family members helps them understand that even if my mother and father can understand what is said in in English, other family members might not so they always remember that it is an important language.

In the same way, Ali's mother said, "I think talking to their grandmothers and their cousins motivates them to speak Arabic, and encourages them to read and write in order to keep in touch with them." These parents consider digital communications, whether written or spoken, as means for Arabic literacy development. Although their children might not recognize it as they engage in it, their parents believe it will have an impact on their ability to read, write, speak and understand spoken Arabic.

Considering the purpose of digital communication, to develop children's literacy in Arabic, parents indicated that their children do not get involved a lot in the conversations with their family members in home countries. Manal's mother reported that her husband, "calls them [his family in Egypt every weekend. Sometimes he would be on the camera and sometimes not. Just depends on how long they will talk and how much time does he have. But the kids do not talk to them very much." Besides, Ali's mother stated, "I Skype most of the time but that is during the day when the children and my husband are not at home." This conflict between goals and practices might show that parents encourage their children to learn Arabic to validate their Arab identities and constantly remind them that they belong to an Arab culture. It could also imply an inner appreciation for the language and Islam as the religion that is connected to it; they want their children to be literate in it in order to have a 'connection' to the language and religion more than a 'connection' to family and culture.

#### **6.2.6.1.2 Literacy Development in Arabic through other Resources**

Arab children in the United States get exposed to their mother language in different ways. Yet, the stage when their parent decided to expose them to the language was quite similar among the participating families. The parents decided to keep Arabic alive in their children's lives through speaking it at home. Lama's mother explained that Lama developed Arabic at

home by hearing Arabic spoken by her parents, she stated: “They learned to speak Arabic by hearing us speak it and speaking to them in Arabic, in normal situations.” Lama’s mother affirmed that this strategy is the best since “hearing Arabic at home has helped instill the love of Arabic in her [Lama] and her willingness and ability to understand what we say at a young age.”

Likewise, Manal developed Arabic literacy informally at the home setting too. Her mother reported that Manal “started to hear Arabic around home since she was young, hearing it from her brother, her father and of course watching cartoons in Arabic.” Similar to Manal, Ali developed literacy in Arabic informally at home through interactions with his parents. Ali’s family also followed this strategy and enforced Arabic as the language of home, Ali’s mother stated:

We speak Arabic at home so they know they need to converse in it in order to express themselves. I'm sure that helped a lot in developing their Arabic language and preserving it because I think if they did not hear it they would not speak it and it will be hard for them to acquire it when they grow up. I do not want my children to sound weird when they speak Arabic, it is their mother tongue and it would be a shame if they can't say words right.

Ali’s mother also indicated that Ali hears Arabic at the community center from adults, she said: “he doesn’t like to play away from me, so if there are no children playing close to me, he would just sit and listen to our conversations, which are in Arabic of course.” These three immigrant families recognized that living in the United States might prevent their children from acquiring Arabic. For that reason, Lama’s mother and father instigated the Arabic-only rule at home in order to promote Arabic literacy development. In the same way, Ali’s parents spoke only Arabic

to their children as a way to ensure their children will speak Arabic and be able to develop Arabic literacy as they grow up. They believed that if their children did not speak Arabic, it would be hard for them to learn how to read and write in it. Besides, Ali's parents were concerned that not being able to speak Arabic at a young age might affect their children's pronunciation in Arabic if they wait to hear and speak it in a formal setting.

Magid's mother reported that Magid developed Arabic in informal settings. She stated that he learned Arabic by "hearing us [parents] speak Arabic at home." However, Magid's mother confirmed that Magid "hardly speaks or understand Arabic," although his mother is confident that he understands it. Similarly, Jehan developed Arabic informally at home, her mother explained that she learned Arabic: "by hearing me (mother) speak Arabic to her, her brother and father. Also, she improves her Arabic when we (the family) go to Libya."

One way to support children's Arabic literacy development is to socialize them with other Arab families. Yet, because most of the children in the United States prefer to use the English language rather than Arabic, families who attempt to use this strategy find it hard to keep. Manal's mother explained this saying:

Kids would speak a few words in Arabic and then jump back to English. My husband gets furious like, why don't your kids speak Arabic. You know it might be ok when they are young but as they grow up and become teenagers they won't speak to their parents much. This is a big problem because like right now I'm taking a class online that is in Arabic through this university in Pennsylvania. So I'm taking the class and like a lot of the people in my class are Arab. But they just do not know Arabic. They grow up

and they are Arab by blood only.

Socialization with other Arabic speakers was an obstacle because of the difference in the dialects used by children. These varieties of dialects complicate comprehension because a word can be said differently in each dialect and can sometimes carry a different meaning too. On several occasions, I asked the children why they use English and not Arabic when they speak with their friends, they responded saying: “I don’t understand their Arabic.” Although Modern Standard Arabic (MSA) is the official variety that is used as an official language in the Arab countries (see section 1.1 and 2.5.1 for more details), MSA is not spoken in informal situations.

#### **6.2.6.2 Literacy Development in English**

Similar to the tools used in the Arabic literacy development, the participating Arab families used a mixture of tools in order to assist their children in developing literacy in English. These tools included digital means such as watching cartoons on TV and YouTube, and reading and/or listening to digital books and stories, playing digital games. The children also developed English using other resources and means such as reading print books, and socializing in English with parents, siblings and friends.

Parallel to their views about Arabic literacy development, the parents indicated that their children developed literacy in English mostly informally before joining pre-kindergarten but also formally in pre-school. The mothers reported that most of their children’s informal English literacy development resulted from the use of digital technologies.

##### **6.2.6.2.1 Literacy Development in English Using Digital Technologies**

One of the ways children developed English literacy at home was watching English cartoons on TV and watching English cartoons on YouTube. Most of the participating mother



reported that their children watched English cartoons before they go to preschool and that had a great impact on their literacy development in English.

Magid's mother affirmed that her son developed English literacy by watching a lot of cartoons. She stated, "watching cartoons at an early age supported his (Magid's) English Literacy." Magid's mother also added that Magid watches many different episodes of cartoons on YouTube. Magid and his brother "request the cartoons from their mother, and [she] tries to look it up for them."

Similarly, Jehan's mother reported that Jehan mostly developed English literacy by watching cartoons on TV. She watches cartoons every day for hours, her mother stated "when she first wakes up she sits in front of the TV before she goes to school ... and she does the same right after she comes back from school, watching all different types of cartoons on Disney and BPS." During my home observations, Jehan was mostly watching cartoons or sometimes playing with her mother's smartphone. Comparably, Lama doesn't watch a lot of cartoons but do watch a lot of TV in English. According to her mother, Lama and her sisters usually watch cartoons on TV when they come back from school while their mother prepares dinner and:

Watch TV with us (parents) at night ... everything that is child appropriate, even news. If there is something that is not for kids, they know and just leave ... when I'm not sitting with them, even if it is a commercial that is not appropriate, they call me or change the channel.

However, I observed Lama playing on her mother's phone during one of the interviews. Her mother intentionally handed her smartphone to Lama and asked her to play on it. Lama's

mother told me, “she doesn’t usually play on my phone, but I just want her to be busy until we finish the interview.”

Ali’s mother reported that watching cartoons on YouTube had a great influence in Ali’s English language development. His mother stated, “Watching English cartoons was a way for Ali to develop his English language. While his sisters were at school, he spends hours navigating the Internet and asking for my help to look up things on the Internet. That helped improve my English too!” Before he went to pre-school, Ali “types some keywords like animal names or objects like cars or Legos and chooses from what comes up and watch. It is not always cartoons but it has always been videos.” In fact, during all my observations and interviews in their home, Ali and his sisters were usually sitting in front of the computer or playing on the tablet. Using digital technologies to develop literacy in English was common in all households. All parents attested to the role of digital devices in the English language development of their children.

Digital books, stories and games are another way Arab families used to support their children literacy development in English. Although not extensively used, children read and listen to some stories using smart devices like smart phones and tablets. Among the five case study children, Lama, Ali and Jehan use these devices to listen to stories and play games. One of the reasons parents introduced digital devices to their children is because they wanted to offer them an interactive experience in literacy development. Instead of being exposed to what they perceived to be passive language acquisition, as the case with watching cartoons, the parents wanted to have their children more involved in learning. Lama’s mother stated,

I think digital technologies are helpful, my children can learn a lot of Arabic through technology. My older daughter developed Arabic and learned the *Qur’an* and I think it can help Lama because she

can see and hear the language. Also she can do it by herself, without me, or a teacher being there. Also kids like to know that they can do things on their own and technology can afford them that space.

In addition, the parents discussed the advantages of using digital books. For example, Lama's mother said, "when they read a story on the tablet, there is usually these icons that they can touch and objects that pop out. This keeps their interest in the story." In addition, Ali's mother indicated that the digital stories and games "help the child follow with the reader and gives them a chance to experience the story as if they are part of it ... like characters that move when the child touch them and animals that make sound, too."

Moreover, Jehan's mother affirmed that digital stories and game are more involving and that her daughter "likes audio more than colors. So she would prefer the digital version especially if it has music and is reading to her." Yet, Ali's family "did not try to purchase digital books online" because "when buying a printed book one owns it and can touch it, but the digital book is not tangible so it is like you bought something but cannot have it," his mother stated.

However, there are some obstacles that the parents face in obtaining these digital stories, books and games. One of the obstacles is cost. Lama's mother indicated that Lama would prefer to use digital stories. However, the fact that she doesn't have choices, she prefers print books. Other obstacles include keyboard availability, screens and availability of Arabic print and digital books.

#### **6.2.6.2.2 Literacy Development in English Using other Resources**

Besides the use of digital technologies as a source for biliteracy and language development, there were other resources that were available for the children including 1) print materials, 2) socialization with family members, and 3) socialization with peers and friends.

**Print Materials.** Providing print books and stories to children to read is a way children develop literacy in a language. Most parents reported that they read books to their children frequently, yet their children demand more reading to be done, or ask the parent to read to them at times when they might not be available. Magid's mother indicated that they "do not have print books at home, the children are not interested in them." Her children enjoy watching cartoons more than looking at a book and decoding words out of it.

On the contrary, Lama, Jehan and Ali's mother reported that their children liked to read and interact with print books. Lama's mother states, "We have a lot of print books at home, like stories and coloring books. I also take them to the library to check out books. They are easier to get than digital books." Lama enjoys reading books and is willing to spend hours looking through books, coloring and talking about the pictures in the book. Similarly, Jehan likes print books and stories, "she asks her father to buy them for her every time she sees them in the store," her mother stated. Jehan also "imitates the way her teacher reads books to them." Yet, as a student, her mother finds it time consuming to meet her demands for reading books; a reason why Jehan watches a lot of cartoon on TV. Likewise, Ali enjoys books. His parents "used to buy him print books but now borrow them from the library." Ali and his sisters go to the library every week. Ali tries to read by himself and his sister offers to read to him or helps him if he needs help. His mother stated, "I do not know how to read well in English ... and frankly do not have the time to do so." It appears that book and print reading have an effect on the children's literacy development. The children's interactions with print and the assistance they receive from their parents and siblings support their ability to developing their ability to decode words from print and read them. Yet, the limitations of time on the parents' side and the lack of literacy skills in English with some of them might limit the affordances of print books in literacy development.

**Socialization with Family Members.** Another way literacy in English was developed at home is through socialization with siblings, and sometimes with parents too. Most of the participating families reported that their children speak English with their siblings at home at various rates. Having older siblings was one of the factors that introduced pre-kindergarten children to English at home. Magid's mother indicated that her children only use English among them, and they respond to their parents in English although their parents reported that they "speak only Arabic to them." However, during my participant observation, I observed Magid's mother speaking English most of the time because Magid would not respond to her when she speaks in Arabic. I tried to speak to him in Arabic but he wouldn't respond either. When asked his mother about that, she said, "I think he is too lazy to try to respond in Arabic, but I'm sure he understands it because his father speaks Arabic with him and he responds to him. I believe it is just a way to make us speak English because it is easier for him." Similarly, Jehan's mother indicated that she uses mostly Arabic with her daughter, but Jehan responds in English. Jehan's mother stated,

She speaks Arabic at 20% of the time. I speak Arabic to her at 80% of the time while her father and brother use English with her at all the time." Jehan's mother confirms that her daughter understands spoken Arabic but "she speaks English because it is easier for her!

Jehan's mother believes that Jehan prefers to use English because she hears it from her father at home and "the fact that I give in and speak to her in English might encourage her to use it." Jehan's mother implies that the fact that both parents legitimize the use of English at home encourage Jehan to use it and neglect Arabic.

Both Lama and Ali had older sisters who preferred to speak English at home. Ali and his sisters speak English amongst themselves and respond in Arabic to their parents. Comparably, Lama and her sisters respond to their parents in English. Lama's mother stated that her children "speak English to each other, all the time." However, she reported, "they use Arabic most of the time with me... at about 70% of the time." Lama's mother indicated that she only resorts to English "for discipline purposes, to make sure they understand what I said and there is no excuse for not understanding what I said." Lama's mother also stated that "the fact that she hears English among her sisters and sometimes when responding to me helped in developing her English literacy." Lama's English literacy development was partially supported by the interactions that she observed, and later became involved in, between her sisters and parents. This implies that Lama and her sisters understand more English than Arabic, it is the language used to make things clear!

Similarly, Ali's mother reported that although Ali "uses English with his sisters all the time, they all respond [to their parents] in Arabic." Ali's mother indicated that Ali "doesn't struggle with speaking Arabic. He sometimes doesn't know some words and he asks me to help him find the equivalent." Ali heard English spoken among his sisters at home. The fact that his mother didn't speak English made conversations carried with her be in Arabic. Yet, Ali's mother acknowledged that hearing English from his sisters and talking to them in English "must have had an effect on his English language development." Hearing and interacting in English was a reason but not a sole one in the mother's point of view for developing their children's English language and providing them with a space to practice English language speaking. Yet, Lama and Ali's mother believe that their little children's interactions with digital technologies had a greater

effect on their children's English language literacy development, learning the numbers, colors the alphabets and trying to sound out words.

Different from the other families, Manal's mother reported that she and her husband:

Do not speak English with the children but my husband and I speak English together, for half an hour a day in the children's presence. But we are trying ... My husband learned quite a bit of Spanish and I learned some Arabic. What we have been saying for ten years now is that we will have like a Spanish day and we will have an Arabic day when we do not speak anything else. But they [the children] speak a lot of Spanish these days, maybe because he [father] is not at home much.

Manal's mother explained that Manal is proficient in Arabic and Spanish, "both her Arabic and Spanish are good and she usually would continue a conversation in Arabic without any problems; she has always spoken Arabic without difficulty." She explains that the factors that supported Manal's Arabic language development included "just with my husband speaking to her in Arabic and Cartoons, like on TV and her brother speaks to her in Arabic too." Besides literacy development through digital technologies, Manal's socialization in Arabic with her father and brother, although not frequent, supported her Literacy development in Arabic.

**Socialization with Peers and Friends.** A third source of English language development with Arab children is their socialization with other children in the community center or during visits at their home. Ali, Magid, Lama and Jehan's mothers all reported that their children use English when they play with other children, whether at the community center, or when they visit their friends at their homes. Most of that socialization was in English, where the children had a

chance to listen to other children talking, interact with them and participate in some literacy activities with them.

The participating families reported that they spend some of their free time at the community center. At the community center, the children played in the playground, played soccer in the grass field and borrowed a friend's tablet, DS, iPad or their mothers' smartphones. Observing children in the community center, the time they spent there was mostly chatting about something 'cool' they did on a digital device, including the time they spend playing on the playground and chasing each other. For instance, while Ali was running after Manal in the playground, he shouted "I played a car race game on the computer, it's just like this, cars following each other to win." Ali was so excited telling his digital experience to his friend Manal, and Manal said "I played a game too, its fun.. It is about pictures and letters." They continued to play until another classmate arrived with his tablet in his hand. All the children from the pre-kindergarten classroom run to him. They sat next to him, asking to have a turn to play the game. Looking closer, the child was playing a phonics game that Lama recognized, she said " I have that game on my tablet, let me get it."

The children were eager to use the tablet; they got a turn, watched each other play the game and were as good in doing it. This scenario repeats itself almost every Friday, when I go to the community center. The children socialize and play together, but digital technologies are becoming part of their play. It doesn't dominate their time there, but definitely is present. Children in their age, being three and four years old, are usually swinging and going down the slide, running after each other and playing with a ball, but these children are including 'digital talk' in their conversations, and showing each other how to navigate a new game or application. Using digital technologies, talking about their use with each other and sharing their digital



devices seems to have enabled the children to, unconsciously for their age, learn about different and new ways and applications to develop literacy. The result of their socialization with other children afforded them chances to share knowledge about ways to develop language and literacy around games, and provided them chances to use digital devices together. During these instances, the children learned from each other how to look for a game and download it, how to play it, and how to navigate the digital store on the smartphones to look for new games. This type of literacy that is social and digital in nature offer the children a chance to develop digital literacy and learn about new ways that can be applied to acquire other languages.

It appears that as the Arab children spend more time in the United States and develop stronger literacy in the English language, socialization in Arabic among them decreases. During the eight months of data collection, I observed children starting the school year only speaking Arabic. Because their peers recognized that, they spoke to them in Arabic. Yet the more their English developed, the more English they used. Their friends recognized their ability to understand and converse in English, so English became the medium of communication between them.

### **6.3 Conclusion**

Digital biliteracy is supported in the Arab families' homes by parents. The purpose of encouraging the use of digital technologies in their homes is to keep their children busy, provide them with entertainment, and offer them ways to support their learning and biliteracy in Arabic and English. Some of the advantages of using digital technologies are foreseen and expected by parents, such as the fact that reading digital books and stories supports the emergent biliteracy development of children and interacting with family members encourages the use of Arabic and develops the children's Arabic literacy. On the contrary, some of the parents did not anticipate

the advantages of playing games, and watching cartoons and their possible role in the emergent biliteracy development of their children.

The roles that parents play in their children's digital biliteracy development were integral to digital biliteracy development because they were the decision makers of what their children can do with digital technologies and what they can watch. Table 6.3 summarizes the main results for research question number two, concerning parents' roles in their children's digital biliteracy development. The parents' decisions were influenced by their children's requests, which resulted from their digital exchanges between school and home. However, they were also influenced by their own experiences as children and their perceptions and experience with what influenced their literacy development when they were young. The parents' roles are summarized in two categories to represent parents' efforts with each language separately (see Table 6.3).

Table 6.2

*Parents' roles in their children's Digital Biliteracy Development*

<b>Parents' Roles with digital Arabic Literacy Development (ALD)</b>	<ul style="list-style-type: none"> <li>• Having children participate in conversations with family members in home countries performed digitally</li> <li>• Offering children ideas on educational Arabic shows</li> <li>• Purchasing Arabic DVD-cartoons</li> <li>• Subscribe to Arabic Satellite TVs</li> </ul>
<b>Parents' Roles with digital English Literacy development (ELD)</b>	<ul style="list-style-type: none"> <li>• Subscribe to local satellite cables (such as BPS kids)</li> <li>• Purchase digital devices such as tablets</li> <li>• Download digital stories, games and math practice</li> </ul>

The parents encourage their children to speak Arabic by having them participate in digital conversations with their family members in home countries. They also give their children ideas about shows they used to watch when they were young and encourage them to watch them, believing that they were beneficial (see section 6.2.5.1.1 for examples). The parents' intention from this is to get their children to listen to Arabic, but that purpose is not disclosed directly to the children. Instead, they introduce these shows as “memories of childhood”, as Ali's mother stated. Furthermore, the parents purchase Arabic DVD-cartoons for their children and provided a variety that included standard and local varieties of Arabic in order to develop their children's Arabic literacy and understanding of the local dialects (see section 6.2.5.1.1 for examples). In addition, they subscribe to Arabic Satellites in order to give their children, and themselves, the chance to listen to Arabic.

In addition to supporting Arabic language development through digital tools, parents also use digital tools to support English language development. For example, parents subscribe to local satellite cable television services that broadcast children's English cartoons such as BPS kids (see section 6.2.5.2.1 for examples). They also purchase digital devices, such as tablets and iPads, in order to provide their children with access to English practice through games, books, and cartoons. In most of the cases, the parents purchased the device as a mean for entertainment. They then realize the roles of these digital devices in their children's literacy development and enforce them. As a result, parents download digital stories, games and math practice for their younger children, while older children download similar applications of their choice.

## **Chapter Seven: Discussion and Conclusion**

### **7.0 Introduction**

I started this study with the hope of understanding the ways digital practices of Arab prekindergarten children at home and school promote their biliteracy in Arabic and English. I used the theoretical lenses of the New Literacy Studies (Barton & Hamilton, 2000; Cope & Kalantzis, 2000; Street, 2009), Multimodal Literacies (Jewitt & Kress, 2003; Kress, 2003; New London Group, 1996), Digital Literacies (Gee, 2003; Street, 1995) and Situated Learning Theory (Lave & Wenger, 1991) to understand the digital biliteracy practices of the participants. As I entered the process of data collection, I wanted to document participating teachers' and parents' views and practices on the role of digital technologies for supporting the children's emergent biliteracy development. Throughout this study, my own roles changed in ways I had not expected, but which eventually enriched my knowledge and understanding of the participating Arab children's digital biliteracy development.

In this chapter, I discuss the eight major findings of the study which are 1) Adhering to social conventions supports biliteracy development: Shaping digital biliteracy, 2) Strategic language socialization: Children recognizing norms of language use, 3) Transnational digital biliteracy: Maintaining family ties and social relationships through digital technologies, 4) Literacy as Autonomy: Appropriating digital technologies and shaping independent identities, 5) Un-planned biliteracy development in two different languages, 6) Cultural practices generating gender related literacies, 7) Digital technologies as cultural mediators: Children's funds of knowledge facilitating biliteracy development and 8) Adult digital biliteracy: Parents gaining biliteracy with their children. I then describe the contributions that the study yielded by examining digital transnationalism and emergent biliteracy development and explaining the

theoretical orientations that this study extended. I then discuss the implications, suggestions for further research and limitations of this study. I conclude this chapter with a summary of the study and some concluding thoughts.

## **7.1 Discussion**

The purpose of the study was to develop a deeper understanding of the roles that digital technologies play in fostering additional language acquisition. This study also aimed to examine the processes through which digital technologies can provide virtual spaces or transnational “homes” (McLean, 2010) for transnational immigrant and immigrant children whose first language is Arabic. These virtual transnational spaces provided a safe environment for children to develop English as a second language and maintain the Arabic language as a heritage language. Analysis of the data collected in this study yielded eight sets of findings, which I review and synthesize below. It is worth noting that seven of these findings were related to the study’s research questions while the eighth finding was not an intended focus of this study and thus not expected.

### **7.1.1 Adhering to Social Conventions Supports Biliteracy Development: Shaping Digital Biliteracy**

The first main finding of this study is that children’s use of digital technologies has served communicative and linguistic goals. The communicative goals that the Arab families in this study engaged in included keeping in touch with extended family members in order to adhere to Arab nations common social conventions such as frequently checking on their families, talking to their parents and siblings, and giving wishes and sharing pictures during celebrations, births and weddings. These social conventions were made possible through digital interactions

by frequent voice and video calls via different smartphone applications such as Skype Viber, Tango, and Dington. The families also sent pictures to family members in their home country, maintained interactions by chatting using applications such as Whatsapp, Telegram and Viber. In addition, the families maintained social networking sites such as Facebook and Twitter. The children were encouraged to use these social networking sites; they were provided with support from parent when they wanted to write using the Arabic language and they were usually present when adults were using them. Although the families reported that the purpose of keeping their children in touch with their families was to maintain Arabic in the lives and minds of their children, their fear of language loss did not seem to be the driving factor. In fact, the reason for keeping in touch was to maintain the important social conventions that grandparents and other extended family members expect. The parents reported that they wanted their children to maintain Arabic because they want them to be able to communicate with their family members who do not speak English, and to understand that Arabic is a valuable language to keep family ties.

Digital biliteracy also served linguistic and language development goals. The children's biliteracy and bilingual development was enhanced by engaging in a number of interactive tasks conducted with the use of digital technologies such as listening to stories, learning concepts of alphabets, colors, shapes, and numbers, and labels for these concepts. In addition, the children participated in digitally oriented entertainments that supported their biliteracy development, including playing games; watching cartoons in DVD formats, on YouTube, and on TV; and drawing and coloring on different educational website such as ABCmouse.com and StarFall.com.

Children's use of digital technologies at home varied but was practiced on a daily or

near-daily basis. The parents stated that their children do not use digital technologies very often. The parents claimed that they do not allow their children to spend a lot of time using digital technologies because they were concerned it might affect their sight and concentration levels. However, observations, and further interviews with the parents and conversations with the children revealed that the children do use digital technologies for at least two to four hours a day. On a number of occasions, the parents asked their children to watch cartoons on TV or play with their tablets or the parents' own phone when they had visitors or in order to finish a task they are engaged in such as cooking, cleaning, talking on the phone and studying. In addition, some of the parents stated that their children use digital technologies for entertainment and do not think it contributes much to language development. Further conversations and observations revealed that digital technologies had an impact on the children's language development. The Arab children developed their English language and Arabic language informally via several cartoons on TV, YouTube, DVDs, and different games and educational applications on their smartphones and tablets. In addition, planned formal practice on educational websites such as ABCmouse.com and StarFall.com that were used at home and school influenced the children's literacy development in English. I believe that if similar educational platform were available for formal Arabic language practice, similar positive results on Arabic language development would be expected.

### **7.1.2 Strategic Language Socialization: Children Recognizing Norms of Language Use**

The Arab children in this study recognized language use by other children and attempted to adhere to language socialization patterns. Several children who are newcomers started school with limited English language proficiency. Their classmates recognized this and used Arabic to speak to them, especially those who shared the same variety of Arabic. Over time, the

newcomers improved their English language communication skills, and were able to communicate in English with their peers. Their friends recognized their improved ability and adopted English as a language of communication. When English became the medium of communication between them, the newcomers were interacting with all the other children. This type of interaction between children highlights two important findings. The first finding related to the children's strategic selection of the language to use according to their perceptions, as bilinguals, of what the receiver comprehends. This strategic selection of language was also observed during interactions with family members in their country of origin. The children, whose dominant language is English, tried to speak or write in Arabic because they recognized Arabic was the language that their family members understood. Being involved in this type of situations instigated the importance of Arabic, and also showed how children can strategically adapt their use of language according to the immediate situation. It also seems that the children are aware of language growth by other children; they alter their own linguistic use with the same person, as they perceive that person's abilities. This finding is consistent with research showing that children have the ability to become competent members of their community by participating in language socialization practices (He, 2003; Lam, 2006; Schieffelin & Ochs, 1986; Watson-Gegeo, 2004). In addition, research depicted children as actively negotiating meanings and relationships in the acquisition of new linguistic competencies when they are involved in communities of practice (Rogoff, 1990; Rogoff & Gardner, 1984; Wenger, 1998). However, the child's ability to strategically recognize and socialize with others according to the norms of the language being used has not been studied much, especially as applies to Arabic speaking children who speak different varieties of Arabic.



The second finding is related to the extent of participation in Arabic language situations when the used variety is not the child's home variety. This observation emphasizes the linguistic distance between the different varieties of Arabic, specifically between immigrant and transnational immigrant children who are geographically distant from their countries of origin. Children who are growing up in their countries of origin are usually exposed to different varieties of Arabic through TV, at school and through interactions in Arabic with Speakers of other varieties of Arabic. Yet, the limited socialization opportunities that immigrant and transnational immigrant children have with other Arabic variety speakers as a result of the dominance of English in their interaction, and the narrow exposure to digital programs and cartoons that use different varieties of Arabic creates a linguistic distance that interferes with the children's ability to use Arabic as a language of socialization with other Arabic speaking children. This finding is similar to the linguistic distance stressed by Saiegh-Haddad (2012), and which Ferguson (1959) referred to as diglossia, between spoken Arabic, which children learn to speak at home, and Standard written Arabic (MSA), which children learn via formal instruction in reading. Saiegh-Haddad claims that this linguistic distance results in learning difficulties and hinders the natural acquisition of basic reading skills in Arabic. In the same fashion, the immigrant and transnational immigrant children's limited exposure to the different varieties of Arabic affects their use of Arabic as a language of socialization because of the comprehension distance that the different varieties create and the availability of an alternative, English, to use as a medium of interaction.

### **7.1.3 Transnational Digital Biliteracy: Maintaining Family Ties and Social Relationships through Digital Technologies**

The Arab families and children in this study participated in different digital literacy

practices in their efforts to communicate with their families in their countries of origin. Digital technologies have afforded immigrant and transnational immigrant families different means to communicate with their families beyond national borders. Through their communication, they appropriated digital literacies as part of their everyday repertoires of transnational practice, for purposes of maintaining family ties, mother language, and funds of knowledge. These interactions served many goals, including confirming transnational affiliations, developing autonomous identities, and maintaining heritage language and cultures.

Digital technologies extend the potential for immigrants and transnational immigrants to use multiple languages, connect with family members, learn new information by accessing different information sources, and read and write in Arabic and English. The families' use of digital technologies involved accessing information and communicating in their native languages, in order to maintain their language proficiency and develop their children's Arabic literacy development. The transnational literacy practices of the mothers included helping children with their homework, maintaining family ties, learning English as a second language, and developing their children's Arabic literacy while being in the United States. Being involved in these digital home practices created translanguaging opportunities for both the mothers and the children to strengthen their bilingualism and biliteracies. One of the interesting findings of this study is that some Arab transnational immigrants seem to want to be involved in many aspects of the American culture but fear condemnation from immigrants because they are involved in events that are not celebrated by Muslims, such as dressing up for Halloween and celebrating Valentines Day.

In general, Arabs are committed to family responsibility and courteous adherence to social conventions that are related to their culture, which is in opposition to the traditions of

individualism and independence practiced by Non-Arabs. This commitment can be related to Arab children's learning styles that are greatly influenced by the use of digital technologies. The reason for that is, while being immigrant or transnational immigrant in the United States, Arab people attempt to stay in touch with their extended family members at their home countries using digital technologies. When children grow up around these digital practices, they become socialized into their use of digital technologies (Gutnick, Robb, Takeuchi, & Kotler, 2011; Plowman & McPake, 2013), both for social interaction and learning. In both cases, they are developing bilingualism and biliteracy.

#### **7.1.4 Literacy as Autonomy: Appropriating Digital Technologies and Shaping Independent Identities**

The Arab parents in this study stressed their children's views of literacy as autonomy. Street (1984) made a distinction between what he described as "autonomous" and "ideological" models of literacy, and explained that the autonomous views present literacy as isolated from the cultural underpinnings of the context in which it exists. In addition, scholars identified with the New Literacy Studies challenged this view, arguing that the particular forms and practices of literacy utilized in particular contexts (Barton & Hamilton, 2000; Cope & Kalantzis, 2000; Street, 2009) changes in different conditions, e.g. from one context or culture to another. Literacy as autonomy in the context of this study, in a U.S.-Mexico border city, explains the affordance that digital technologies offer to the child in order to engage in literacy practices that don't require others to assist with aspects of literacy that s/he cannot perform on her/his own, e.g., reading. This use of digital technologies is a way for the child to appropriate digital tools for his/her own use.

Rockwell (1996) discussed the concept of appropriation as the selection and use of

particular aspects of the school culture and actively using those aspects from different positions and interests. In the context of this study, the children used digital devices and tools and adapted them to achieve new literacy tasks and transformed them to agentive cultural tools that shape the child's identity. The appropriation of digital technologies in this context provides the child with a space to develop a sense of independence and ability to conduct tasks without depending on the assistance of others. For instance, the child can listen to a story read on the digital device, a skill that s/he can not proficiently do by themselves and one that they do not always find other people, such as teachers, siblings or parents, to help them with when they need or want it. Although Vygotsky (1978) described literacy as a social process, and while digital technologies offer a space for socializing with others and develop biliteracy, the autonomy that digital technologies offer enhances literacy development in the absence of adult support. Autonomy has always been considered as a quality of youth, however, children's development of autonomy at this young age indicates that autonomy is no longer a quality of youth only, but has extended to include children as well.

#### **7.1.4.1 Forming Identities through Digital Biliteracy**

The type of autonomy that digital technologies provide might have implications on building the child's identity as a digital biliterate who is independent. With the advent of digital technologies, identity is constantly changing (Gao, Cheng, Zhao, & Zhou, 2005; Gee, 2001; Gu, 2010), and is neither restricted to a single place, defined by nationhood, nor limited to physical access to actions and relationships.

The constant socializing and participation in digital networks affect the child's identity development. The continuous engagement with people of different backgrounds and cultures through the use of digital technologies, transnational communication, offers the children a home

to develop their identity as Arab Muslims. The children's interaction with different people from their home and host countries experience cultural and identity shifts through their interactions with their family members in their countries of origins. These digital interactions, while assist the children develop digital biliteracy, they afford them a 'home' where they are able to belong to a group (Deaux, 1993; Hinkle & Brown, 1990) that shares their language and culture. These digital sociocultural activities that the children participate in help them develop a sense of belonging and form their identities.

While the meanings that are associated with literacy vary for participants and are rooted in social relationships; similarly, one's identity is shaped by social relationships and actions. With physical or face-to-face social interactions much diminished with extended family members who live abroad, as is the case for many immigrant and transnational immigrant children, digital technologies provide effective tools for learning as well as creating, maintaining and sharing identities (Noguerón, 2011). I believe that when the child builds an autonomous identity, it helps him/her to realize that literacy is not limited to one form or one source. Hence, digital technologies liberate individuals from the geographical restrictions of migration by allowing them to participate in literacy tasks even in the absence of the immediate, physical support that children sometimes demand.

When children engage in these flexible and helpful features of technologies, it is common that they sometimes alter and at other times shape new identities. For example, Lama's use of her tablet to listen to stories was accepted by her mother as a time saver and a supporting tool for accomplishing literacy practices, and welcomed by Lama as a source of support to read the stories whenever she wished to. In this situation, the tools that the children are engaging with, the digital technologies that they use to access text, sound and cultural practices, affects what they

are doing when they act with others. In other words, engaging with digital technologies to perform different literacy practices affords the children a space to develop autonomy and independence, forming new identities through their engagement with different literacy tasks and using digital technologies to achieve biliteracy.

#### **7.1.5 Un-planned Biliteracy Development in Two Different Languages**

At the Al-Noor school, where English and Arabic are taught in different classrooms using different curricula, both teachers used Arabic and English to support literacy development in the respective target language. The teachers' strategies and teaching methods served as catalysts to support children's biliteracy development as they translanguage in and practiced both languages in each context. In the English classroom, the children practiced Arabic letters, numbers, and colors as a way to scaffold Arabic literacy development. In the Arabic classroom, the teacher delivered instruction in English, as the dominant language of all children, but also emphasized the use of Arabic by Arab children. The dual use of both languages in both classrooms seems to have influenced the children's perceptions of the importance of Arabic and English. Particularly in the Arabic class, the children realized that they needed to articulate their ideas in Arabic as requested by their teachers and made efforts to do so in order to be able to participate in different classroom activities.

Both teachers depended heavily on digital technologies to support instruction, reinforce learning, and provide fun and interactive practice. Previous research has urged teachers to integrate digital literacy practices in the classroom in order to provide multimodal learning designs for immigrant students (McGinnis et al., 2007; McLean, 2010; Walsh, 2007). In this context, the teachers draw on their experiences with young children, and their use of digital technologies with their own children at home was a motivating factor in their decision to engage

the children in literacy practices that are entertaining and productive, in spite of the school's limited digital resources. Str. Jane and Str. Susi use strategies that seem to serve the children's biliteracy development in a unique way. Both teachers use digital technologies to support biliteracy development, yet they are primarily focused on the development of one target language while at the same time supporting the development of the other. These efforts represent the digital biliteracy framework where both English and Arabic are reinforced using digital technologies. The digital literacy practices that the children engaged in included social, cultural and ideological components to assist the children in constructing meaning (Gee, 2012).

#### **7.1.6 Cultural Practices Generating Gender Related Literacies**

Gender separation in the Arab culture is associated with male and female identity and roles. The Arab children in the study tended to favor literacies that reflect culturally privileged understandings of gender. The children's tendency to favor a particular gender over the other seems to be related to gender separations in their homes. The practice of having two sitting or visiting rooms (one for males and one for females) is common among Arab families, including the participating families. That cultural distinction seemed to be represented in the literacy practices of the children at school too. Preferences for particular colors, characters and themes reoccurred in many instances at school. The teachers addressed this culturally oriented distinction by offering digital literacies that were intended to appeal to each gender.

Gender and literacy has been contested in research and researchers argued that a tendency to esteem one gender over the other is mostly cognitively and biologically derived (Martin & Ruble, 2010). However, socialization processes seem to interact with cognitive-developmental factors to determine children's tendency to gender information. In addition, the presence of this preference among Arab children who practice gender separation at their homes implies that their

cultural practices reflect this distinction and preference for one gender over the other. In other words, gender roles are usually based on cultural and social factors, and are therefore the product of socialization. This finding is consistent with research on Arab and Muslim families' gender roles and relations. For instance, Ajrouch (2004) explains how Arab American high school students use gender relations and religious teachings to create boundaries that distinguish them from both white as well as immigrant Americans. Cultural understandings of gender roles that are different for men and women are underneath both the physical separation of the sitting rooms and the literacy-related distinctions that the children tend to practice. These preferences were also evident in the reading materials, print and digital, that the children interacted with.

#### **7.1.7 Digital Technologies as Cultural Mediators: Children's Funds of Knowledge Facilitating Biliteracy Development**

One of the interesting uses of digital technologies by the Arab families in this study was to connect the children with their cultural backgrounds. This practice was dominant at home but was also present at school. The different activities that children engage in at school, such as using examples of the children's origin country's flags, cities and famous landmarks of the children's countries of origin, were conducted by the Arabic and Islamic studies teacher (Str. Jane). In addition, the parents frequently used search engines and social networking sites to present and familiarize their children with some general Arab culture customs as well as cultural activities that are unique to the cultural practices associated with the particular national identity that they identify with. The mediating role that digital technologies play in these instances facilitate the child's emergent biliteracy development as they are provided with a platform to relate to their culture and funds of knowledge while adapting to the dominant culture in the United States. In this process, the children are constructing dynamic cultural flows (Medina,



2010) in their continuous access to their own culture via digital technology.

Most relevant to biliteracy development are the opportunities that digital technologies provide in order for the children to relate to and familiarize themselves with their funds of knowledge and relate to them during the different activities that they engage in at school. The Arabic and Islamic studies teacher's strategy to use vocabulary words and pictures that reflected the children's backgrounds is a culturally responsive pedagogy that serves two purposes in this context. The first is to reinforce concepts that the parents try to present to their children at home, whether using digital technologies or through the different pictures that they display at home (see chapter 5 of this study for more details). The second purpose is to help the children relate to what they are seeing and talking about. This strategy seems to provide the children with instructional strategies that welcome their funds of knowledge and integrates them into instruction in order to make it meaningful. In addition, when the children are socialized in language using their cultural values, their ability to connect to their culture through language socialization practices is strengthened (He, 2003; Lam, 2006; Schieffelin & Ochs, 1986; Watson-Gegeo, 2004; Zentella, 2005).

#### **7.1.8 Adult Digital Biliteracy: Parents Gaining Biliteracy with their Children**

The participating mothers in this study played a major role in their children's digital biliteracy. Children's development of literacy in multiple languages has received increasing attention in Literacy Studies (Reyes, 2012), including the role family support plays in children's biliteracy development and sociolinguistic contexts (Bauer & Gort, 2012; Gregory, 2008; Li, 2009; Reyes, 2011). Research findings have led literacy researchers to conceive of adult literacies primarily as what parents and elders contribute to their children's literacy development and academic success. Although it was not the focus of this study, a major finding was related to

the significance of parents' participation in their children's emergent biliteracy. Research has not investigated the ways the adult literacies of Arab immigrant/ transnational immigrant parents are shaped through their participation in their children's emergent biliteracy. The parents' transnational literacies were influenced by using digital technologies to support their children's developing biliteracy in Arabic and English. While they were involved in their children's biliteracy, the mothers used digital technologies to produce and interpret written texts (Vieira, 2013) in English and Arabic. For instance, Jehan and Magid's mothers used search engines to figure out meanings of English words that they did not understand. In addition, Ali's mother frequently looked for Arabic cartoons and programs to support her children's Arabic literacy development. In doing so, these mothers' literacies were shaped through the process of helping their children become literate in Arabic and English via on-line and digital technologies.

## **7.2 Contributions of the Study**

The history of the Arabic language, its importance as a world language, and its increasing use around the world were addressed at the outset of the study and served as part of the motivation to learn what new literacies using new digital technologies can mean for becoming and being literate in this particular and very old world language/writing system. As discussed in chapter one (sections 1.1 – 1.4), Arabic is the fifth-most-widely-spoken language in the world and is the official liturgical language in all Muslim states. It is spoken by an estimated total of 1.5 billion speakers around the world and is an official language in all 25 Arab countries. Arabic is also one of the minority languages spoken in the United States with an estimated total of 3 million speakers of Arabic as a first language in the U.S. (Gordon, 2005). According to Ortman and Shin (2011), the number of self-reported Arabic speakers in the U.S. has increased over the past 30 years (see Table 1.1) and is projected to increase in the next few years (Table 1.2). In

order to respond to the needs of the growing number of Arabic speakers in the U.S. and the importance of Arabic for Arab immigrants in the U.S., many private and public charter schools have been established around the country. The status of Arabic in the world and in the United States signals the significance of studying Arabic literacy and the role of digital technologies in the literacy development of Arab adults and children. This study has addressed the different uses of digital technologies in the literacy development of Arab children and their parents. It contributed to understandings in the field of literacy/biliteracy about the importance of Arabic in the lives and minds of Arab individuals and its status in the world as a language of rich history and contemporary presence. This study also discussed the linguistic distance that the different varieties of Arabic create and found that children were able to recognize the language growth of peers when using the English and Arabic languages. The study is consistent with research showing that Arabic-speaking children who grow up bilingually are skilled at recognizing the differences between writing systems that differ in terms of directionality, alphabet, and script (Saiegh-Haddad, 2012).

The existing literature on funds of knowledge has typically involved children and learners drawing on their cultural resources that are place-based or rooted in a particular physical community. However, research has not focused on Arab children's funds of knowledge and their role on biliteracy development. The children who participated in this study sought funds of knowledge about their own countries, national identities, and cultural identities online using digital technologies to access resources through their participation in digital literacies. These types of literacies are very different from the physically based, face-to-face sources of information that are assumed in the funds of knowledge literature. Digital technologies liberated parents from geographical restrictions, allowing them to maintain cultural ties while providing

their children access to and participation in cross-cultural and linguistic transnational spaces that allowed them access to their funds of knowledge. As a result, this study contributes to the field of literacy/biliteracy's understanding of funds of knowledge by considering that are digital in nature.

In addition, this study has provided an overview of an area that is little studied but ripe for investigation, given the rapid progress in the availability and access to digital technologies by children. Given all of the potential issues that revolve around educating children in the new millennium, few topics change as quickly and elicit as strong an emotional response as a consideration of the role and influence of digital technologies on young children. There is no shortage of information about how children can be engaged with digital technologies, what digital technologies to use, and to a lesser degree the potential benefits or harms of digital technologies. What tends to be missing from this literature is a global discussion or consideration of issues and trends related to digital technologies in children's schools, homes, and communities. Therefore, by focusing on the digital biliteracy development of Arab immigrant and transnational immigrant children in the U.S., this study sought to explore more global perspectives of digital technologies and their roles in biliteracy development.

This study makes several contributions to our understanding of how digital technologies are used and what the consequences are for biliteracy development. First, it sheds light on the emergent biliteracy development experience of an understudied group of learners—Arab children in the United States. It illuminates the complex circumstances in which Arab immigrant and transnational immigrant families use digital technologies to maintain transnational affiliations, at the same time they are developing literacy in two languages which are different in script, direction of reading and writing. Additionally, this study advances the notion of literacy

development beyond geographical restrictions, suggesting important methodological and pedagogical implications for studying biliteracy development through digital means (section 7.2.1). Finally, this study theorizes the digital biliteracy framework, a new lens for studying literacy development among nations with large numbers of immigrants and transnational immigrants who are interested in simultaneously developing their children's literacy in English and their heritage language, Arabic. The study also provides implications for practice, including recommendations for teachers and parents (section 7.2.2).

### **7.2.1 Implications for Theory**

The study contributes to the field of sociocultural studies (Barton & Hamilton, 2000; Baynham & Prinsloo, 2009; Street, 1993; 2000) by bringing together diverse but complementary theoretical perspectives including the New Literacy Studies, Multimodal Literacies, Digital Literacies, and Situated Learning in order to design the digital biliteracy framework. The study documents the experiences of immigrant and transnational immigrant children's biliteracy experiences by applying multimodality frameworks (Jewitt & Kress, 2003; Kress, 2003; New London Group, 1996) to explore the ways digital technologies can provide spaces or homes for transnational and emergent biliteracy experiences.

#### **7.2.1.1 Digital Biliteracy: Extending Theoretical Orientations**

This study provides theoretical contributions to the field of sociocultural literacy research and learning. Research has shown that learning environments that welcome children's funds of knowledge are more productive and invite the learners to participate as they feel part of the activity when they are able to relate to it. In this particular context, the Arab children are reinforcing concepts that they are exposed to at home, but also they are learning to make their

funds of knowledge part of school. In addition, the teachers' presentation of cultural norms and using them as examples during instruction is conducted in both Arabic and English. This use of both languages while permitting aspects of students' lives in the classroom (Jewitt, 2008) with the support of digital technologies enhances emergent digital biliteracy development and invites the children to connect the communicative environments of the school and the home.

Accordingly, digital biliteracy development is situated in a context that is relevant and welcoming. The classroom environment provides authentic practice and culture in a meaningful context (Lave & Wenger, 1991) that invites social collaboration and interaction and makes use of multiple literacies in the classroom. The New Literacy Studies suggests that literacy development is socially and culturally situated (The New London Group, 1996) when it is embedded in social relationships.

Literacy is perceived as a social practice (Street, 1984, 2000, 2005; Heath, 1983; Barton & Hamilton, 1998) and can be presented in multiple modes for meaning making such as visual, linguistic, oral, gestural, etc. (Kress, 1997; Kress & van Leeuwen, 1996). This study combines a social practice view of literacy with an account of multimodality in order to establish the possibilities for understanding literacy as a social practice that is influenced by new digital technologies. On the one hand, New Literacy Studies describe literacy as a social practice rather than a set of autonomous skills (Street, 1984, 1993). This view considers literacy as culturally and ideologically situated (Gee, 1996). On the other hand, multimodal literacies value the interest of the learner in navigating multiple modalities that help them make meaning (Kress, 1997). Thus, the way literacy develops from one site to another, and the use of different modes, was influenced by the learner's culture and contextually situated language ideologies (such as importance of English language development over Arabic language development for

transnational immigrants), which in turn affect their identity as hybrid learners. For immigrant and transnational immigrant children who have a first language and come to the United States to acquire English as an additional language, school curricula that moves between home and host sites is important in order to access their funds of knowledge and cultural background. However, when geographical distances make it impossible to move physically between the home and host sites, digital technologies provide a transnational medium for immigrant and transnational immigrant learners and children to access their cultural background and funds of knowledge. In this sense, digital technologies are providing a platform for transnationalism in order to help the child situate their learning (Lave and Wenger, 1990) in a meaningful context. As a result, developing literacy in two languages becomes a sociocultural process that is mediated by digital technologies and situated in meaningful virtual and physical contexts. This process is what I refer to as the Digital Biliteracy theory. This theory can be a type of “generalizing” and a potentially powerful one. Generalizing the theory of digital biliteracy and its propositions—as opposed to generalizing the results or findings of this study—among Arab transnational immigrants and immigrant learners around the world and in the United States is consistent with the qualitative and ethnographic methods used in this study. The tenets of the theory of digital biliteracy can be used and tested empirically as principles of explanation and prediction for the biliteracy development of immigrants and transnational immigrants who use digital technologies to access funds of knowledge, maintain family ties, and develop literacy in their mother tongue.

#### **7.2.1.2 Examining Digital Transnationalism and Emergent Biliteracy Development**

The digital and transnational literacy experiences in the present study occurred as the children interacted with family members beyond geographical boundaries, using the Arabic language as a medium of communication. In this way, this study helps us understand the

emergent biliteracy experiences of Arab children as embedded in multimodal practices (Gee, 2004; Kress, 2003; Kress and Jewitt, 2003) within the complex ecologies where they develop. This approach highlights how technology use is being culturally situated in children's lives. It also highlights how their digital experiences are shaped by their digital practices at school and home, and by relationships with family and friends.

These case studies also illuminate how the status of the Arab participants as immigrants or transnational immigrants in the United States shapes the ways they value and use digital technologies for biliteracy development and the language they prefer their children to develop literacy in. Accordingly, this study contributes to work that has extended the field's understanding of literacy beyond the local (Brandt & Clinton, 2002; Baynham & Prinsloo, 2009; Street, 2005) by tracing their uses of digital technologies to assist children's literacy development in Arabic and English. I have conceptualized digital biliteracy as a product of the children's participation with digital literacies in two languages via the use of different digital technologies. This rationale is supported by recent work that examines transnational practices in relation to situated practices (Warriner 2007, 2009; Lam 2006), as well as work that follows the mobility of knowledge across multiple contexts (Leander et al., 2010). Therefore, this study extends our understanding of learning spaces beyond geographical boundaries in new and valuable ways.

The findings of this study are consistent with studies that examine the use of digital technologies among immigrant adolescents and adults. Specifically, this study endorses research findings that document the importance of immigrants' use of email communication to maintain connections and membership with their countries of origin, and their access to digital programs, and websites in their first language (Lam & Rosario-Ramos, 2008; Lam, 2004; Yi, 2009). This



study also supports previous research documenting the affordances of online spaces for immigrant youth to design transnational identities and engage in multilingual interaction practices with audience across the globe (Lam, 2000; Lam, 2006b; McGinnis et al., 2007). However, one significant difference in this study is that Arab children used their first language, Arabic, to mediate most of their interactions because they were strategically selecting the language that is used by their family members in their respective home countries. Another significant difference is that their access to programs in their first language was for the purpose of developing their literacy in Arabic, maintaining their transnational affiliations and understanding the cultural traditions that their parents valued.

This study has also extended the notion of multimodal, multiliterate and digital literacy to reflect the role of these discourses that take place in school and at home in supporting immigrant and transnational immigrant children's biliteracy development with the assistance of digital technologies. The study of Arabic literacies in the context of this study (El Paso/Spanish/English dominant context) could add to aspects of New Literacy Studies by extending the scope of emergent biliteracy development to two languages that are different in script, alphabetical sounds and direction of writing to include digital practices and hybrid discourses that take place at school and home and contribute to the development of these two languages when effectively geared towards biliteracy development. In particular, this study adds to Street's ideological model, which was developed with reflections of *maktab* literacy practices (Street, 1985) that were conducted in Arabic. Street's ideological model identifies the meanings and concepts underlying literacy events and the relation of different modes and their location in social and institutional contexts to understand the practices motivating them. In this study, literacy remains a set of social practices deeply associated with identity and social position. However, this study

argues that people's immigrant and transnational immigrant status and their access to literacies through digital technologies can affect the ways they perceive literacy. In other words, when distant geographical positions restrict access to them, the micro literacy events that are underlying the macro literacy practices are contingent by access and familiarity with these practices. Digital technologies can help bridge the distance and provide transnational digital practices that afford access to the macro practices in order to allow biliteracy. The data in this study provides a glimpse of the potential yield of looking at biliteracy as part of digital, social, language and semiotic practices. Specific implications for parents and teachers are addressed in the following sections.

### **7.2.2 Implications for Practice**

This study has offered a variety of perspectives on the changing worlds of very young children in contemporary society. It has provided evidence of the growing nature of children's engagement with digital technologies and suggests that these tools can be used as support systems for developing biliteracy with young immigrant and transnational immigrant children. The study suggests the need for educators and parents to respond to the challenge this presents and provides examples of how the uses of digital technologies can inform students' literate activities.

#### **7.2.2.1 Implications for Parents**

This study calls attention to the current perceptions on the effects and value of children's use of digital technologies. Many parents view their children's use of digital technologies as sources of mere fun with no apparent educational gains. This study provides insights on how the children's use of digital technologies can be geared towards biliteracy development by providing

children with educational resources that include educational programs, cartoons and applications that are specifically designed for language development. In addition, this study can change some of the prevalent views about how digital games can be a waste of time. Alternatively, research has shown that games can foster literacy development (Gee, 2004). This study supports Gee's general findings for video gaming as a source of literacy learning and provides insights on how digital biliteracy can be achieved through everyday uses of digital technologies.

It was apparent in this study that digital technologies were directly and indirectly used as sources, and media for accessing literacy. Digital technologies made access to literacy in the children's home language possible and provided an array of materials ranging from mere texts to animated movies. Although the primary language spoken in school, English, entered their homes and prevailed among the children and their siblings, the digital practices that children engaged in (such as communicating with extended family members and watching cartoons in Arabic) afforded the children and their parents a way to maintain Arabic as their first language and also develop their literacy in English.

Parents and caregivers need to gear the use of digital technologies towards informed choices of what can contribute to their children's biliteracy and identity development. Parents can assist their children in locating resources that strengthen literacy in the home language. Parents can also engage their children in practices, digital or print, that foster their understanding of their backgrounds and cultures. In addition, parents can nurture the love of family and the importance of cultural values such as the importance of family as a central constituent of society, and the significance of maintaining family ties and home languages. Given the distant geographical positioning immigrant and transnational immigrant families experience while living in the United States, using digital technologies can be a way for performing and reinforcing these

practices.

#### **7.2.2.2 Implications for Teachers**

This study has important implications for pedagogical practices. First, it shows why teachers might want to use the digital literacies in classrooms that serve immigrant and transnational immigrant learners. Within this particular research site, the Arabic and Islamic studies curriculum featured an instruction designed for Arab learners, which valued children's Arabic literacy development and the use of Arabic as a medium of instruction. As a result, Str. Jane, who shared the same macro cultural and linguistic background with the children, was able to utilize examples and topics related to students' needs and interests. The English literacy instructor, an outsider to the immigrant community but shared the same religious affiliation as the children, utilized digital technologies in order to provide relevant instruction that attended to the children's background knowledge. The teachers used digital technologies to support biliteracy development and authorized digital resources for teaching and learning. These findings align with recommendations that González, Moll & Amanti (2005) brought forward about the values of using students' backgrounds, resources, and everyday practices to value learners' funds of knowledge, promote cultural understanding, and support engagement with the content of instruction. The teachers' use of digital technologies to connect the children to their funds of knowledge enhanced their biliteracy development and valued their home cultural understandings.

Educators need to develop curricula and pedagogy, which enable children to build on their digital 'funds of knowledge' (Moll et al., 1991) and provide them with opportunities to fully engage with the digital, social and cultural demands of the digital society (Luke and Carrington, 2002). Educators can do so by incorporating digital practices that reflect the children's cultures and background knowledge into instruction. They can organize events where

the children can celebrate their home language, customs, food and practices in order to reinforce the importance and value of their origins.

Hawkins (2002) affirms the role of teachers in engaging students in cooperative projects and how their use of constructivist instruction is fundamental for providing instruction that is enjoyable and fruitful. Beeland (2002) contends that using digital technologies in the classroom in inventive ways supports and enhances teaching and learning. Therefore, in order to provide a meaningful environment to which young learners can relate, research must consider the intriguing relationship between children's engagement with digital technologies outside school and the connectedness of their home experiences to their experiences at school.

By ignoring the role of digital technologies in the lives of young children nowadays, we might be confronting the risk of assigning our young children to an education that, although might be generally successful in providing children with experiences of the written word on paper, is not yet as successful in warranting that they are capable of tackling the multimodal, multiliterate and digital texts and practices which pervade everyday life in the twenty-first century.

### **7.3 Limitations**

Like most studies, there were limitations of this study as well as questions for future research. First, the sample size could be viewed as a limitation because of the small number of participants, only five children, their mothers and teachers. The context where the study was conducted can also be viewed as a limitation because of the small size of the school and Arab community in El Paso, compared to other communities with high concentrations of Arabs and large, well established Islamic and heritage language schools in other parts of the United States. In addition, the findings of this study are limited to children in prekindergarten who are emergent

literates. The design of the study limited my contact to only pre-kindergarten children, and did not permit me to study the digital biliteracy of older children in the other classes. Comparing the digital biliteracy practices of older children to those of preschoolers could cast ahead a picture of the ways in which emergent digital biliteracy practices can impact biliteracy development as children grow up. Moreover, this study is limited to the digital practices of a group of Arab participants (being highly educated, elite bilinguals). The digital practices of other groups of Arab immigrants and transnational immigrants might be different. Furthermore, the fact that this study was conducted with the children's mothers only can be viewed as a limitation. Fathers' opinions could be studied to examine their roles in their children's biliteracy and the effects of their engagement in their children's literacy on their own literacies. Finally, a limitation of this research is the fact that it did not directly address the subjects of power and power relations that are prevalent within gender issues or the power relations implicit in the parents' and children's decisions about which digital literacies are encouraged and which are regulated. Power relations are one of the key aspects incorporated in the New Literacy Studies theoretical framework that the digital biliteracy framework did not focus on. The limitations of this dissertation, in turn, suggest new areas for research as described in section (7.4).

#### **7.4 Directions for Further Research**

Further research is needed to study the features of digital biliteracy in Arab immigrant and transnational immigrant homes where the children bring the socially valued language, English (in the context of the United States), home and infuse it into the family's, daily language interactions. Further research can look at how Arab parents gradually acquire competence in the new language, English, when they act as peripheral participants in the interactions that their children engage in at home. Research can also look at how Arab parents' roles as literacy brokers

of the family's first language affect their literacy development in the Arabic language, particularly for those parents who continue their college degrees in the United States or those who are completing their college degrees in English in their respective countries. In addition, research may also examine the ways in which Arab children's access to literacy in Arabic through digital technologies can affect the non-linguistic aspects of the children's socialization. Further research can also study the sources of Arab children's literacy, besides their parents, friends and digital technologies that the children in immigrant and transnational immigrant families have access to when acquiring Arabic and a English simultaneously.

On a more general sphere, research could focus on how digital technologies are used by young children of other immigrant and transnational immigrant groups in the United States (e.g. Mexican, Chinese, Korean, Indian, etc.) to access heritage language, funds of knowledge and digitally develop biliteracy in their respective languages and English. The findings of similar studies could enhance digital heritage language maintenance and literacy development in different languages. They could also inform how educators incorporate digital technologies to support biliteracy development. The degree of use of digital technologies to support digital biliteracy at home might differ in individual families and different nations. In addition, spending more time with participants can methodologically strengthen studies that examine the digital literacy practices of children. I suggest prolonged engagement with the participants under study as prolonged engagements may decrease the participants' desirable behavior or actions. Moreover, the researcher's collaboration with a co-researcher who is an insider, someone who shares the target culture and can mediate cultural experiences is recommended in order to understand and analyze their behaviors and actions appropriately. Moreover, power and power relations around gender issues, and parents and children's decisions on about which digital

literacies are appropriate/encouraged and which are regulated/prohibited can also be studied to examine how these choices contribute (or not) to digital biliteracy development. Further research may also investigate the different ways students' funds of knowledge can be accessed, particularly via digital and online resources, and integrated into schools in order to promote biliteracy development of linguistic minorities in the United States.

I would like to see research focusing on Arab children in larger metropolitan areas of the United States, answering questions such as: What are the effects of emergent digital biliteracy on the children's biliteracy development in higher grades?; How do heritage language schools understand culturally responsive pedagogies for Arab children? What type of digital biliteracy strategies do the schools implement to incorporate the students' funds of knowledge into instruction?; and How do families in cities with larger concentrations of Arabs support their children's literacy development in Arabic in the presence of wider numbers of Arabic speakers? I would also like to see research that explores children's biliteracy development after they return to their native countries. Questions that research can pursue might include: How the returning Arab children are adjusted to their new context?; What role do the children play in their English and Arabic classrooms?; What strategies do their families adopt for these children's maintenance and further development of biliteracy?; and How such efforts are viewed by others in the community?. These new research agendas will generate and disseminate important theoretical and pedagogical implications that enhance our understating of diverse biliteracy development, broadening and enriching the field of literacy and biliteracy. In addition, university and government researchers will be interested in finding answers to these questions in order to guide the development of appropriate curriculum that enhances digital biliteracy development.



## **7.5 Summary and Conclusion**

This study investigated the role that digital technologies play in supporting children's emergent digital biliteracy development. The purpose of this case study was to examine home and school contexts of pre-kindergarten Arab children in Southwest Texas in relation to their use of digital technologies to develop literacy in English and Arabic. Five Arabic speaking children, their families, and teachers participated in the study. In order to understand the children's literacy practices through digital technologies, I examined the views and actions of their parents and teachers as catalysts for shaping digital biliteracy through formal and informal teaching and learning, encouraging social interactions, and supporting digital literacy. I collected data for eight months using qualitative methods, including classroom and home observations, and interviews with parents and teachers. Through parent interviews and home observations, I was able to document parents' and children's perspectives and experiences with digital biliteracy. The teachers provided data on their curriculum, materials, student participation in literacy activities, and their beliefs in the positive role of digital technologies in children's literacy development in English and Arabic. These experiences are viewed using the theoretical lenses of socio-cultural theories of language and literacy (Lave & Wenger, 1991; Lemke, 1990; Wertsch, 1991; Vygotsky, 1986). These lenses were used to explore semiotic means in the use of digital technologies to understand literacy practices in school and at home. The study also draws on these lenses to theorize the role of digital technologies in mediating culture and language maintenance, as well as transnational relationships that support biliteracy development.

The research questions that I pursued in this study addressed the use of digital technologies in relation to literacy development in two languages. The questions also addressed the use of available digital technologies and their role in young children's literacy development,

language appropriation and autonomy that the Arab children developed as they become more confident and skilled users. Through participant observation, interviews, and document collection, I analyzed how participants used digital technologies to learn a new language, and maintain their first language and home culture. I was also able to examine how participants appropriated digital literacy practices in ways that fostered transnational affiliations by maintaining prominent social conventions and sharing memories, events, and greetings, with extended family members in their countries of origin.

Understanding the role of digital technologies in Arab immigrants' and transnational immigrants' efforts to develop their children's literacy in Arabic and English is fundamental to the advancement of educational systems around the world. Teachers need to incorporate children's funds of knowledge in their classroom in order to provide responsive culturally and linguistically relevant pedagogy. Through the use of digital technologies, teachers can show care and include immigrant children in the different classroom activities at the same time as expands other children's awareness about different cultures and languages. Scholars, teachers, and parents can play a major role in providing equal access to educational opportunities and offering role models to the rest of the community. The study provides evidence for the importance of children's participation in social conventions, including participation in transnational digital environments to maintain family ties and social relationships in the home country. The children's participation in the transnational digital environments facilitated their development of digital biliteracy and their identity formation as Arab children and parents who are geographically distant from their home countries, yet are able to maintain their identities as Arabs. Through the use of digital technologies, emergent bilingual children can recognize and begin to practice

literate conventions in two languages (or more) and two distinct writing systems, important steps on the path to biliteracy.

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## **Appendix (A)**

### **INFORMED CONSENT: PARENTS**

**The University of Texas at El Paso (UTEP)**

**Institutional Review Board**

**Informed Consent Form for Research Involving Human Subjects**

**Protocol Title: “Digital Biliteracy: Digital technologies as homes for Arab Immigrant children’s biliteracy development”**

**Principal Investigator: Laila Al-Salmi**

**UTEP: Department of Teacher Education**

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You are being asked to take part voluntarily in the research project described below. Please take your time making a decision and feel free to discuss it with your friends and family. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study. Please ask the study researcher or the study staff to explain any words or information that you do not clearly understand. You have been asked to take part in a research study related to children’s development of biliteracy through digital technology and its effect on children’s ability to relate to their cultural background.

10 pre-kindergarten children will participate in this study. You are being asked to participate in the study because you are the parent(s)/guardian(s) of \_\_\_\_\_. If you agree to take part in this study, the researcher will interview you approximately 3 times between September 2013 and May 2014. The interviews will be recorded for the purpose of transcribing them and later analyzing them. In addition, your child will be observed at school and possibly at home and the researcher will informally converse with them during observations and take notes. Your responses and the notes taken during participant observations will remain confidential and there should be minimal to no risk for participating in this study. All protected measures will be taken to preserve your privacy and confidentiality. The recordings and notes will be kept in a secure place; in a locked file cabinet in the investigator's office and will be coded so that no personally identifying information is visible on them. These recordings/notes will be heard or viewed only for research purposes by the investigator and her associates and will be erased after they are transcribed.

The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to Mrs. Laila Al-Salmi at (915) 240-7865 and to the UTEP Institutional Review Board (IRB) at (915) 747-8841 or irb.orsp@utep.edu.

The answers received will assist the researcher in understanding the benefits of using digital technology in learning and retaining cultural practices. Your participation will play a role for a better understanding of the use of digital technology at school and at home and its effect on children's academic performance and cultural retention. This research will use the interviews with the parents and the teachers, participant observations in the children's classroom and possibly homes, conversations with the children at school and possibly at home and analysis of some of the children's artifacts such as pictures and screenshots taken by the researcher during participant observations, children's writings and drawings. Upon your request, the research team will also share the results of the study at the completion of the research project.

You have the option not to take part in this study. There are no direct costs to you for participating in this study. You may ask any questions you have now. If you have questions later, you may call Mrs. Laila Al-Salmi at (915) 240-7865. If you have questions or concerns about your participation as a research subject, please contact the UTEP Institutional Review Board (IRB) at (915) 747-8841 or irb.orsp@utep.edu.

Your responses will remain confidential and there should be minimal to no risk to your confidentiality. None of the information will identify you by name. All records will be destroyed upon finishing the study. The principal investigator, Mrs. Laila Al-Salmi and her associates, will be the only people with access to the data. Only average results will be reported. The results of this research study may be presented at meetings or in publications; however, your identity will not be disclosed in those presentations. If information is revealed about child abuse or neglect, or potentially dangerous future behavior to others, the law requires that this information be reported to the proper authorities

I have read each page of this paper about the study (or it was read to me). I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. I will get a copy of this consent form now and can get information of the results of the study later if I wish. By entering my name at the end of this form I am giving my consent to participate in this research.

Participant Name: \_\_\_\_\_ Date: \_\_\_\_\_

Participant Signature (consent for interview): \_\_\_\_\_

Participant Signature (consent for recording of interview): \_\_\_\_\_

Participant Signature (consent for researcher's participant observations in the school and possibly at home): \_\_\_\_\_

Name of Person Obtaining Consent: \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Appendix (B)**

### **INFORMED CONSENT: TEACHERS**

**The University of Texas at El Paso (UTEP)**

**Institutional Review Board**

**Informed Consent Form for Research Involving Human Subjects**

**Protocol Title: “Digital Biliteracy: Digital technologies as homes for Arab Immigrant children’s biliteracy development”**

**Principal Investigator: Laila Al-Salmi**

**UTEP: Department of Teacher Education**

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You are being asked to take part voluntarily in the research project described below. Please take your time making a decision and feel free to discuss it with your friends and family. Before agreeing to take part in this research study, it is important that you read the consent form that describes the study. Please ask the study researcher or the study staff to explain any words or information that you do not clearly understand. You have been asked to take part in a research study related to children’s development of biliteracy through digital technology and its effect on children’s ability to relate to their cultural background.

10 pre-kindergarten children will participate in this study. You are being asked to participate in the study because you are their teacher. If you agree to take part in this study, the researcher will interview you approximately 3 times between September 2013 and May 2014. In addition, the researcher will be conducting participant observations in your classroom 2-3 times per week, between September 2013 and May 2014. The interviews will be recorded for the purpose of transcribing them and later analyzing them. Your responses will remain confidential and there should be minimal to no risk for participating in this study. All protected measures will be taken to preserve your privacy and confidentiality. The recordings and participant observation notes will be kept in a secure place; in a locked file cabinet in the investigator's office and will be coded so that no personally identifying information is visible on them. These recordings and notes will be heard or viewed only for research purposes by the investigator and her associates. The recordings will be erased after they are transcribed.



The University of Texas at El Paso and its affiliates do not offer to pay for or cover the cost of medical treatment for research related illness or injury. No funds have been set aside to pay or reimburse you in the event of such injury or illness. You will not give up any of your legal rights by signing this consent form. You should report any such injury to Mrs. Laila Al-Salmi at (915) 240-7865 and to the UTEP Institutional Review Board (IRB) at (915) 747-8841 or [irb.orsp@utep.edu](mailto:irb.orsp@utep.edu).

The answers received will assist the researcher in understanding the benefits of using digital technology in learning and retaining cultural practices. Your participation will play a role for a better understanding of the use of digital technology at school and at home and its effect on children's academic performance and cultural retention. This research will use the interviews with the parents and the teachers, participant observations in the children's classroom and possibly homes, conversations with the children at school and possibly at home and analysis of some of the children's artifacts such as pictures and screenshots taken by the researcher during participant observations, children's writings and drawings. Upon your request, the research team will also share the results of the study at the completion of the research project.

You have the option not to take part in this study. There are no direct costs to you for participating in this study. You may ask any questions you have now. If you have questions later, you may call Mrs. Laila Al-Salmi at (915) 240-7865. If you have questions or concerns about your participation as a research subject, please contact the UTEP Institutional Review Board (IRB) at (915) 747-8841 or [irb.orsp@utep.edu](mailto:irb.orsp@utep.edu).

Your responses will remain confidential and there should be minimal to no risk to your confidentiality. None of the information will identify you by name. All records will be destroyed upon finishing the study. The principal investigator, Mrs. Laila Al-Salmi and her associates, will be the only people with access to the data. Only average results will be reported.

I have read each page of this paper about the study (or it was read to me). I know that being in this study is voluntary and I choose to be in this study. I know I can stop being in this study without penalty. I will get a copy of this consent form now and can get information of the results of the study later if I wish. By entering my name at the end of this form I am giving my consent to participate in this research.

Participant Name: \_\_\_\_\_ Date: \_\_\_\_\_

Participant Signature (consent for interview): \_\_\_\_\_

Participant Signature (consent for recording of interview): \_\_\_\_\_

Participant Signature (consent for researcher's participant observations in the school):  
\_\_\_\_\_

Name of Person Obtaining Consent: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## **Vita**

Laila Al-Salmi earned her Bachelor of Education degree in Teaching English from Sultan Qaboos University in 2004. She received her Master of Arts degree in Teaching English in 2005 from The University of Texas at El Paso. In 2010, she joined the doctoral program In Teaching, Learning and Culture at The University of Texas at El Paso.

Ms. Al-Salmi received numerous honors and awards including a Fulbright Scholarship Award, the Dodson Graduate School Research Award, a UTEP Graduate School Travel Award and UTEP Graduate School Scholarship. While pursuing her degree, Ms. Al-Salmi worked as a research associate for the Department of Teacher Education.

Ms. Al-Salmi has presented her research at international conference meetings and workshops including the Literacy Research Association (LRA), the Society of Information Technology and Teacher Education (SITE), and the Texas Association for Bilingual Education (TABE). Additionally Ms. Al-Salmi has published her research in the Arab World English Journal (AWEJ). Ms. Al-Salmi's dissertation, Digital biliteracy: Digital technologies as homes for Arab children's biliteracy development, was supervised by Dr. Patrick Henry Smith.

Permanent address: Al-Seeb  
Muscat, Oman

This thesis/dissertation was typed by Laila Al-Salmi.