FROM HOME TO SCHOOL: BRIDGING THE LITERACY GAP IN L1 WOLOF CHILD LEARNERS OF L2 FRENCH IN SENEGAL

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY in THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES (French)

THE UNIVERSITY OF BRITISH COLUMBIA (Vancouver)

January 2014

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Abstract

The relationship between first language (L1) literacy and second language (L2) learning has increasingly become an object of considerable study in the field of Second Language Acquisition. While numerous studies have been conducted on this issue in situations in which the first and second languages of literacy are related (Spanish and English: Cummins, 2000; Gonzalez, 1979; French and English Cziko, 1978), little research is currently available on how school children who are partially literate in their mother tongue learn an L2 successfully (Wagner, 1998).

This research investigates the L2 French phonological awareness, decoding and comprehension skills of two groups of sixty L1 Wolof childlearners of L2 French in Senegal. Prior to learning French, one group developed early literacy skills in Arabic (the Qur’anic group), and the other group developed no literacy skills in Wolof or Arabic (the Non-Qur’anic group). Combining both quantitative and qualitative methods, the data were collected through an odd-word-out instrument, a picture-word-identification and association instrument, a reading comprehension instrument, and a questionnaire, as well as through semi-structured interviews.

This research showed that the absence of literacy skills in either the mother tongue (Wolof) or Arabic affects learning in L2 French. That is, the Qur’anic group outperformed the Non-Qur’anic group in L2 French decoding skills and reading comprehension, except in the area of L2 phonological awareness where both groups performed at an equal level. The results also identified a strong correlation between early literacy skills developed at home or in Qur’anic school and later success in decoding and reading a French text at school.
Preface

This dissertation is an original, unpublished and independent work conducted by Moustapha Fall.

The doctoral research involved humansubjects; therefore an ethical approval was requested from the Office of Research and Ethics’ Researcher Information Services (RISe) at the University of British Columbia. The Behavioral Research Ethics Board (BREB) unit assessed the methods, risks and benefits associated with this research and found it to be in compliance with RISe’s rules and regulations. An Ethics Certificate of Approval – Minimal Risk(H11-00978) was issued.
# Table of Contents

Abstract ................................................................................................................................. ii
Preface ................................................................................................................................... iii
Table of Contents ................................................................................................................... iv
List of Tables .......................................................................................................................... xi
List of Figures ........................................................................................................................ xii
List of Abbreviations ............................................................................................................ xiii
Acknowledgements .............................................................................................................. xv
Dedication ............................................................................................................................... xvi

## Chapter 1: Introduction ........................................................................................................ 1

1.1 Research background ....................................................................................................... 5
1.2 Research targets ............................................................................................................... 13
1.3 Significance of the thesis ............................................................................................... 15
1.4 Thesis outline ................................................................................................................ 16
1.5 Conclusion .................................................................................................................... 19

## Chapter 2: Demographic and socio-linguistic profiles of Senegal .................................... 20

2.1 Demographic profile of Senegal .................................................................................. 20
  2.1.1 Brief history of Senegal .......................................................................................... 20
  2.1.2 Geography ............................................................................................................ 25
  2.1.3 Economy ............................................................................................................... 27
  2.1.4 Population ........................................................................................................... 29
  2.1.5 Religious communities ......................................................................................... 30
2.2 Socio-linguistic profile of Senegal .............................................................................. 34
2.2.1 Ethnolinguistic composition of Senegal ................................................................. 34
2.2.2 Literacy education in Senegal .................................................................................. 38
2.2.3 Linguistic cohabitations .......................................................................................... 42
  2.2.3.1 The cohabitation between Arabic and Wolof ..................................................... 43
  2.2.3.2 The cohabitation between French and Wolof .................................................. 45
2.2.4 The situation of French in post-independence Senegal .......................................... 49
2.2.5 The status of Wolof in post-independence Senegal .............................................. 55
2.3 Conclusion .................................................................................................................. 62

Chapter 3: Literature review ............................................................................................ 65

3.1 The debate over bilingualism ...................................................................................... 69
3.2 L1-L2 relationships .................................................................................................... 71
  3.2.1 Cummins’s Developmental Interdependence Hypothesis .................................. 71
  3.2.2 Linguistic transfer L1 and L2 .............................................................................. 72
    3.2.2.1 Controversies over the concept of language transfer .................................... 72
3.3 Research evidence on L1-L2 reading skills ............................................................... 74
  3.3.1 L2-reading development ....................................................................................... 75
  3.3.2 L1 reading skills transfer to L2 ............................................................................ 79
3.4 Home literacy experience and second language ....................................................... 83
  3.4.1 Home literacy and reading ................................................................................... 84
  3.4.2 Decoding skills and reading ................................................................................ 90
  3.4.3 Phonological awareness and reading ................................................................... 93
3.5 Research evidence on mother tongue education ....................................................... 98
  3.5.1 Successful experiments of mother tongue education in Africa ......................... 101
3.6 The present research ................................................................. 107

3.6.1 Research questions ................................................................. 110

3.6.1.1 Research question 1 ............................................................. 110

3.6.1.2 Research question 2 ............................................................. 110

3.6.1.3 Research question 3 ............................................................. 111

3.6.1.4 Research question 4 ............................................................. 111

3.6.2 Research hypotheses ............................................................... 111

3.6.2.1 Research hypothesis 1 .......................................................... 111

3.6.2.2 Research hypothesis 2 .......................................................... 112

3.6.2.3 Research hypothesis 3 .......................................................... 112

3.6.2.4 Research hypothesis 4 .......................................................... 113

Chapter 4: Methodology ..................................................................... 115

4.1 Research preliminaries and guidelines ............................................. 115

4.2 Population sample ....................................................................... 117

4.2.1 Gaindè Fatma Elementary School ............................................. 118

4.2.1.1 Qur’anic children population .................................................. 120

4.2.1.2 Qur’anic parent population .................................................... 122

4.2.2 Daroukhane B Elementary School ............................................. 124

4.2.2.1 Non-Qur’anic children population .......................................... 125

4.2.2.2 Non-Qur’anic parent population ............................................. 127

4.2.3 Volunteers ............................................................................. 129

4.3 Instrument .................................................................................. 130

4.3.1 Odd-one-out task .................................................................. 131
4.3.2 Picture-word identification and association task ........................................... 134
4.3.3 Reading comprehension task ........................................................................ 136
4.3.4 Questionnaire ............................................................................................... 140
4.3.5 Semi-structured interviews .......................................................................... 143
4.4 Procedure .......................................................................................................... 144
4.4.1 Odd-one-out task ......................................................................................... 144
4.4.2 Picture-word identification and association task ........................................... 145
4.4.3 Reading comprehension task ........................................................................ 146
4.4.4 Questionnaire ............................................................................................... 149
4.4.5 Semi-structured interviews .......................................................................... 150
4.5 Data analysis ...................................................................................................... 151
4.5.1 Quantitative data analysis ............................................................................ 151
4.5.1.1 Correct and incorrect scaling test ............................................................... 151
4.5.1.2 Likert scale ............................................................................................... 152
4.5.1.3 ANOVA test ............................................................................................. 152
4.5.2 Qualitative data analysis ............................................................................... 153
4.5.2.1 Semi-structured interviews .................................................................... 154
4.6 Summary ........................................................................................................... 154

Chapter 5: Results .................................................................................................... 156

5.1 Quantitative results .......................................................................................... 156
5.1.1 Phonological awareness results .................................................................... 156
5.1.2 Qur’anic and Non-Qur’anic groups ............................................................... 157
5.1.3 Decoding skills results ................................................................................ 158
Chapter 5: Results

5.1 Qur’anic and Non-Qur’anic groups

5.1.4 Reading comprehension results

5.1.5 Questionnaire results

5.1.6 Qur’anic and Non-Qur’anic groups

5.1.7 Questionnaire results

5.1.7.1 Theme one: Children’s literacy experience of reading at home

5.1.7.1.1 Qur’anic group

5.1.7.1.2 Non-Qur’anic group

5.1.7.2 Theme two: Children’s literacy experience of reading with others

5.1.7.2.1 Qur’anic group

5.1.7.2.2 Non-Qur’anic group

5.2 Qualitative data

5.2.1 Theme 3: Parents’ attitude toward the French language

5.2.1.1 Qur’anic parents’ attitude toward French in Gaindé Fatma, Touba

5.2.1.1.1 What language do you use at home?

5.2.1.1.2 What language(s) do you prefer for your child’s instruction?

5.2.1.1.3 What is your overall attitude toward the French language?

5.2.1.2 Parents’ attitude toward French in Daroukhane B in Dakar

5.2.1.2.1 What language do you use at home?

5.2.1.2.2 What language(s) do you prefer for your child’s instruction?

5.2.1.2.3 What is your overall attitude toward the French language?

5.3 Conclusion

Chapter 6: Discussion

6.1 General discussion of the quantitative results
6.1.1 Phonological awareness ................................................................. 183
6.1.2 Decoding skills .............................................................................. 188
6.1.3 Reading comprehension ................................................................. 192
6.1.4 Questionnaire with children ........................................................... 198
6.2 Summary of quantitative results discussion ........................................ 202
6.3 General discussion on the qualitative results ...................................... 204
6.3.1 Semi-structured interviews with parents in Touba and Dakar .............. 204
6.3.1.1 Parents’ attitude toward the French language in Gaindè Fatma, Touba .... 204
6.3.1.2 Parents’ attitude toward the French language in Daroukhane B, Dakar .... 206
6.4 Summary of quantitative and qualitative results discussion ...................... 207

Chapter 7: Conclusion .............................................................................. 211
7.1 Review of conclusions ......................................................................... 213
7.1.1 Strengths of research outcomes ...................................................... 214
7.1.2 Limitations ..................................................................................... 215
7.1.3 Research contributions and potential applications .......................... 218
7.1.4 Suggestions for further research ..................................................... 219

Bibliography ............................................................................................. 231

Appendices ............................................................................................... 250
Appendix A Odd-one-out-task ................................................................. 250
Appendix B Picture-word identification and association task ..................... 251
Appendix C Reading comprehension text ................................................. 252
Appendix D Reading comprehension questions ....................................... 254
Appendix E Children’s questionnaire about literacy experience and reading .... 257
Appendix F Parents’ interview about their overall attitude toward French ........................................ 258
Appendix G Correct and incorrect scale for the picture-word identification task .................. 259
Appendix H Correct and incorrect scale for the odd-one-out task ............................................ 263
Appendix I Parents’ consent form (English version) ................................................................. 267
Appendix J Parents’ consent form (French version) ................................................................. 268
Appendix K Research participants’ assent form ..................................................................... 269
Appendix L Data collection authorization form from Gaindé Fatma Elementary School .... 272
List of Tables

Table 1. Dominant ethnic communities in Senegal ................................................................. 30
Table 2. First six national languages spoken as first and second languages........................... 36
Table 3. Lexical content of French reading passage presented to participants......................... 139
List of Figures

Figure 1. Senegalese regions........................................................................................................... 26
Figure 2. Zone of Proximal Development ..................................................................................... 88
Figure 3. Mean difference in phonological awareness between Qur’anic & Non-Qur’anic groups.
.................................................................................................................................................. 157
Figure 4. Mean difference in decoding skills between Qur’anic and Non-Qur’anic groups...... 159
Figure 5. Mean difference in reading skills between Qur’anic and Non-Qur’anic groups........ 162
Figure 6. Average of literacy experience of reading at home for the Qur’anic group............. 166
Figure 7. Average literacy experience of reading at home for the Non-Qur’anic group......... 167
Figure 8. Average of literacy experience of reading with others for the Qur’anic group........ 170
Figure 9. Average literacy experience with others for the Non-Qur’anic group................... 172
Figure 10. Non-Qur’anic Wolof children's linguistic journey from home to school ............ 196
Figure 11. Qur’anic children’s linguistic journey from home to school.................................. 197
List of Abbreviations

ANSD=Agence Nationale de la Statistique et de la Démographie
ANOVA=Analysis of Variance
APA=Agence de Presse Africaine
AOF=Afrique Occidentale Française
BBC=British Broadcasting Corporation
BREDA=Bureau Régional de l’Éducation en Afrique
CA=Contrastive Analysis
CAF=Classe d’Alphabétisation Fonctionnelle
CFA=Communauté Financière Africaine
CLAD=Centre de Linguistique Appliquée de Dakar
DALN=Direction pour la Promotion des Langues Nationales
DIH=Developmental Interdependence Hypothesis
DPRE=Direction de la Planification et de la Réforme de l’Éducation
DPSS=Direction de la Prévision et des Statistiques du Sénégal
EDFOA=Éducation et Formation des Adultes
EGEF=État Généraux de l’Éducation et de la Formation
EI=Éducation Intégrée
EU=European Union
FM=Foreign Medium
GDP=Gross Domestic Product
HDI=Human Development Index
LIFE=Literacy Initiative For Empowerment
LC=Listening Comprehension
L1=First Language
L2=Second Language
MEN=Ministère de l’Education Nationale
MTM=Mother Tongue Medium
MOI=Medium Of Instruction
PDEF=Programme de Développement de l’Education et de la Formation
PC=Pédagogie Convergente
RC=Reading Comprehension
RND=Rassemblement National Démocratique
RTS=Radio Télévision Sénégalaise
RFI=Radio France Internationale
RFM=Radio Futur Média
SLA=Second Language Acquisition
SUD FM=Futur Media Sud
TVS=Télévision Sénégalaise
UNESCO=United Nations Educational, Scientific and Cultural Organization
USD=US Dollars
UPE=Universal Primary Education
ZPD=Zone of Proximal Development
Acknowledgements

I thank my thesis committee, Dr. Samuel Ortega Navarro, Pr. Gloria Onyeoziri, and Dr. Christine Rouget for their continuous support throughout the process of this doctoral research. Their penetrating questions, feedback and comments at every step of the process were inspiring; they deepened my academic curiosity and enhanced my critical thinking. I owe particular thanks to my thesis co-supervisors: Pr. Gloria Onyeoziri for deepening my knowledge into the field of Francophone Literatures, and for her sustained academic guidance, moral and financial support; and Dr. Samuel Ortega Navarro for enlarging my vision into the field of Second Language Acquisition and providing me coherent answers to my endless questions with respect, strong passion and dedication. I could not have imagined better supervisors and mentors for my PhD research.

Special thanks go to my family and all my friends (Luc Fotsing, Cheikh Abdou Lo, Abdoulaye Niane, Serigne Fallou Mbacke, Alioune Mbaye, Aliyah Seck, Papa Mbacke Dione, Beza Felke and Rachel Dekker) who encouraged me throughout the years of my education in Africa, the USA and Canada. Many thanks also go to Dr. Robert Miller from the Department of French, Spanish and Italian Studies at UBC for his insightful feedback, encouragement and continuous academic guidance, and all the teachers, staff and volunteers at Gaindé Fatma and Daroukhane B elementary schools for their help and dedication to the successful completion of this doctoral research.
Dedication

To my families: Mame Coumba Fall, Fatou Mbye, Cheikh Mbacke Fall, Serigne Mbacke Fall and to my mom, Amy Seye, and my dad, Serigne Nguig Fall, for their endless prayers, love and support.
Chapter 1: Introduction

At the beginning of the twenty-first century, literacy is a major source of concern throughout the world. Although there is a vast diversity in both the distribution and the degree of literacy in different countries worldwide, extensive research has been conducted to emphasize the crucial importance of literacy and the wide range of consequences associated with illiteracy (Cummins 2000; Garton & Pratt, 1989; McBride-Chang, 2004; Verhoeven & Durgunlu, 1998). However, it is important to recognize the multiplicity of the definitions attributed to literacy, and understand that these definitions are often grounded in specific cultural contexts, relations of power and ideologies. “Literacy”, writes Verhoeven, “can be seen as a lifelong context-bound set of practices in which an individual’s needs vary with time and place” (Verhoeven, 1998, pp.1-14). Although Verhoeven’s definition of literacy is intended to strip the word of its generic meaning by reducing it to a more culturally-bound setting, the Oxford English Dictionary defines literacy in more general terms as “the quality pertaining to a person who is able to read and write or one who has some acquaintance with literature” (Oxford English Dictionary, p.1151). Furthermore, in contemporary times, the concept of “literacy” has been used in a much broader sense to describe an individual’s ability to perform tasks that require the knowledge and use of print (e.g., computer literacy and emergent literacy).

Definitions of this nature strongly suggest that literacy has always been associated with print. Currently, a small number of studies are underway investigating whether communities of people who lack a writing system and use oral languages to communicate among themselves can be simply labeled as illiterate. In a recent study on the development of spoken and written language in children, Garton and Pratt (1989) argue that what constitutes literacy is not limited to the ability to read and write but also includes the ability to master spoken language. “A
literate person”, they write, “is someone who has the ability to talk, read, write and [listen to] another person, and the achievement of literacy involves learning how to talk, read and write [and listen] in a competent manner” (Garton & Pratt, 1989, p.2). Clearly, this definition dismisses all the previous basic definitions grounded in the sole knowledge of print or acquaintance with literature as a more scholarly activity. As the very definition of literacy continues to spark controversies, the understanding of its function has also engendered provocative scholarly thoughts in various interdisciplinary studies.

In the field of Second Language Acquisition (SLA), for example, there has been a growing interest in understanding the relationship between first language literacy and second language learning (Cummins, 1979, 1984, 2000; Ellis, 1994; Kasper, 1992; Odlin, 1989). Many linguistic minority communities are often faced with the difficult task of communicating in a dominant majority language environment without drawing on the linguistic repertoire of their mother tongue. Everyday observation tells us that learners’ performance in a second language (L2) is influenced by the language, or languages, that they already know. This is routinely obvious from learners’ foreign accent, pronunciation or writing which can bear traces of the phonology or the syntax of the language in command. In a majority language environment, L2 learners’ first language (L1) is often considered as a potential source of (un)successful transfer to the L2 acquisition, rather than as a language variety in its own right. The very nature of L2 acquisition being the direct or indirect result of cross-linguistic transfer from the mother tongue remains relatively uncontested in the SLA field. There is, however, a range of conflicting views on how and under what conditions this cross-linguistic transfer occurs in the process of learning or acquiring a new language (Alison & Gass, 2010; Lado, 1957; Odlin, 1989).
In an effort to understand the underlying differences (or similarities) between these conflicting views, many classroom teachers have been recording contrastive observations about the languages that their students know and languages that they are learning. This practice, known in the SLA field as Contrastive Analysis (CA), has allowed influential researchers such as Lado and Skinner (1957) to view second language acquisition resulting from a potential source of either a “positive” or “negative” transfer of general knowledge and concepts from the mother tongue. That mother tongue, in Cummins’ view, “represents the foundation or the schemata upon which L2 acquisition is built” (Cummins, 2000, p.179). The theoretical assumption that the mother tongue could greatly influence second language learning has sparked considerable interest within the field of Bilingual Education as well. Jim Cummins, a leading figure in this field since the early 1980s, has firmly established a relationship between mother tongue literacy and second language learning. In his Developmental Interdependence Hypothesis (DIH), he argues that overall proficiency in L1 reading plays the largest role in L2 reading, and that L2 literacy skills are dependent on the L1 because the initially acquired literacy skills will transfer to the L2. His findings on Spanish-speaking children studying in the United States concluded that there is a very high correlation between L1 reading in Spanish and L2 reading in English (Cummins, 1984).

Additional findings have supported Cummins’ view by indicating that the prerequisite for attaining a higher level of L2 competence is the continued maintenance of the L1, at least when it comes to reading skills (Gonzalez, 1977; Modiano, 1968). These studies do not stand alone—more than twenty-six studies have specifically reported that reading skills transfer from L1 to L2 (Salazar, 2006). Chapter 3 will examine more closely these publications, specifically the notion
of cross-linguistic transfer of reading skills, to provide further evidence on the nature of the relationship between mother-tongue literacy and second language learning.

It is worth pointing out that despite the full range of empirical studies that explore the issue of cross-linguistic transfer in situations in which mother tongue literacy is first developed prior to learning a second language (i.e., Spanish & English, French & English), less is known about how individuals who are illiterate in their mother tongue (e.g., Wolof children in Senegal) learn a second language. In more specific terms, there is little research evidence addressing the central question of whether the absence of literacy in the mother tongue hinders the process of developing literacy (i.e., decoding skills and reading literacy skills) in a second language. For instance, to what extent does a child’s early exposure to print material at home affect or influence their phonological awareness, decoding skills and reading comprehension at school? What levels of phonological awareness, decoding skills and reading comprehension can an L1-illiterate child achieve in L2 learning compared to an L1-literate child learning an L2? What is the effect of further exposure to reading practice in French as L2 on a child’s overall phonological awareness, decoding skills and reading comprehension at school?

Although these questions may seem irrelevant to some communities around the world where children already develop literacy in their mother tongue prior to learning a second language, they have become a major source of concern for a vast majority of post-independence African countries like Senegal in which a foreign language is the dominant medium of instruction in schools to the detriment of the mother tongue. An overwhelming majority of Wolof children in Senegal do not read and write in their mother tongue (Wolof) when they began learning the French language; only a minority of them would develop their first literacy in the Arabic language through Qur’anic schooling prior to learning L2 French.
This Doctoral thesis, which falls under the umbrella of Literacy Education leading toward Applied Linguistics, primarily investigates the acquisition of phonological awareness, decoding skills and reading comprehension skills in French of sixty Wolof children who are learners of L2 French at Gaindé Fatma Elementary School and Daroukhane B Elementary School in Senegal. The thesis introduction is broken into four parts. Part one articulates the scope of the research background. Part two addresses the aims of the research. Part three discusses the significance of the thesis. Finally, part four provides an outline of the thesis chapters.

1.1 Research background

Located in the western part of Africa, Senegal harbors a mosaic of foreign and national languages that have been cohabitating for centuries. Although the cohabitation between these languages continues to enrich the linguistic dynamic of Senegal, there is an enormous disproportion in their distribution and representation within the country. Current estimates hold that 85% of the Senegalese population speak and understand Wolof, while only a very small fraction of the total population (15%) speaks French as a second language (Diallo, 2010). This stark linguistic disproportionality is heavily felt in various primary and secondary schools in Senegal where a minority language, French, has superseded a majority language, Wolof, to be the dominant medium of instruction in almost all spheres of the Senegalese education system.

The dominance of the French language over other national languages in Senegal is rooted in the French colonial conquest that started in 1783 and lasted until Senegalese independence in 1960. This period set off the beginning of a heavy presence of French settlement in Senegal when its territories were returned to France by the British in 1763 after a long occupation. Between 1895 and 1958, Senegal was the first French colony to serve as the capital of the
Afrique OccidentaleFrançaise (AOF) governed by a French general, Faidherbe, based in Saint-Louis (Diallo, 2010).

During the French colonial period, any formal teaching of the Senegalese vernacular languages was forbidden by the local colonial authorities. The French language was the only medium of instruction in schools and the only language spoken in major government offices across the country. School children who “misspoke”, meaning they used their native language in school, were harshly punished and often forced to carry a heavy wooden object for the duration of the school day. This coercive policy of making school children speak the French language at all costs continued to be implemented in various schools in Senegal even after the country’s independence in 1960.

Faidherbe’s governorship reinforced that coercive policy with another radical policy of assimilation through which he was charged with further spreading the ways of French civilization to the local people who resided in the interior of Senegal. Faidherbe and his allies were convinced that once the school system was established, the assimilation process would be easy to complete. However, few people in Faidherbe’s cabinet knew at that time that the policy of assimilation, implemented without enabling the native Senegalese to develop literacy in their mother tongue Wolof, would have dramatic consequences on learners’ acquisition of L2 French. In that particular respect, Descemet, Faidherbe’s personal secretary, was very open to the idea of having the native Senegalese translate French words into Wolof using the Latin alphabet. This led to his publishing a forty-eight page collection of approximately 1,200 everyday French phrases translated into Wolof (Laughlin, 2008). This monograph has linguistic as well as educational implications. In it, Descemet disapproved of the fact that many Wolof children read in French without being able to resort to their mother tongue to understand certain French
concepts. He was openly critical of what he observed happening at the elementary school level where Wolof children were taught to read in the French language without developing even minimum skills in their mother tongue. The “deplorable result of this misguided policy”, writes Descemet, “is a generation of school children who may read fluently in French after a certain number of years at school without understanding a single word of what they have read” (Laughlin, 2008, p.716). Descemet’s plan to introduce a system of bilingual translation from French to Wolof and from Wolof to French to help young Senegalese children learn better at school was echoed by Jean Dard’s unequivocal views to first introduce literacy in Wolof. Whereas Descemet never pushed for educational reform to first develop literacy in the Wolof language, Jean Dard was the first schoolmaster in the French colonial circles to advocate for an educational reform in which young Senegalese natives would develop their first literacy in their mother tongue, Wolof, before learning French.

Nearly a century after Descemet’s push for Wolof-French bilingual programs for school children in Saint-Louis and Dard’s crusade for literacy education in the mother tongue (Wolof), Cheikh Anta Diop, one of the most distinguished crusaders against the teaching of a foreign language to African children, took up the same cause. During his entire life, he fiercely argued that the teaching of any foreign language was detrimental to African identity and personality. “The use of the foreign languages,” Diop writes, “is a serious obstacle in the education of the young Africans; an education in foreign languages is a waste of time because it forces learners to make double effort to assimilate the meaning of words and then, through a second intellectual effort, to capture the reality exposed by the words” (Diop, 1946, p.38).
Diop’s bold ideas in repudiating any formal education grounded in any given European languages may have helped stir a strong national sentiment toward using Wolof across the country today, but his dream of seeing an “African Renaissance” built on a stronger development of African languages throughout the schools has never become a reality in Senegal. Nevertheless, the linguistic vernacular theoretical framework which he laid out years ago might have survived the test of time, because two decades after his passing, it has resurfaced. His call for the teaching of national languages in elementary schools in Senegal has been resurrected by UNESCO experts who, having major legitimate concerns over stagnant illiteracy rates in developing countries, urged many African countries like Senegal to support education in their own national languages:

It is axiomatic that the best medium for teaching a child to read is his mother tongue. Psychologically, it is the system of meaningful signs that in his mind works automatically for expression and understanding. Sociologically, it is a means of identification among members of the community to which he belongs. Educationally, he learns more quickly through it than through an unfamiliar medium. (UNESCO, 1953, p.11)

In response to the UNESCO report and the strong political pressure pioneered by Cheikh Anta Diop, Senegal took the unprecedented step of ratifying a constitutional amendment in 1971. The amendment recognizes six major languages as the national languages of the country. Its decree no.72-862 stipulates the following:

As long as we, the Senegalese people, continue to teach our children a foreign language regardless of the language, without teaching them first their mother tongue, our people will remain alienated. It is of crucial and urgent importance that the Senegalese people
Despite the flamboyance in the rhetoric, the real application of this amendment and subsequent educational reform policies have yet to be felt in Senegalese elementary schools. Senegal continues to experience a rising rate of illiteracy in Wolof and French, and alarming numbers of drop-out students coupled with unprecedented low academic performances at the elementary level. According to the Direction de la Prévision et des Statistiques, 67% of the Senegalese under 20 years of age are illiterate in all languages and 59.6% of them do not read and write in French (Direction de la Prévision et des Statistiques, as cited in Diallo, 2010).

Subsequent recent studies conducted by Africa Focus in September 2010 show more alarming evidence of reading difficulties in French encountered by children at the end of their first and second years at the elementary level. After conducting 680 evaluations in which 50 principals and 70 instructors were interviewed in 10 regions across Senegal, Africa Focus’s report highlights more serious concerns about the young children learning L2 French: 1 out of 5 children at the end of their first and second year are not able to read a single word in a French text. In one of the tests administered by Africa Focus, pupils were presented with 687 words, only 123 of which were orally read well (Le Soleil, 2010, p.27).

Recently, the Senegalese government has taken additional steps to address this literacy gap and to alleviate children’s difficulties in reading the French language. It established “La Case Des Tout Petits” —a literacy program targeting pre-school age children. However, the implementation of La Case Des Tout Petits has not yielded major learning outcomes among pre-school children in Senegal. Two main reasons explain this failure. First, in pre-schools across the country, children are still taught to develop basic reading skills in a foreign language,
Second, the program fails to consider the vast linguistic and cultural differences apparent in Senegal. That is, there are some ethnic groups (i.e., Wolof, Serere) across Senegal who consider French as a threat to their cultures and minority languages. More precisely, the city of Touba, which is predominantly Murid, has been very reluctant in participating in the Senegalese government’s widespread literacy campaign which promotes literacy in the French language. Almost all children enrolled in Touba elementary schools develop their first literacy in Arabic prior to learning French. As a result, the authorities within Touba have been operating on the fringe for quite some time and still continue to oppose any establishment of French schools in the city. Touba is home to only two struggling French elementary schools in the midst of a plethora of Qur’anic schools across the city. The current situation of schooling in Touba contrasts with the situation of schooling in many schools in other cities (e.g., Dakar) across Senegal where a significant number of children start their literacy in French. This sharp discrepancy between the profile of schools in Touba and that of Dakar is fully addressed in chapter 4.

Despite major efforts and resources directed toward the promotion of literacy in foreign languages (i.e., French and English) across Senegal, government authorities and language policymakers continue to overlook the fundamental question of how well Wolof children can learn to read in French when they are still illiterate in their own mother tongue. While Senegal continues to implement a carbon copy of the language policy inherited from France up to the present day, the rising level of children’s academic failure in reading comprehension in French at the elementary level is indicative of a lack of literacy skills grounded in the mother tongue.

Further examination of the major research findings on the issue of literacy in the mother tongue over the course of the past decades reveals a gloomy picture of the current language education landscape of Senegal. Perhaps most importantly, these findings have raised many red
flags in the Senegalese education system’s continuing failure to meet the needs of children at the elementary school level. It then becomes clear that there is a widening literacy gap between home (mother-tongue) literacy and school (French) literacy that, if not addressed properly and swiftly by the current authorities, will continue to cause major academic setbacks for a vast majority of Wolof learners (Non-Qur’anic) who develop no literacy in their mother tongue compared to a small minority of Wolof learners (Qur’anic) who at least began their first literacy in Arabic through Qur’anic schooling prior to learning L2 French. It is worth noting that the Senegalese Ministry of National Education (MEN) ranks Arabic as a third language after French (official language of Senegal), but, in reality, Arabic is not always the third language for the Qur’anic children who develop their first literacy in Arabic prior to learning French. These Qur’anic children are exposed to the Arabic language very early on, therefore, from a linguistic angle, Arabic still serves as an additional first literacy in the order of acquisition in relation to French and Wolof to a certain degree. We will use the terms “Qur’anic and Non-Qur’anic” in our research for linguistic purposes only to simply distinguish children who develop early literacy skills in Arabic prior to learning French from children who may not get literacy skills in Arabic until years later.

The absence of literacy in the mother tongue hinders literacy in the second language (French). That is, Wolof children (Non-Qur’anic) who had neither developed literacy in the mother tongue (Wolof) nor in a third language (Arabic) would not perform as well in tasks of L2 French phonological awareness, decoding skills and reading comprehension compared to other Wolof children (Qur’anic) who develop a form of literacy in Arabic through Qur’anic schooling. In that respect, we would hypothesize that:
1. Early experiences with sound discrimination in Arabic through the Quran enhance children’s L2 French phonological awareness at school. Thus, Qur’anic Wolof children will show a higher level of L2 French phonological awareness compared to Non-Qur’anic Wolof children. More precisely, Qur’anic children more so than Non-Qur’anic children will be more accurate at discriminating actual French words whose vowel and consonant sound structure pattern into similar rhyme sequences vis-à-vis words whose sound structure do not fit such rhyme sequences.

2. Early exposure to print at home or through Qur’anic schooling (e.g., playing letter or word games, learning the alphabet, using books) enhances decoding skills at school. Thus, Qur’anic Wolof children will show a higher level of decoding skills compared to Non-Qur’anic Wolof children at school. More precisely, Qur’anic children with their early decoding skills experience in the Qur’anic text will be more accurate than the Qur’anic children in decoding a set of words in French and associating them with their corresponding visual referents.

3. Lack of reading skills in the mother-tongue (Wolof) at home (e.g., book sharing, storytelling, parents reading to children) or in Qur’anic school (e.g., daily recitation and reading of the Quran) hinders the acquisition of reading comprehension in L2 French at school. Thus, Qur’anic Wolof children will show a higher level of reading comprehension compared to Non-Qur’anic Wolof children. In other words, Non-Qur’anic children, because of their lack of reading skills in Wolof and Arabic, would not be able to transfer any reading skills to the L2 French reading comprehension task.

4. Parental intervention to help children decode and read at home has significant positive impact on children’s decoding and reading at school. Thus, Qur’anic children who get
help from their parents to decode and read the Qur’anic text at home will most likely outperform the Non-Qur’anic children who seem not to have that opportunity at home.

The next part of this chapter establishes the primary targets of the research and reframes the theoretical argument upon which the research questions are based. It also pinpoints major ideas that will inform the subsequent chapters of the thesis.

1.2 Research targets

The primary focus of this research is to investigate the phonological awareness, decoding and comprehension skills in L2 French of two groups (i.e., Qur’anic & Non-Qur’anic) of sixty L1 Wolof learners of L2 French in Senegal. Most Wolof children in Senegal develop their first literacy in a foreign language, either French or Arabic, in the absence of literacy in their own native language of Wolof. The Wolof language is primarily oral, and even though a writing system has recently been developed, children still do not read and write in their first language. They are raised to be functional in two language skills (i.e., listening and speaking in Wolof) and, later on, they learn to read and write in French as a second language in school. Therefore, the absence of literacy in the mother tongue for these children hinders their phonological awareness, decoding skills and reading comprehension in French as an L2. This is mainly because they have no previously-acquired reading and writing skills which they could potentially transfer from their mother tongue to the second language. A minority group of Wolof children who acquire literacy in Arabic through Qur’anic schooling prior to learning French may not have difficulty in the areas of phonological awareness, decoding skills and reading comprehension in L2 French because they acquire literacy skills in Arabic that they would transfer to L2 French. In that particular respect, this thesis seeks to find answers to the following questions when comparing these two groups:
1. How do Wolof children’s early experiences with sound discrimination in Arabic through the Quran reflect on their L2 French phonological skills in French (i.e., phonological awareness) at school?

2. To what extent does Wolof children’s lack of early exposure to print in their first language at home or Qur’anic schooling (i.e., Non-Qur’anic children) affect their decoding skills in French?

3. What levels of reading comprehension do Non-Qur’anic Wolof children achieve in L2 French reading comprehension by the end of their first year of school compared to Qur’anic Wolof children at school?

4. To what extent does parental intervention to help children decode and read at home affect children’s decoding and reading skills at school?

The following list of ideas will constitute the basis of the thesis chapters as a whole:

- introduce the demographic and socio-linguistic landscape of postcolonial Senegal,
- assess the overall literacy education and linguistic cohabitations in pre/post-colonial Senegal,
- discuss the current status of French and its representation in the linguistic landscape of “post-colonial” Senegal,
- describe the status of national languages (Wolof in particular) and their representation in the linguistic landscape of “post-colonial” Senegal,
- revisit the controversies over bilingualism and the concept of cross-linguistic transfer and L2 reading development,
- review Cummins’ major work on the Developmental Interdependence Hypothesis (DIH) between the first language and the second language,
• review the theoretical framework with respect to the relationship between home literacy experiences and second language learning,

• evaluate and contrast the major difficulties associated with the learning of a second language between Qur’anic and Non-Qur’anic Wolof learners of L2 French,

• provide major solutions and suggest new strategies to improve children’s literacy in Senegal,

• discuss the limitations of the study and suggest new possibilities for future academic research.

The next part of this chapter articulates the significance of the research in the context of Senegal and beyond, by discussing the potential contributions of this particular research to future academic research and by providing an account of how the outcomes of the research can be used to address the issue of illiteracy in Senegalese schools.

1.3 Significance of the thesis

This research is the first of its kind in Senegal to go further in linking mothertongue literacy to the successful learning of a second language. It specifically addresses the central issue of how illiteracy in the mother tongue can lead to difficulties in acquiring phonological awareness, decoding skills and reading skills in a second language. A successful acquisition of decoding skills and reading skills in French is intrinsically linked to a strong literacy in the mother tongue and a widespread exposure to print materials at home, at school and within the language community of Senegal. In that particular respect, there are both linguistic and socio-linguistic implications involved in the process of learning a second language. Thus, this research will bring contributions on two major fronts.
On the one hand, the results of the research will be shared with Senegalese government authorities, policy makers and language planners in an attempt to get them to follow the examples of many African nations (i.e., Nigeria, Zimbabwe) and start building a new curriculum which will mandate early literacy education in the mother tongue or encourage massive early literacy in the Arabic language prior to learning French. The purpose of such a new curriculum would be to enable Wolof learners of L2 French to read and write in Wolof prior to learning a second language, namely French. This would mean that national languages such as Wolof, Serrere, and Pulaar will be taught in the elementary schools in Senegal in conjunction with programs that encourage home literacy.

On the other hand, this research will contribute significantly to the literature, allowing for more research into understanding the complex nature and significance of the relationship between mother tongue literacy and second language learning. It may also serve as a blueprint for other hesitant African nations to start harnessing their linguistic potential and develop new language policies, which not only include the teaching of foreign languages, but also allow more room for the teaching of national languages.

The next part of this chapter provides a brief description of the content and central theme of each chapter.

1.4 Thesis outline

Chapter 1: Thesis theoretical framework and introduction

The thesis introduction first contextualizes the research by giving the theoretical framework and the specific hypotheses it intends to test. It then discusses the thesis’s central focus and addresses the research questions it seeks to answer. This thesis introduction also discusses the significance of the research on two fronts: (1) to push for literacy education reform
at the elementary level in Senegal and (2) to contribute to the SLA literature by providing a broader understanding of the impact(s) of mother tongue illiteracy on second language learning. It finally provides an outline of the thesis chapters followed by a general conclusion.

Chapter 2: Demographic and socio-linguistic profiles of Senegal

Chapter two is a general introduction of the republic of Senegal; its demography and socio-linguistic composition. It begins first by providing an in-depth presentation of the general history of pre-colonial Senegal, its geographic location, current population, economy and religious communities. It then discusses the ethnolinguistic composition of Senegal, analyses the current Senegalese stand on literacy education and evaluates the linguistic cohabitations between Arabic, Wolof and French during colonial and “post-colonial” Senegal. Chapter two ends with a general conclusion summarizing the central themes discussed throughout the chapter.

Chapter 3: Review of current literature

Chapter three provides a broad overview of research conducted on the relationship between mother-tongue literacy and second language learning. More specifically, the chapter begins by revisiting the debate over bilingualism and repositioning Cummins’ major work on the general controversy over mother-tongue literacy and second language learning. It then discusses Cummins’s Developmental Interdependence Hypothesis (DIH) and other major studies conducted in the SLA literature on the notion of cross-linguistic transfer and reading skills (i.e., Lado, Skinner, Cummins, Cook, Odlin, Ellis and Gass). Chapter three finally discusses research on home literacy experience and second language learning and the successful impact that mother tongue literacy has on second language learning in a few countries in Africa.
Chapter 4: Research methodology

Chapter four first provides a very detailed account of the research preliminaries and guidelines, research population sample’s geographical location, school curriculum, gender and age groups. It then discusses the instruments that were used to test the hypotheses. It lastly describes the procedure of research by articulating the context in which the tasks were administered to the children (i.e., each participant’s own involvement and under what conditions he or she was performing the task in the classroom).

Chapter 5: Results

Chapter five brings together all the research details of the data collected on the ground, relying heavily on quantitative analysis. Using figures and charts, it first reports the research findings by providing a detailed account of the results and outcomes for each task administered to each participant. It then ends with a conclusion summarizing the statistical results and outcomes of the quantitative data.

Chapter 6: General discussion

Chapter six offers an overall analysis and discussion of the findings presented in chapter five. It first provides a general discussion on the quantitative results of the tasks administered to participants (i.e., phonological awareness, decoding skills and reading comprehension). It then discusses the general qualitative results of the same tasks and interprets the narratives obtained from the semi-structured interviews conducted with research participants. Chapter six ends by providing a general conclusion about the interpretation of the research findings.
Chapter 7: Conclusion and limitations of the research

Chapter seven concludes the thesis. It first provides a brief review of thesis conclusions by discussing the strength and limitations of the research and directing attention to the areas where more academic research needs to be conducted on the issue of literacy in Senegal. It then provides major suggestions for the potential applications of this research in the context of Senegal and beyond.

1.5 Conclusion

The previous pages have provided a comprehensive introduction to this doctoral thesis, the theoretical framework that the research rests upon, and a contextual background to the research itself. This introduction has set forth the primary targets of the research and identified a range of research questions that the study is seeking to answer. It has also outlined a working hypothesis tested in elementary schools in the cities of Touba and Dakar. It has shown the significance of this research for Wolof children who are learners of L2 French in Touba and Daroukhane B, and has discussed its major significance on various fronts. Furthermore, it has provided a descriptive analysis of what each chapter is about and the main goal that each of these chapters is striving to achieve.

Chapter 2 presents the demographic and socio-linguistic composition of Senegal. It provides an in-depth look at the linguistic history of Senegal before, during and after French colonialism. It also discusses the major language policies under various Senegalese governments from 1960 until today.
Chapter 2: Demographic and socio-linguistic profiles of Senegal

This chapter begins with a general discussion of Senegal’s pre-colonial history, geography, demographics, religious communities and literacy education. This data will provide the backbone for understanding the scope of Senegalese linguistic history, and make it possible to examine the post-colonial complexity of the linguistic cohabitation between French and other major national languages. This chapter is important to the thesis as it contextualizes the research by discussing the current socio-linguistic landscape of Senegal in relation to the country’s pre-colonial history. It is worth noting that this chapter will reference French and Wolof citations, therefore all translations from the French and Wolof languages to the English language are mine unless otherwise indicated.

2.1 Demographic profile of Senegal

2.1.1 Brief history of Senegal

Geographically, Senegal was ideally situated for trade between three major civilizations: Black-African, Arab-Islamic and Western. European explorers from several nations realized early on that Senegal would be an indispensable port of triangular trade. Colonialists and adventurers were drawn to Senegal as early as 1444 and 1445, when the Portuguese first arrived and opened up commercial links between the interior of Senegal and the rest of the African continent (Ngome, 2009). The Portuguese were followed by the Dutch in 1588, the British in 1763, and finally, by the French in 1815 (BBC News, 2012; Crowder, 1962; Diallo, 2010; Gaucher, 1968). It must be noted that prior to becoming a sovereign state in 1960, the geographic area that is now known as Senegal consisted of a collection of scattered individual kingdoms. These kingdoms, mostly known throughout history as pre-colonial empires, were given ethnic names such as Baol, Cayor, Jolof, or Walo. The Jolof Empire, ruled by the Wolof ethnic group,
is considered by many historians to be the oldest of all the empires in the pre-colonial history of Senegal (Diallo, 2010). Although these pre-colonial kingdoms\textsuperscript{iv}, for the most part, enjoyed relative peace, they were often at the mercy of wars and political showdowns staged in an effort to garner more land and prestige.

Europe’s repeated attempts at conquering Senegal, from the early fifteenth century to the end of the nineteenth century, not only contributed to a disruption of the relative peace among these pre-colonial empires, but also shook the very foundations of their social, economic, cultural, and educational structures (Ngome, 2010). Consequently, these pre-colonial empires became increasingly important as places of resistance and mediation or what McLaughlin calls the “Contact Zone” or “Lieux de Colonization.” (McLaughlin, 2008, p.713). McLaughlin further addresses this in her 2008 article by stating that:

Each of the colonial cities has its own unique history. They are, to be sure, often histories of economic exploitation and slavery, but they are also histories of cultural métissage where new forms of identity, new cultural practices, and new languages came into being. (McLaughlin, 2008, p.713)

In her analysis of these “Contact Zones”, McLaughlin takes a rather careful and balanced approach in her descriptions of the early cohabitation between the indigenous people and the European settlers. Historians too frequently use the expression “cultural métissage” to characterize the period of early contact between colonists and colonies during colonial times. This generic term does not accurately address the notion of a culture existing prior to colonial contact. In other words, it does not identify a period where there was no real mixing between the two groups. At the dawn of the colonial period, specifically in the context of Senegal, the “cultural métissage” suggested by McLaughlin and other historians was far from being an
obvious reality. Rather than a “cultural métissage zone”, the early contact between the colonists and the Senegalese indigenous population was marked by an atmosphere of mutual hatred, defiance, demonization, disintegration, mistrust, and political calculation. For example, by making Senegal the capital of *Afrique Occidentale Française*, also known as French West Africa, between 1895 and 1950, the French colonists intended to stamp out early resistance using an explicit policy of “cultural métissage” and assimilation. The French brought to Senegal an overt assimilation policy grounded in essentialist and condescending racist ideology. German professor and ethnologist Johann Blumenbach’s pseudo-scientific theory asserting that all the peoples of Europe belonged to one white race was widely received in the early 19th century. His color coded classification of races—white being at the top, followed by brown, yellow, and black and red at the bottom—created a class hierarchy that was used to justify slavery, racism and colonization on a global scale (David, 2011 as cited in Gobineau, 1855). French ethnologist Joseph-Arthur Gobineau later refined Blumenbach’s color-coded system to lend more weight to the French and British in their claim to have been invested with the “godly” mission of “civilizing” Africa (Lehmil, 2007 as cited in Blumenbach, 1752-1840). Gobineau even went further, in his published work on *Les Inégalités des Races Humaines*, observing that the existing hierarchy between the black race and the white race has even manifested itself in the inequality between their respective languages (Gobineau, 1855).

This color doctrine associated with a linguistic hierarchy also provided further groundwork for renowned anthropologists and biologists, such as George-Louis Leclerc Buffon, to engage in an ugly battle to justify the validity of sustaining the Europeans’ civilizing mission. Lehmil’s work provides extensive analysis on how the European colonists later used the “race
card” to justify the racism dispensed during their colonial expeditions in Senegal and beyond. As Lehmil explains:

Different du Même qui caractérise l’uniformité de la race blanche, l’Autre, le primitif, est considéré comme une étrangeté biologique que le monde occidental n’hésite pas assujettir (Lehmil, 2007, p.24)[Different from the same who characterizes the white race, the other, the primitive, is considered as the biological stranger whom the West does not hesitate to subjugate]

Although we agree with McLaughlin that new forms of identities and cultural practices were coming into play, it took quite a long time before the very idea of “cultural métissage” even began to be accepted in the general discourse. Initially, this idea of “cultural métissage” was rejected by both sides. For example, while many French settlers felt superior to the indigenous people, many Senegalese religious families and influential Marabouts who practiced peaceful resistance advised their disciples to refrain from participating in French schools or French-established education programs. In response to the lack of involvement from the indigenous communities, the French colonial authorities launched a host of school programs (i.e., schools of Hostages; schools for the Sons of Chiefs; secular schools, and missionary schools) to reverse the overwhelming tendencies of resistance from these communities (Ngome, 2009).

The belief of the French colonial authorities in establishing this targeted education policy was that once the first chiefs and families were assimilated, access to the remaining population would be easier, and the assimilation process would be expedited. As a matter of fact, France’s historical method of colonization, which was known as “direct rule”, vastly contributed to the maintenance of a cultural inferiority-complex among the colonized. Most significantly, it has led to the cultural and linguistic alienation of the indigenous people of Senegal. The “plan of
colonization” that France and its European allies crafted during the Berlin conference had mandated the suppression of culture and indigenous languages. The imposition of a “French only” policy in all schools across Senegal for more than a century not only exemplifies this but also acts as testimony that the French colonists were unreceptive to any idea of promoting indigenous languages. Pierre Dumont’s 1983 thesis, entitled *Le Français et les langues africaines au Sénégal*, provides an accurate and detailed description of the nature of that cultural and linguistic alienation. According to Dumont, the colonial period in Senegal was marked by a total absence of pedagogical adaptation to situations in which French was not the language of those who taught or those being taught (Dumont, 1983).

Surprisingly, nearly sixty years since the end of French colonialism in Senegal, the plan of colonization continues to affect current political decision-making, especially with regard to socio-economic stratification and language policy. Most significantly, Senegal has maintained a carbon copy of the French colonial education policy and planning. The structure, types of qualifications, grading scales, and examining systems of the Senegalese education system all still reflect the former French colonial system of education (Diallo, 2010). Consequently, several primary schools in Senegal are experiencing a host of issues including high dropout rates and systemic academic failure for early childhood education.

In the following section, we will discuss the demographic profile of Senegal, its geography, economy, population and main religious communities and leaders whose influence are considerable in the socio-linguistic landscape of Senegal.
2.1.2 Geography

Senegal is located in the western part of Africa. The country is bordered on the North by Mauritania, on the East by Guinea, and on the South East by Guinea-Bissau. To the West, Senegal is defined by approximately 500 kilometers of Atlantic Ocean coastline (Diallo, 2005; Ngome, 2009; Sall, 2009). Senegal stretches over a little less than 76000 square miles, and its geophysical surface is comparable to that of Jordan and Sierra Leone. With only 35 inhabitants per square mile, Senegal is a densely populated country, but it displays certain geographic disparities between regions. For example, Dakar, where one of the schools participating in this study is located, is the most densely populated city, with roughly 2,707 inhabitants per square mile. Dakar is the capital of Senegal and it accommodates 21.6% of the country’s total population on only 0.3% of the country’s total land area (Diallo, 2010).

This enormous disparity led to the previous government engaging in vast decentralization campaigns across the country. For example, the Decentralization Law\textsuperscript{viii}, enacted in March 1996, transferred most government power and jurisdictions to rural communities across Senegal (BREDA; Bureau Régional de l’Éducation en Afrique, 2009). It is worth noting, however, that since its enactment, this Decentralization Law has not yet yielded any significant results on the ground. Dakar still continues to experience a massive migration of people from the rural areas to the capital in search of jobs and a better standard of living. Despite a new administrative decree (2008) to further divide Senegal into 14 regions, all the major businesses, government and international agencies are heavily concentrated in Dakar (see Figure1).
In terms of climate, Senegal has a 4-5 month rainy season, which technically begins in June, and ends in October, and a very dry season lasting for roughly 7 months. Whereas the southern part of Senegal usually gets most of the rain due to its heavy forestation, the northern part is often struck by droughts and famine. In the past few years, efforts have been made at the national level to fight these droughts and famine with vast forestation campaigns. Recently-elected president Macky Sall urged his government to increase awareness on the dangers of
deforestation and strongly recommended the “reboisement massif” or “massive reforestation” of millions of trees for the upcoming 2012 rainy season.

2.1.3 Economy

Like most West African states, Senegal’s economy is largely based on agricultural products, such as peanuts, cotton, rice, watermelon, sugar cane, and millet, among others. The agricultural sector makes up nearly 30% of the Senegalese Gross Domestic Product (GDP). The industrial sector, essentially based on phosphate, is not well developed and only constitutes 18% of the GDP, according to the Direction de la Prévision et des Statistiques (Senegalese Directory for Forecasts and Statistics, 2003, as cited in Diallo, 2010, p. 23). While the world economic crisis of 2008-2009 contributed to the slowing down of the Senegalese economy, the slow economic recovery of 2010 has helped the Senegalese economy grow. According to the Agence Nationale de la Statistique et de la Démographie (ANSD; National Agency for Statistics and Demography), the growth rate of Senegal’s GDP went from 2.1% in 2009 to 4.1% in 2010, which shows a 2% yearly growth rate (ANSD, 2012, p.44).

Fishing and tourism are also key sectors in the Senegalese economy. According to the Direction de la Prévision et des Statistiques du Sénégal, fishing makes up 8% of the GDP and tourism, 6%. Cattle-farming used to be an important factor in rural areas in Senegal, but due to the scarcity of rain and the progression of salted land; this activity has significantly slowed down in recent years (Direction de la Prévision et des Statistiques du Sénégal, 2003, p.7).

For decades, previous governments have been seeking ways to improve these sectors, particularly tourism, to attract international business and visitor income. In addition to the traditional trading partnerships with France and other European Union countries (EU), Sénégal has also been developing trading partnerships with emerging economic giants, such as China,
India, and Brazil. Between 2006 and 2007, imports from the EU, particularly from France, significantly dropped from 29.75% to 18.52% (Agence Nationale de la Statistique et de la Démographie, 2007, p.51).

This sharp drop was an indication of Senegal’s willingness to diversify its business partners and traders. As an example, in 2007, Emirati group took over the management of the port of Dakar from the Bollore Group, a well-established French company. This takeover was historical in that the Bollore Group had been operating in Senegal since colonial times (Diallo, 2010).

This process of decolonization and diversification was made more manifest under Abdoulaye Wade with the building of the 14 billion Community Francophone Africaine (CFA) Monument de la Renaissance Africaine [Monument for the African Renaissance]. Although this monument has outraged many poverty-stricken residents, religious figures in Dakar and the residents of the rural areas in Senegal, it was meant to communicate a sense of African nationalism and freedom. As an African nationalist, Wade intended to revive the African Renaissance theory\textsuperscript{viii} coined and mainly spearheaded by Cheikh Anta Diop in the early 1950s. But for his critics, it was another way of adding to the public debt, which amounted to $2 billion USD in 2007 (Direction de la Prévision et des Études Économiques, 2007, p.13).

Certainly for many Senegalese economists, the overall economic circumstances of Senegal should not have allowed for the construction of a 14 billion CFA monument, as the country ranked 156\textsuperscript{th} out of 177 on the Human Development Index (HDI; Human Development Report 2007-2008, p.231 as cited in Diallo 2010, p. 23). The HDI calculates these statistics using scales that combine a range of elements, such as life expectancy, adult literacy, and education. It must be noted, however, that the HDI often falls short in assessing the full complexity of Human
Development because other variables, such as socio-cultural and geographical elements, are often not taken into consideration. Since the methods for measuring Human Development can vary from country to country, its application should be relativized.

In a nutshell, the economic aspirations and challenges of present day Senegal have tended to influence the linguistic and educational priorities of the families whose children participated in our study. In addition to the linguistic component we investigated in our study, the socio-economic situation of these children and families was also an important factor we took into consideration.

2.1.4 Population

In 1970, the Senegalese population was estimated at 4,395,028, with an urban growth rate of 30%. In 2006, the total population was estimated at 11,077,484, with an urban annual growth rate of 47% (Direction de la Prévision et des Statistiques, 2008). Over a 36-year period, the population has almost tripled. In 2011, current estimates provided by the US State Department’s Bureau of Statistics in Senegal hold that Senegal has a population of 12,643,799 with an annual growth rate of 2.5% (National Agency for Statistics and Demography, Directory for Literacy & National Languages, 2009). Other current estimates from the Direction de la Prévision et des Statistiques estimate that by 2015, Senegal will have a total population of 13.7 million (Direction de la Prévision et des Statistiques, 2008).

The main ethnic groups of the country are the Wolof, who comprise 43% of the population, followed by the Pulaar and the Toucouleur, who collectively represent 25.2%, and the Serere ethnic group (with dominant numbers in Fatick), which makes up 13.8%. The Jola, who live mostly in the southern part of Senegal, represent roughly 5% of the total population. These figures provided by the US State Department conflict somewhat with the figures given by
the *Direction de la Prévision et des Statistiques of 2004*. (see Table 1 on the dominant ethnic groups in Senegal).

**Table 1.** Dominant ethnic communities in Senegal

<table>
<thead>
<tr>
<th>Dominant Ethnic Communities</th>
<th>Percentage of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolof (Including Lébou)</td>
<td>44.5%</td>
</tr>
<tr>
<td>Pulaar</td>
<td>25.2</td>
</tr>
<tr>
<td>Serrere</td>
<td>13.8</td>
</tr>
<tr>
<td>Jola</td>
<td>5.0</td>
</tr>
<tr>
<td>Mandinka (including Sossé)</td>
<td>3.9</td>
</tr>
<tr>
<td>Soninké</td>
<td>1.6</td>
</tr>
<tr>
<td>Other</td>
<td>5.9</td>
</tr>
<tr>
<td>Sum</td>
<td>100</td>
</tr>
</tbody>
</table>

Source. Direction de la Prévision et des Statistiques (2004, p.33)

Among the 30 languages spoken in Senegal, only 6 are used for daily conversations. The remaining 26 languages are considered all endangered languages. Wolof is spoken almost everywhere in the country; Serere is mainly spoken in Thies and Kaolack; Pulaar is spoken in Saint-Louis and Kolda; Soninke is spoken in Tambacounda; and Mandinka and Jola are mostly spoken in Zinguinchor (Ngome, 1999).

### 2.1.5 Religious communities

Senegal is a predominantly Muslim country, with 94% of the population belonging to one of the four schoolsix practicing the following basic five tenets of Islam: belief in One God and the prophet Mohammed; praying five times a day; giving Zakaat (alms) to poor people; fasting
during the month of Ramadan; and going on a pilgrimage to Mecca at least once in a lifetime (Ngome, 2010). The remaining 5% is made up of Christians (Roman Catholics comprise 4% of the Christian total) and other denominations (1%).

While Islam made its first appearance in Senegal as early as the 7th century, by the early 11th century, Islam was already well established in various areas in Senegal. The expansion of Islam was so rapid that, before colonization began, it had reached almost all areas in West Africa (Diallo, 2010). Even though West Africa had many well-known Islamic states in pre-colonial times (such as the Futa Toro Empire in Senegal, the Macina and the Mali Empires in Mali, the Sokoto Caliphate in Nigeria, and the Kingdom of Futa Jallon in Guinea) its spread to the interior of Senegal was facilitated by the powerful and large Sufi brotherhoods such as the Qadriya, Tijania and Muridiyya (Hassene, 2008). Each of these Turuq, (Arabic singular, Tarîqa, or religious order or brotherhood) formed a very solid brotherhood that was strongly bonded to their temporal and spiritual leader or xalîfa (from Arabic khalîfa, caliph).

The Qadriya tariqa was the first one of these brotherhoods to reach and spread across Senegal, led by the spiritual Sufi leader, Sheikh Abddel Kadr El-Jilani (1077-1166). Although Qadriya was the first tariqa to be introduced into Senegal in the early 12th century, it is still not as widely spread as the Tijaniya or Muridiyya communities. It must be noted that these religious communities entertain peaceful relationships based on a strong Islamic brotherhood bond.

While the Tijaniyya tariqa was founded by Cheikh Ahmad Tijani in 1798 in Morocco, it was first introduced to Senegal by Al-hajj Omar Fouwti Tall, a pioneer in the introduction of Tarîqa in Sub-Saharan Africa (Wright, 2005). It was later widely spread by Al-hajj Malick Sy (1855-1922) across several regions in Senegal. Today, the Tijani community is predominantly present in the south-eastern parts of Senegal, mainly in the Tivaouane and Kaolack areas.
The Muridiyya tarîqa, one of the largest tarîqa after the Tijani community in Senegal, was founded by Muslim mystic and spiritual leader, Cheikh Ahmadou Bamba. Most of the followers of the Murîdiyya tarîqa live in Touba, a city of approximately 300,000 people (Ross, 1995). Although there are no official figures available for the population of Touba, current estimates hold its population to be roughly 3 million (Le Soleil, 2011). One of the schools participating in our study is located in Touba. Like the Qadriya and Tijaniya communities, the context in which the Muridiyya came to be was marked by the French colonial assimilation policy used as a means of suppressing local cultures and religious beliefs. Cheikh Ahmadou Bamba (1852-1927) waged a non-violent battle in which he challenged the very foundation of the French colonial policy of linguistic and cultural assimilation.

His unyielding faith in God and “rootedness” in African values, to use Ngome’s terminology, were the only means of resistance Bamba had to face the powerful colonial machine. To Bamba, the sword of faith was much more powerful than the cannon; and he demonstrated that by engaging in spiritual retreats and daily prayers to his Lord. As a result of the colonial cultural and religious values that the French ushered into Senegal, Bamba despised the imposition of the French language and crusaded against the spread of the French language across Senegal. According to Babou (1999), Cheikh Ahmadou Bamba was said to have never pronounced a French word, communicated with his followers in pure academic Wolof, and used only classical Arabic as an instrument of work (Babou, 1999).

Bamba is one of the first black Africans to publicly oppose a purely French literacy education. He was one of the rare religious leaders who knew that resistance against the colonial authority could not be military. He thought, rather, that the battle was to be fought from within the realm of spiritual and educational practice. As a consequence, the early establishment of
Daaras\textsuperscript{xii} (Islamic schools) was a huge blow to the French authorities. The French were stunned by the high enrollment in these Daaras by students wanting to learn the Quran and the Arabic language. In the Daaras, Bamba was shaping and training people’s minds so that they could spiritually elevate themselves in addition to the previously mentioned teaching of the Quran and Arabic. Ngome (2010) characterizes Bamba’s system of educating the masses in the following way:

One of the merits of what Cheikh Ahmadou Bamba did is to have introduced a system of mandatory education for both men and women. The essence of his system was not only to help disciples ‘feed’ their intellect, but above all to fill their soul with positive energy for the betterment of their lives in this world and in the after-life. (Ngome, 2010, p.219)

This system of mandatory education that Bamba put in place during his time (1884-1927) was grounded on the learning of the Quran through the Arabic language. It was a system of mandatory education that banned the teaching of the French language, and students who enrolled in those schools learned to recite the Quran and transcribe the Qur’anic text using the Arabic alphabet. Nearly 86 years after Bamba’s passing, the Qur’anic educational background of the students of Touba elementary school participating in our study still reflects this historical and religious tradition of Bamba’s mandatory system of education.

In the following section, we will discuss the overall socio-linguistic profile of Senegal, its ethnolinguistic composition and its stand on literacy education compared to other African nations before analyzing its linguistic cohabitations.
2.2 Socio-linguistic profile of Senegal

2.2.1 Ethnolinguistic composition of Senegal

Like most sub-Saharan African states, Senegal has a plethora of language communities and a variety of distinct ethnic groups. The country currently boasts 30 distinct languages (11 of them are almost extinct), representing approximately 19 different ethnic groups (Diallo, 2005; Ngome, 2002; Sall, 2009). Each ethnic group has developed a separate language by which members of that ethnic group identify themselves. In that respect, for many Senegalese communities, language has become an important tool for cultural expression and belonging. When analyzing languages and communities in Senegal, Ngome (2002) says it best when he suggests that:

Each of these languages represents an element of identification of a given people, since each language refers to a particular ethnic group. Each ethnic group is identifiable by the language of the group, and by the linguistic forms of their names. Thus, while local languages convey the historical and cultural references of its speakers, Standard French, non-standard French, and Urban Wolof do not necessarily convey the same information. (Ngome, 2002, p.47)

The use of language to define individual belonging within an ethnic group is problematic in the Senegalese context. Many distinct ethnic groups may identify with the same language. This is the situation in various communities in African nations in which a dominant language is usually spoken by several minority ethnic groups. Many minority ethnic groups who speak the dominant language do so to seek economic opportunities and/or want to open up communication channels with business leaders of that dominant language community.
Senegal constitutes a perfect example of this phenomenon. Spoken by more than 80% of the population, Wolof is used by various minority language communities as it represents the language of business, trade and commerce. It is also used in many public and private spheres such as homes, streets, workplaces, banks and hospitals (Diallo, 2005). Many language minority groups (Pulaar, Serer, Mandinka, and Soninke) who use Wolof have privately confessed to only using it in circumstances where they engage in business or trade with the Wolof ethnic groups. It is much more commonplace for ethnic minorities to communicate amongst themselves in their native language. This personal attitude toward the Wolof language by many minority language communities in Senegal is posing a serious challenge to the locals’ and linguists’ efforts to maintain a multilingual and multiethnic Senegalese society.

Although there is a plurality of language communities in Senegal, Senegal presents a façade of multilingualism in which not only are national languages becoming unequally distributed, but in which some are disappearing due to a lack of inclusion and transcription. In the multitude of languages spoken in Senegal, Wolof is the most widely used, with 85% of the population speaking it. Wolof is also spoken by 70% of people in Diourbel, Dakar, and Louga—a very high percentage in those regions. Wolof is an important second language spoken by roughly 24.1% of the population (Direction de la Prévision et des Statistiques du Sénégal, 1993, p. 24).

Pulaar, the second most-widely spoken language after Wolof, is used by 13.8% of the Senegalese population. Figures from Diallo’s field work show that Pulaar is also a dominant language in Saint-Louis, where it is spoken by 46% of the population, Kolda, where roughly 50% of the people speak it as a first language, and Tambacounda, where it is spoken by 46.6% of the population (Direction de la Prévision et des Statistiques du Sénégal, 1993 p.25-26; as cited in
Diallo, 2010 p. 20). Table 2 shows the six most important national languages spoken as first and second languages.

**Table 2.** First six national languages spoken as first and second languages

<table>
<thead>
<tr>
<th>Languages</th>
<th>Spoken as First Language</th>
<th>Spoken as Second Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wolof</td>
<td>67.2</td>
<td>24.1</td>
</tr>
<tr>
<td>Pulaar</td>
<td>13.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Serrere</td>
<td>7.1</td>
<td>1.5</td>
</tr>
<tr>
<td>Jola</td>
<td>4.1</td>
<td>0.5</td>
</tr>
<tr>
<td>Mandinka</td>
<td>2.0</td>
<td>0.6</td>
</tr>
<tr>
<td>Soninké</td>
<td>1.0</td>
<td>(-)</td>
</tr>
<tr>
<td>Other languages</td>
<td>4.0</td>
<td>(-)</td>
</tr>
</tbody>
</table>


Due to a lack of clear and coherent policy to assess and promote minority languages, decades-long efforts to promote literacy in national languages in Senegal have not been fruitful. As a case in point, between 2003 and 2004, major literacy campaigns that were conducted in Wolof across Senegal failed because many minority groups considered these campaigns to be assaults on their respective minority languages. The linguistic favoritism toward Wolof was seen as a detriment to other minority languages across Senegal.

According to Sall (2009), improved literacy efforts failed not only because they showed a lack of preparation and method, but more importantly because the non-Wolof communities perceived Wolof as a threat to other languages in Senegal, which have the right to be fully
represented as described in article 22 of the Senegalese constitution: “All national institutions, public or private, have the duty to alphabetize their members and participate in the national literacy effort in one of the National languages” (Sall, 2009, p.320). Sall’s 2009 study on languages in Senegal indicates that, to date, while 19 languages have been elevated to the status of national languages, 11 other languages remain unwritten and have no official status.

Aside from the negative reaction of many other language minority groups in Senegal to the government’s choice to use Wolof, government officials do not fully understand the dynamics of these complex language communities. It is not enough to simply codify these languages in the constitution. The process of codification must be accompanied by strong policies to facilitate and promote the use of these languages. Most importantly, the Senegalese government must provide a clear assessment of the role and place of codified languages in the educational system.

During our field work in the summer of 2012, we became aware of the major challenges that the ethno-linguistic situation of Senegal presents. Along with the lack of concerted effort in the practice of language policy, there is a huge gap between campaign promises and actions in the major government offices. We share Sall’s observations with respect to the multilingualism issue, namely that there is a wide gap between political rhetoric about multilingual policy and concrete actions.

Obstacles write Sall, still stand to stifle the promotion of multilingualism. First is, among other things, the weight of the legacy of the colonial educational system that we carry and the aim of which was the diffusion and promotion of French language and culture. Today, in some contents of the school programs, it is not our values of civilization that are highlighted but the values of French civilization. (Sall, 2009, p.318)
While Sall’s observation is certainly pertinent, it seems to downplay the responsibility of the Senegalese government, first to clearly rethink the former colonial education plan, and secondly to reassess it and readapt it to fit the Senegalese cultural schema.

The next section discusses some of the major efforts that have recently been deployed by Senegal to promote literacy and where it currently stands in relation to the efforts of other African nations such Ghana, Nigeria and Mali which are promoting literacy education.

2.2.2 Literacy education in Senegal

Literacy education is a crucial element in the advancement of the economic, political, social, and technological development of every country. It helps to broaden understanding and breaks down social barriers between distinct communities and ethnic groups. The importance of literacy education is widely accepted as something that can help reduce poverty and improve health (Shiohata, 2010; Taylor & Francis, 1981). Sub-Saharan Africa has the highest illiteracy rate in the world, with the African adult literacy rate roughly estimated at 9% in 1960, and 42% in the 1980s. Among the 26 countries in the world which have the highest illiteracy rates, 16 are located in Africa and 12 in West Africa including Senegal (Ouane & Tanoh, 1990). Nevertheless, this information needs to be relativized because literacy education in some African countries such as Senegal has much improved since the 1980s. Many West African governments such as Ghana, Nigeria, Mali, Senegal and Burkina Faso have been making determined efforts to lower illiteracy rates and promote literacy education in the mother tongues of their respective countries. One of the highlights of literacy education in the 20th century was the Addis Ababa conference in 1961, which called for the newly independent states to increase literacy rates to a level of 100% and adopt a universal African education system by 1980 (Amadou Hamidou et al., 2005; Diallo, 2010; Dumont, 1983).
Predictably enough, a considerable number of African states who took part in this conference later became convinced that Addis Ababa’s plan and recommendations of literacy for all would not be achievable in the short run. It took roughly two decades before a small cohort of Francophone-African nations began to even consider the idea of implementing the conference’s protocol of mass literacy. What was not predictable at the Addis Ababa conference was the newly independent Francophone-African states’ surprisingly unanimous decision to adopt French as their official language, to the detriment of their indigenous languages, and, consequently, to pursue a policy of French literacy education.

In Senegal, French literacy education campaigns were accelerated and sustained by rigorous constitutional reforms in the early 1970s. Case in point: the 33rd general conference in October 2005 in Dakar, usually referred to as the DAKAR GOAL4, set the tone by vowing to reach the objectives of the project that many scholars have been referring to, since 2005, as the Literacy Initiative For Empowerment or LIFExii.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) introduced LIFE in Dakar to achieve a 50 per cent improvement in adult literacy levels by 2015, particularly among women, as well as equitable access to basic and continuing education for all adults (Aggio & Ravens, 2005; Haneman, 2008). The program targeted 35 of the world’s fastest-developing countries in which literacy rates have been below 50%. According to the official figures provided by Haneman, 85% of the world’s illiterates live in these 35 countries. Eighteen of these thirty five countries are in Africa, nine in Asia and the Pacific, six in the Arab Region, and two in Latin America and the Caribbean (Hanemann, 2005). Although each state has contributed to the implementation of LIFE in its own way and according to its social demands, the technical and financial support required was not always available. More significantly, there
exists a systematic reliance on outsiders to do things that African leaders have the capacity to achieve independently.

LIFE did not fail completely to reach some of its goals in the most literacy-challenged countries in the world, but the Senegalese government’s high expectations in this regard met with some disappointment. The national illiteracy rate in Senegal still remains very high. In 1988, Ethnologues’ reports showed that the French literacy rate reached 28.6% for men and 15.6% for women. In 1993 the French literacy rate was roughly 36% for men and 17.9% for women (Agence Nationale pour la Démographie et des Statistiques du Sénégal, 1993, p.30). Our recent 2012 field research on illiteracy in many regions resolutely testifies that LIFE’s strategy has not been working effectively within Senegal. At the national level, 67% of Senegalese people under 20 years old are illiterate, and 59.6% cannot read or write in French (Agence Nationale pour la Démographie et des Statistiques du Sénégal, 2007, p.29). According to the Senegalese National Agency for Demography and Statistics, in 2007, the illiteracy rate for men in Senegal reached 47.9%, while for women it was estimated at 67.1% between 2005-2006 (Agence Nationale pour la Démographie et des Statistiques du Sénégal, 2007, p.30). The high illiteracy rate among women is explained by several factors. For instance, in its Programme de Développement de l’Éducation et de la Formation (PDEF; Programme for the Development of Education and Training), created in March 2003, the Senegalese National Ministry of Education (MEN) identifies various obstacles that have been contributing to the low literacy rates among women. The most prominent among these factors are poverty, domestic work, parents’ level of education and attitudes toward schools, and religious beliefs about the role of women in society (PDEF, 2003).
Among the long list of obstacles provided by MEN, our field work found women’s early marriage and pregnancy to be the most important contributors to high illiteracy rates among women as well. Clearly, the previous government (Wade 2000-2012) has made successful efforts to increase girls’ literacy and enrollment in schools and to implement crucial reforms to encourage gender parity in the Senegalese parliamentary and national assembly, the justice system, and other major government agencies.

In the global crusade against illiteracy, however, Senegal and many African countries still have some work to do, despite major efforts deployed by the government to push for reforms that will lead to literacy for all. The call for dialogue on literacy at the Addis Ababa conference (1961) was a good initiative, but the conference overlooked the central tenet of its recommendation which was to first develop a literacy education grounded in the African languages. As well, the Addis Ababa mass literacy plan was not clear as to what language(s) it wanted indigenous people to start reading and writing in. The lack of clarity in defining a goal for the mass literacy program constitutes a huge strategic mistake, the consequences of which continue, to this date, to overshadow the linguistic landscape of those African countries that took part in the conference. Like most Francophone African nations, Senegal has been experiencing an unprecedented linguistic crisis at all levels of its educational system since 1970.

It is our view that the recent UNESCO (2005) plan of action to decrease illiteracy rates by first promoting literacy in the indigenous languages is one of the keys to resolving the Senegalese educational crisis, by lowering the high national illiteracy rate (UNESCO, 2005, as cited in Hanemann, 2008). Functional literacy in the indigenous languages promoted in the 1980s—which consisted of teaching the most widely-spoken language, Wolof, to all school children—received unanimous favorable reports from linguists, teachers, and government
agencies. And yet, after all these backdoor deals, meetings, workshops, and international conferences on literacy, there is no clear vision as to the direction that the literacy program in Senegal is heading. Where does literacy education in the mother tongue start? Why has it taken so long for Senegal to implement a literacy education in its mother-tongues like the rest of its West African neighbors such as Nigeria, Ghana, and Mali?

Perhaps the answers to these questions could be found in the complex nature of Senegal’s linguistic history, which binds the country to its former colonizer, France.

2.2.3 Linguistic cohabitations

Early speculation that implied textual literacy was first introduced into Senegal by the Europeans has no foundation in the literature. Today, there is a significant body of evidence to demonstrate that literacy was introduced into Senegal through Islam in the early 11th century (Diagne, 2004; Fage, 1969; Hassane, 2008; Saul, 2006; Trimingham, 1980). The influence of Islam on literacy in African languages gave rise to what is known today as Ajami literature (i.e., a model of writing practice of other languages using a modified Arabic script). Most significantly, the early cohabitation between the Arabic language and indigenous languages was marked by an atmosphere of peace until 1659, when the French settled in the outposts of Saint-Louis. While many would argue today that the early French settlement on Saint-Louis was motivated by economic gain, the French colonists were also drawn to Senegal as a place to spread their “civilizing” mission, through assimilation into the French language and culture. That is, the French language was the bedrock upon which France built its colonial domination and its entire “civilizing mission”.

The colonial linguistic plan to suppress Senegalese indigenous languages caused the early linguistic cohabitation between French and the Senegalese national languages to be fraught with
conflict, systematic defiance, and political showdowns. Because of the spiritual dimension attached to the Arabic language (i.e., language of the Quran), the very early atmosphere of cohabitation between the Arabic language, and the Senegalese indigenous languages was that of peace and massive collaboration.

2.2.3.1 The cohabitation between Arabic and Wolof

The process of language cohabitation in Senegal began as early as the 11th century when Arab and Muslim invaders launched vast Islamic conquests across North and West Africa. Like their European successors in Senegal, the Islamo-Arabic invaders also sought political hegemony, but with even more religious and cultural domination (Wagner, 1993). The strong bond between the Arab language and Islam in the early 11th had facilitated a peaceful cohabitation between the Senegalese national languages and Arabic. The expansive reach of Islamic culture into the cities of Northern Senegal (such as Saint Louis and Matam) is demonstrated in the presence of Arabic script in the Wolof, Pulaar and Mandinka textual language. More importantly, the broad use of Arabic script was designed to provide the Senegalese indigenous population with knowledge of the Quran. A popular Islamic belief is that every Muslim should be able to read and write the Qur’anic text. Qur’anic literacy not only encourages Muslims to become literate but helps them perform their daily prayers, which is the second fundamental tenet in the Islamic faith. From this Qur’anic literacy, Ajami literacy has developed, which is basically a combination of the Arabic script and Wolof, the main Senegalese national language. Referring to this Ajami literacy, Diallo (2012) observes that:

Quite rapidly, however, these Qur’anic school-masters appropriated Arabic, not only for the purposes of reading and teaching the sacred Scriptures, but also for using its alphabet to put their own language–Wolof–in written form. The appropriation of the Arabic alphabet
and writing conventions created the impetus for secular literacy practices and the development of literate cultures in West Africa. Ajami literacy contributed to creating different text types for a range of secular functions, including, but not limited to, record keeping (contracts, birth and marriage certificates, business transactions, tax records, keeping family or business accounts, etc.), literary writings (literary texts, memoirs, poems, songs, elegies, eulogies, etc.), public communication (public notices, advertisements, etc.) and personal and private correspondence (personal letters, speeches, wills and inheritance, special prayers). (Diallo, 2012, p. 96)

In addition to the Ajami literature as described by Diallo, there existed another form of literature using the Arabic script: Wolofal. Wolofal was used on a vast scale, especially at religious gatherings, and is still available today in the works of various Senegalese Sufi Muslims and Islamic elites. Prinz (1996) observed that “the Islamic elite appropriated Arabic, not only for the purposes of reading and teaching the sacred scriptures but also for using its alphabet to put their own language—Wolof—into written form” (Prinz, 1996. p164, as cited in Diallo 2010, p. 10).

Prinz’s observation dismisses the general claims that early literacy education in Senegal was initiated by the French colonists, arguing that early literacy education in Senegal started with the Arabic language. There is sufficient evidence in the literature to support the claim that the language and Qur’anic schools were already in place (Diallo, 2010; Gaucher, 1968; Jeppie & Diagne, 2008; Ndao, 2000a; Prinz, 1996).

These strong linkages between the Arabic language and Wolof and other languages of Senegal show a peaceful cohabitation, in which the Arabic language was put on a high pedestal because of its status as the language of worship and written communication. Salhi (2002) gives a description of that peaceful language cohabitation atmosphere in these words:
There is a remarkable feature concerning Islam in relation to Christianity in Francophone Africa. Most Muslim children—when required—have to learn the art of reading and reciting the Qur’an in Arabic even if they do not understand what the words really mean. That is why Muslim schools in North and West Africa are referred to as Qur’anic schools. Ironically, the best and most prominent literature in French was produced by writers who attended those Qur’anic schools, such as Kateb Yacine, despite the emphasis on the verbal mastery of the Holy Book. Islam in Africa, therefore, is linguistically uncompromising, demanding due conformity with the language in which God communicated with humankind. (Salhi 2002, p. 324)

Contrary to the peaceful cohabitation between Arabic and Wolof in the early 11th, the cohabitation between French and Wolof was different in many respects. The French language has never had the prestige that the Arabic language had vis-à-vis the Wolof language during colonialism in that a significant number of Senegalese subjects considered French to be an instrument of linguistic domination and cultural alienation. Although this can be one reason, a host of other reasons could also account for that early tension of cohabitation between French and Wolof as we see in the following section.

2.2.3.2 The cohabitation between French and Wolof

The contact between the French colonists and the Senegalese indigenous people can be traced back to a French settlement on Bocos Island off the coast of the Saint-Louis region in the northern part of Senegal in 1659 (Bouche, 1975; Diallo, 2010; Gaucher, 1968). But it was not until the twentieth century that there was any formal contact between the French language and Wolof. On March 7, 1917, the first colonial elementary school was established by Jean Dard, a young French schoolmaster. In the beginning, Dard’s French elementary school was unattractive
to the vast majority of Saint-Louis residents due to its singular use of the French language and its banning of all vernacular languages such as Wolof and Serere. Implementing French as the only medium of instruction was more than a simple scholastic endeavor of the French colonists. Rather, the French language was an indispensable instrument used to imbue Senegal with French culture. As Davesne clearly stated in 1933:

Our ambition is to teach French [and to] bring the African people to live a more human life; the French language seems to us an incomparable instrument of civilization.

(Davesne, 1931, p.6, as cited in Lehmil, 2007, p.46)

Contrary to the Francophone Africa that Davesne envisioned, early contact was marked by an atmosphere of conflict and various failed attempts by the French colonial authorities to assimilate children into the French educational system. On several occasions the French authorities attempted to not only halt the spread of Arabic, a language already deeply engrained in Senegalese society, but also to reduce indigenous languages to idioms or simple dialects instead of fully developed languages. Most importantly, they put forward a “radical brand” of Christianity that looked down upon Senegalese nationals as “non-civilized” races. This was clearly stated in the *Charte des Missionnaires*: “Go! In all nations, make converts […] in those areas so far not accessible, in the Name of God and freedom to… liberate and convert 30000 slaves” (Lallemand, 1992, p.23, as cited in Diallo, 2010, p.45).

Early attempts to spread French culture through Christianity were not very successful since the vast majority of the Senegalese population did not identify with the Christian faith. Additionally, they did not speak in French. Despite Father David Boilat’s several attempts to use Wolof to carry on French Christian missionary work, many Arabic and Qur’anic schools continued to receive overwhelming support from various religious circles and local chiefs.
throughout the country. As a result the French authorities had no choice but to abandon what they called the “premature Christianization of the indigenous people” (Diallo, 2010, p.37). Schmaltz’s concerns, which he shared with his collaborators, gave ample evidence for the Ministre de La Marine et des Colonies to relinquish their Christianization policy in these terms:

I approve the idea of putting an end to the idea of associating the colonization plan with the plan to proselytize the Africans. The time is not yet right to introduce Christianity to the indigenous people on the banks of Senegal; they will be much better prepared, though from a distance through elementary instruction than through premature proselytizing and perhaps through quite dangerous attempts at proselytizing. (Gaucher, 1968, p.22 as cited in Diallo, 2010, p.40)

The French authorities abandoned the idea of using the Christian faith as a colonizing tool, not only because they stumbled on the faith issue, but also because they became intimidated and discouraged both by Dard’s Wolof-French dictionary and Descemet’s French phrase book (1864). It is worth noting that although Dard’s efforts to introduce the Wolof language to the French curriculum was a major critical step in the education of the Senegalese children at the elementary level, the creation of a Wolof-French dictionary did not help the Wolof children who could not read or write in their mother tongue.

From an educational point of view, Dard’s Wolof-French dictionary was only necessary after those children had acquired literacy in their mother tongue, Wolof. But from an historical perspective, his regard for the introduction of a national language is to be saluted. “Indeed, what is the use of French or English words repeated by a young African, when he cannot understand the meaning of these words in his own language [langue]? He is discouraged; and often the first
month of education will be enough to discourage him forever” (Gaucher, 1968, p.173 as cited in Diallo 2010, p.38).

Equally important was Descemet’s Wolof-French phrase book, published in 1864. Descemet’s phrase book, which McLaughlin (2001) also calls the “ancestor of contemporary Urban Wolof”, has done more damage than Dard’s French-Wolof dictionary because it was rife with linguistic borrowings from French. If Dard’s French-Wolof dictionary had a pedagogical implication that was intended to help the Wolof children learn the French language, Descemet’s phrase book served as a contact language designed to advance the colonists’ agenda to assimilate. Mc Laughlin is convincing in her characterization of Descemet’s phrase book:

I also propose that Wolof did not arise out of widespread societal bilingualism in Wolof and French, but rather emerged as a prestigious urban code, modeled after the speech of a small group of bilingual elites, including the Métis or mixed-race population of Saint-Louis, who dominated commercial and political life at the time and of which Louis Descemet was a member. (Mc Laughlin, 2008)

The aggressive French language assimilation policy designed to stifle the growth and spread of Senegalese national languages was very successful in Senegal during the colonial times. However, because of the overwhelmingly wide use of the Wolof language and growing interest in the English language across Senegal today, the French language has gradually begun to lose ground and is becoming increasingly unpopular to a large segment of the Senegalese population. Moreover, the rapid spread of non-standard French in various regions of Senegal has contributed to the decline in the prestige of the French language. This has since posed serious questions for many linguists concerned with what the future has in store for the French language in Senegal.
In the following section, we will see that, despite major efforts to maintain the status and the “purity” of the French language, the kind of French being spoken in the streets of Senegal today sounds more like what Descemet hoped to achieve in his early French-Wolof dictionary.

2.2.4 The situation of French in post-independence Senegal

April 4, 1960 marked a major moment in the colonial history of Senegal. On this date Senegal was officially declared a sovereign state. It also announced the beginning of the end of more than two centuries of French colonialism. But the transition from colony to independence was long, and Senegal was still very much entrenched in the process. Half a century later vestiges of France’s linguistic and cultural domination remain present.

Immediately after the departure of French colonists, the newly elected government of Senegal undertook a constitutional reform that established French as the official national language. Furthermore, Article 1 of the constitution, which stipulates that “the official language of Senegal is French”, was completely silent on the status of the local languages until subsequent constitutional reforms encouraging the use of the indigenous languages were introduced under the leaderships of former Senegalese presidents Abdou Diouf (1980-2000) and Abdoulaye Wade (2000-2012).

Given its official status, proficiency in the French language has since been associated with higher levels of education, social mobility, and economic and professional opportunities (Diallo, 2010; Sall, 2009). But, most significantly, despite the widespread oral use of Wolof (more than 80%), French still dominates in major government institutions and offices. Equally important is the role that French language plays in the education system of Senegal. French is the only medium of instruction, widely used in primary, secondary, and tertiary schools (Diallo, 2010). French is the language of the Senegalese parliament, the court systems, and the National
Assembly. French has also been a powerful tool for the transmission of French culture, and a reliable means of communication. Nevertheless, French plays a minor role in daily communications, trade and commerce among distinct ethnic groups. At this vital level of Senegal’s economic and cultural operation, the language of choice remains an informal blend of Wolof and French. This dichotomy of language practice has led to the establishment of two varieties of French language in Senegal: Standard French and Non-Standard French. It is worth noting that there are no difficulties of incomprehensibility between people who speak these two varieties of French language. In other words, people who communicate in these two forms of French always understand each other without any major break in the communication process.

Standard French respects the rules prescribed by the French Academy, which oversees the French language to keep it “pure”, i.e., uncontaminated by borrowings and other foreign influences. Even though the French Academy is based in France, its power and influence exert themselves well beyond the confines of the French Republic, as it covers a range of Francophone zones with their 220 million speakers scattered across the globe (Ngome, 2009). The high prestige associated with speaking Standard French was born out of the necessity for the French Republic to preserve Standard French whenever and wherever possible around the globe. In that respect, the French Revolution set an example by pushing for reforms to consolidate the “purity” of the French language. Under the leadership of l’Abbé Grégoire, additional efforts were then deployed to eradicate dialects and regional languages across France (Salhi, 2002). As a result, this movement of the standardization of the French language that swept major parts of France in the early nineteenth century was also adopted in most French post-colonial states in Africa.
In Senegal, speaking Standard French was popular among circles of intellectuals, elites, political leaders, and students who believed in the importance of retaining the “purity” of the French language. There is also a large segment of Senegalese population who believe that speaking Standard French would open the door to socio-economic and political opportunities for Senegal and other Francophone countries around the world. Given the role played by Standard French in Senegalese society, Ngome (1999) writes:

It is obvious that it enjoys high prestige. Standard French is generally associated with education and high social class. It is required for formal business jobs and in all government services. Thus, although it is not used as a mother tongue, due to its pivotal role in the economic and political field of the country, it is associated with high prestige.

(Ngome, 1999, p.135)

The late Leopold Sedar Senghor played a very prominent role in promoting Standard French. Although not a linguist, he waged many linguistic battles to make sure his cabinet and entourage modeled their French on the Standardized French spoken in the capital. The first constitutional reform to elevate French to the status of official language of Senegal was advanced under Senghor’s leadership. He was also famous among his fellow African elites for his unwavering support of the French language. For example, on several occasions during his meetings with the press or members of his cabinet, Senghor would not hesitate to make a joke to correct someone’s French grammar, orthographic errors, or pronunciation of a French word.

Many of his critics believe that Senghor’s endless efforts to assimilate his people into the French language were motivated by political gains rather than pure altruism. His actions paved the way for the domination of the French Academy. His continuous urging of his people to speak French “comme [des] bourgeois de Paris” [like Parisian Bourgeois], paid off when he became
the first African intellectual to be admitted into the French Academy (McLaughlin, 2001). And while his years at the French Academy were marked by success, he nevertheless failed to reverse the tendency of the majority of his people to veer away from Standard French toward the national languages after independence.

Today, according to Ngome (1999), less than 5% of intellectuals and elites speak Standard French. There is, however, an overwhelming use of Non-standard French. People who have never attended school or only been to elementary schools use this non-standard French, mainly in the market, at tourist sites, and in other informal settings.

One of the most densely populated marketplaces in Senegal, Sandaga, provides a good example of a linguistic melting pot, where native Senegalese, Chinese, French and many other nationalities engage in endless daily bargaining conversations, using a Non-standard French. Ngome(1999)’s data, taken from letters written by a 25-year-old woman and an 18-year-old boy, give good examples of what the use of this non-standard French and Standard French consist of:

**Standard French**

(a) …cher frère aîné, j’ai préparé les bagages moi-même....

(b) …mon frère, prend pas ça à la légère, car c’est un problème sérieux pour nous.

**Non-standard French**

(c) …ser garand férér, sé péréparé lé bagaas awek matét...

(d) …mon férér, pa prend sa kom sé lésër, kaar sé poroblem diir pur nous.

A thorough examination of sentence (a) through (d) allows us to come to the conclusion that, while most of the words in the non-standard French are derived from French, there remains a heavy presence of Wolof. This daily intertwining between French and Wolof, however, poses serious concerns for linguists as to what the future of the French language will be in Senegal.
Given the widespread use of the Non-standard French, it goes without saying that the chances that Standard French will survive in Senegal are minimal. More importantly, as long as French is still considered a foreign language and a colonial linguistic legacy in Senegal, the high regard and respect associated with its usage in the past may no longer hold true for the current population. That is why, for more than a decade, several linguists have been frustrated by the widespread use of Non-standard French which they mistakenly label as a “pidgin” or “créole”-like version of French, to use Dumont (1983)’s terminologies. It is worth reemphasizing the idea that the use of the terms “pidgin” or “creole” are sometimes perceived in a historical context of colonialism, therefore these terms carry the weight of caricature that French colonists referred to the Senegalese national languages vis-à-vis French. Nevertheless, in purely linguistic angle, this may not be the case for some linguists who use these terms for linguistic purposes only.

This characterization of Non-standard French as a form of the “créolisation” of French has caused serious controversies and polemics in Senegal. Pierre Dumont was the first linguist to denounce this classification in Senegal. In his book *Le français et les langues africaines au Sénégal*, Dumont writes:

> It is obvious that speaking of “créolisation” with respect to African French is an abuse of the term. This French is not a creole, but a regional French; therefore, it is rather a regionalization that one ought to speak about to avoid equating this French with a “defective French”. (Dumont, 1983, p.210)

While Dumont is right to strongly refute such a characterization of African French as a form of créolisation, we would take his argument even further, by suggesting that any classification or characterization of language as “pure” or “non-pure” has no measure in realistically applied terms. How far can one really go to suggest that such and such a language is
“pure” while another language is not? How do we measure that “purity”? According to what criteria? (see Fall, 2012).

Questions of this nature have always puzzled linguists and language policy-makers, and yet concrete answers remain elusive. The reality is that such classifications of languages as being “pure” or “Standard” in relation to other languages are too often motivated by politics and nationalist ideologies. These notions can be manipulated by the authorities in power to suppress minority language groups (e.g., the Kurds in Turkey—and, thereby, their cultures—or by dominant ethnic groups to impose a way of speaking on the rest of the groups).

Language is not static; it is a dynamic force that evolves with communities, and as these communities grow and expand, they need to invent new linguistic tools (new words) that best express their own reality and their relationship with the world they live in. The non-standard French spoken in the streets and markets of Senegal is indicative of the dynamism and polyvalence of French in the current situation.

From a purely cultural perspective, however, there is ground for celebration regarding the “linguistic métissage” between the French language and Wolof, as large segments of the Senegalese communities often engage in long friendly conversations marked by the heavy presence of both French and Wolof. In keeping French (which is spoken by only 1% of the population as a first language) constantly present in the discourse of the average Senegalese person, Senghor has not totally failed in his efforts to maintain the French language.

Although French still remains the official language, controlled by 10% of the Senegalese population, the vast majority of the Senegalese people use Wolof as their main means of communication. While French is still the medium of instruction in the education system of Senegal, many predict that Wolof will take over, to become the medium of instruction in all
Thiam (1994) gives the most accurate assessment of the direction of Wolof and French in Senegal:

Although French is the official language and is controlled by about 10% of the Senegalese population, the vast majority of Senegalese uses Wolof as a language of communication. The standard by which the French language is official in administrative circles and Wolof the language of the country is no more respected because ‘Wolof’ is spoken today in all environments where French should be used in state institutions, public areas, official speeches, in schools and even [in] university. Moreover, it is unthinkable today, in the broadcast media, to make a speech, an interview, a story, etc. in French without making it follow or precede a speech, interview, reportage, etc. in Wolof. Cultural programs, plays, Senegalese parties on Senegalese public and private channels are mostly all made in Wolof and followed in all regions of Senegal. (Thiam, 1994, p.13, as cited in Sall, 2009, p. 317)

Thiam certainly gives an accurate description of the rapid decline of the French language in Senegal today. The question is: should this decline be measured or examined at the speech level only when we know that French is the dominant written language of the Senegalese public administration and private sector?

In the following section, we will see that French is losing to Wolof at the speech level in various locations, but at the print level French still continues to dominate the linguistic landscape of Senegal.

2.2.5 The status of Wolof in post-independence Senegal

The rapid expansion of the Wolof language after independence is indicative of the European colonialists’ partial failure to fully suppress and/or reduce the Senegalese national
languages to insignificant dialects or simple idioms of communication. Although Wolof is not used as a medium of instruction in schools in Senegal today, it has established itself as the lingua franca and is spoken and by 85% of the Senegalese population (Direction de la Prévision et des Statistiques, 1993, p. 24).

According to the official numbers provided by the Directory for Forecasting and Statistics, Wolof is well implanted in certain regions, such as Diourbel, where it is understood and spoken by 71.5% of the population; in Louga the figure is 71.8%, in Dakar 67.2%, and in Kaolack 68.8%. Wolof is used as a second language by roughly 24.1% at the national level and is estimated to be used at higher rates in Thies, with 28.7%, Zinguinchor, with 28.2%, and Fatick, with 44.2% (Direction de la Prévision et des Statistiques, 1993, pp.25-27).

In the Senegalese music industry, for example, the Wolof language is used by popular musicians like Youssou Ndour, Oumar Pene and other newly emerging singers. A few singers (Mbaye Ndiaye, Baba Maal) sing in minority languages, such as Pulaar and Serere, sometimes with a strong dose of Wolof words in their songs. In fact, the wide use of the Wolof language by musicians has contributed to its expansion beyond Senegalese borders. According to Diallo (2010), these musicians and their music have contributed to the spread of Wolof language and culture; not only are their music and (Wolof) lyrics popular, but these singers are also seen as role models and professional success stories.

Religious communities including the Muridiyya, Tidjaniya, and Khadriya have significantly contributed to the spread of Wolof in Senegal. For example, the Murid Sufi community (mostly Wolof speakers) has a powerful congregation composed of various disciples around the world. These disciples, known as Talibé Mouride [Murid Disciples] pledge allegiance to the spiritual founder of Muridiyya, Cheikh Ahmadou Bamba, who, as indicated earlier, waged
major historical battles against the French colonists in Saint-Louis and Touba in the early nineteenth century.

Since Bamba despised the French colonists and their language, he was a vocal supporter of the Wolof community’s value systems and language. As discussed previously, his open, non-violent resistance to the spread of the French colonialists’ language and culture brought him imprisonment and long exile in Gabon and other neighboring countries. Today, many historians argue that, because of the great number of Wolof speaking supporters of the Bamba crusade, the Wolof language picked up momentum ever since (O’Brien, 1998; Swigart, 1994). McLaughlin (2001) also argues that the social and economic influence of the Murid Sufi order, whose origins are in the Wolof heartland, has favored the ascent of the Wolof language (McLaughlin, 2001).

McLaughlin is certainly correct in his point of view because Bamba’s key role in the fight against French colonialism, as discussed earlier, has propelled him to the position of a respected national figure in Senegal. His disciples, who are mostly Wolof speakers, are powerful lobbyists and business people scattered almost everywhere around the globe. They are heavily present in key markets areas in Dakar (i.e., Sandaga and Thiaroye Gare, etc.) where they conduct most of their business in the Wolof language.

Today, the rapid expansion of the Wolof language is not only facilitated by the music industry and religious leaders, but also by the media and political leaders. Wolof dominates in all the major TV stations (i.e., RTS, Walfadjri, RFM, etc.) and radio stations (i.e., Sud FM, WalFM, RFM etc.), where more than 60% of daily broadcasting is in Wolof. This rising number of TV and radio stations is primarily attributed to former president, Abdoulaye Wade, a liberal democrat, who, during his term in power, pursued a liberal agenda and laissez-faire policy. As a Wolof, Wade advocated for the use of the Wolof language in major social and political spheres
in Senegal. Moreover, several national language advocates have been lately using the media as a tool to promote the use of the Wolof language.

Beyond the media, the Wolof language is also used by many political leaders who, in search for electoral votes, hold meetings and campaigns in places where the use of the Wolof language dominates the other minority languages. Given the presence of other minority language groups, there are very few politicians who use a minority language to target a particular language group.

The culture of the non-use of the minority languages in Senegal was cultivated by two former presidents of Senegal. While Leopold Sedar Senghor and Abdoulaye Wade, were known for changing the language register to suit their audience, it must be noted that Wade was always more consistent in the use of the mother tongue than Senghor. In fact, the political slogan that helped Wade win the presidency in 2000 was *SOPI* [a Wolof word that means change]. Unlike Wade, Senghor was a poet who declared his love for the French language and rarely used his mother tongue (Serere) to talk to his fellow countrymen. On rare occasions would he use Serere or Wolof, but only when he was engaged in political speeches in which he was compelled to deliver an important message in Wolof or Serere to his non-French-speaking audience. For example, in the postcolonial period, the use of national languages was unpredictable. The insertion of some (local) words in French speech was only meant to provide an exotic flavor and spice. So, people were delighted and applauded the former President Senghor when he said a few words in Wolof or Serere, as if he made an exploit by using his mother tongue (Dumont, 1983). His famous Wolof proverb pronounced in 1974 during a social and economic forum made him very popular among many Wolof circles: “Bëgë dem taxul, mën a dem moy tax a dem” [wanting to go does not make you go, but being able to go makes you go] (Dumont, 1983, p.28).
The situation has now changed and the national languages, Wolof in particular, have emerged in official speeches. This revival of national languages can be explained by the trend from the 1980s onward for locals to reclaim their original identities. For example, they want to be taught and addressed in a language they know, not only to renew their sense of dignity and self-possession, their sense of African and cultural authenticity, but also in order to fully participate in the life of Senegal, by exercising their roles as citizens in the new democracy (Sall, 2009).

The rising number of Wolof speakers in Senegal poses some serious questions as to what the Wolof language is going to sound like in future. The widespread use of the Wolof language across distinct ethnic groups and geographical locations led to a variety of Wolof forms. But, most significantly, the contact between French and Wolof has created two Wolof varieties in Senegal: 1) urban Wolof, which is mostly used in cities like Dakar, and 2) a pure Wolof, known as urban kajoor Wolof. According to Swigart(1990), who did the most comprehensive study on codeswitching in Dakar, the urban variety of Wolof is characterized by various borrowings from the French, while pure Wolof is marked by the absence of influence or borrowing from the French language (Swigart, 1990). Pure Wolof is mostly embedded in the high quality of the structure of the Wolof sentence and the deep meanings hidden in it. This variety of language is used in most rural villages, where the contact between a French speaker and a pure-Wolof speaker rarely occurs. People who live in these rural areas are mostly very conservative and take pride in keeping their own native language from any foreign influence.

Although it is difficult to find a speaker of pure Wolof, this variety is mostly spoken in the Diourbel region, known under the generic term as Baol. The speakers of this “pure” variety of Wolof are called the Baol-Baol, not only to refer to their skills as business
people but their use of ‘deep Wolof’[Olof bu xoot] as McLaughlin calls it (McLaughlin, 2001, p.160).

Touba, a holy city in the Diourbel region, has been specifically held as an example of a place that uses deep Wolof because many of its religious leaders have produced important scripts in Wolof known as Wolofalvii. Moussa Ka, one of the early disciples of Cheikh Ahmadou Bamba, founder of the Muridiyya doctrine, was famous for his Wolofal scripts, designed to praise Bamba and sing the glory of God. This form uses a high level register that only the initiated could comprehend. However, as a result of waves of migration of its youth to Dakar for better opportunities and work, that high regard for their pure Wolof speech that many inhabitants of city of Touba have boasted of for quite a longtime is gradually eroding away. Touba is attracting many visitors from the neighboring regions who will blend into the community. Given the combination of the mass movement of people coming into the region and the established media diffusing information in French and other languages, it is quite difficult to hear pure Wolof spoken in Touba or in various rural villages across Senegal. As our result findings will show later in chapter 6, a significant number of research participants we interviewed in Touba declared mixing Wolof with Arabic when talking to their children at home.

As this pure Wolof is gradually disappearing from these rural cities as a result of contact between people in the urban centers and people in the rural areas, the Wolof language is being more and more reduced to a single variety: Urban Wolof. This variety of Wolof, known as ‘Dakar Wolof’, is characterized by extensive borrowing from French (McLaughlin, 2001). It is widely used by cab-drivers and business men and women who have limited linguistic competence in Wolof and French, leading to widespread code-switching (the use of two different languages in a single conversational discourse) almost everywhere in the city of Dakar. It is
worth noting, however, that the less educated the urban Wolof users are in the French language, the more they get their linguistic supply from Wolof.

The Wolof language has not only managed to establish itself as a *lingua franca*, but it has expanded its reach at a remarkable speed since Senegal became a sovereign state in 1960. The intensive ongoing “Wolofisation” of Senegal, as many linguists have since called it, has two major consequences. On the one hand, this “Wolofisation” is affecting many different ethnic groups who have gradually shifted from using their own first language to using Wolof (Diallo, 2010; McLaughlin, 2001). To some extent, French is the only language in competition with Wolof; the other local languages are not even included in the process. In that respect, many minority language groups are deeply concerned today that their minority languages are becoming endangered, as there is little room for their daily expression in the public spheres. Speaking of the supremacy of Wolof over other minority languages in Senegal, Thiam (1994) observes:

> Wolof is spoken today in all environments where French should be used in state institutions, public areas, official speeches, schools and even university. Moreover, it is unthinkable today, in the broadcast media, to make a speech, an interview, a story, etc. in French without making it follow or precede a speech, interview, reportage, etc. in Wolof. Cultural programs, plays, Senegalese parties on Senegalese public and private channels are mostly all made in Wolof and are followed in all regions of Senegal. (Thiam, 1994, p.34)

On the other hand, this ongoing “Wolofisation” has since sent a strong signal to Senegalese linguists, language planners, and government authorities that Wolof is also on the verge of replacing French as the medium of instruction in Senegal. During our field work in several elementary schools in Senegal, we observed that Wolof dominates French and other local
languages in schools. Although French is used to instruct students, many instructors spice it with Wolof to reach their lesson objectives of the day (Semi-structured interviews Touba elementary school, 2012).

This French instructor’s bilingual method of teaching, which can be safely generalized in many elementary schools in Senegal today, became very popular in the early 1980s, when most schools thought of integrating Wolof into their curriculum. Cheikh Anta Diop’s translation of Einstein’s Theory of Relativity into Wolof, along with Sakhir Thiam’s work to produce a Wolof dictionary, gave momentum to the vast promotion campaigns for the inclusion of the national languages in elementary schools.

Nevertheless, given the growing interest in the English language among the Senegalese youth nowadays, there is a looming prospect of a linguistic bipolarization shift from French and Wolof to English and Wolof. As many youngsters continue to supplement their daily conversations with a variety of colloquial forms of English, the hope to maintain and expand the use of the French language in Senegal is gradually fading away.

2.3 Conclusion

This chapter has shown that Senegal is currently experiencing a host of socio-economic, linguistic and educational issues. Nevertheless, centuries of French colonial intervention in Senegal must be always considered as an important factor in assessing the current linguistic and educational state of affairs of this country. While a series of colonial conquests shook the very socio-economic foundation of Senegal in the early 1400s, Senegal was literally left with no manufacturing industries after the 1960s. As a result of this situation, Senegal has had an agriculture-based economy whose post-independence leaders have failed to come up with new ideas or rigorous policies to rebuild its economy or even regulate its market. For example, the
current supremacy of foreign economies (i.e., France, China, England, India etc.) over the Senegalese markets, which one can view as a neo-economic colonialism, constitutes a real threat for Senegalese local and small business owners. While these giant companies are gaining a huge amount of money and assets from market profits and loopholes, the current unemployment rate among young people in Senegal is roughly 38% (Agence Nationale de la Statistique et de la Démographie, 2008, p. 17).

The French colonial linguistic domination over Senegal, while suppressing the Senegalese indigenous languages, had trained new Senegalese elites who would carry on its colonial legacy. The continuation of the same colonial language and planning in Senegal had major educational impact on children today. Among other consequences, the absence of literacy in their mother tongue Wolof affects their literacy French. Illiteracy rates in the French language among men and women are still high (47.9% for men and 67.1% for women) despite major efforts made through conferences and workshops across Senegal to try to address to them. Perhaps there is a more pressing need to change strategy and start harnessing the Senegalese national languages (mainly Wolof). Given the fact Wolof is a lingua franca spoken by more than 85% of the Senegalese population, the newly elected government of Senegal needs to come up with a clear language policy and planning roadmap to include Wolof in the teaching curriculum while encouraging literacy in French and other foreign languages in the country.

Chapter 3 reviews the current literature on the relationship between first language literacy and second language learning. It first revisits the debate over bilingualism and then discusses Cummins’s Developmental Interdependence Hypothesis (DIH) and other major studies on the notion of cross-linguistic transfer and reading skills. Chapter three ends by analyzing the current
research on home literacy and its positive impacts on second language learning in some African countries.
Chapter 3: Literature review

Debates over the role of mother tongue literacy in second language learning have generated a wide range of scientific research throughout the world (Bamgbose, 1983; Cummins 1979, 2000; Diallo, 2012; Fakeye & Soyinka, 2009; Hood et al., 2008; M’Bow, 1953; Salazar, 2006; William, 1996). While some researchers (Cummins, 1979; Sparks et al., 2009) have equated successful second language learning with strong mother tongue literacy, others have minimized the role of the mother tongue in successful second language learning (Bloomfield, 1933; Skinner, 1957; Thorndike, 1913; Watson, 1925).

The conflicting opinions regarding the role of the mother tongue in second language learning arose from earlier studies conducted by Lado on language transfer. In his groundbreaking work on Contrastive Analysis, which compares two languages to show their differences and similarities in terms of linguistic patterns, Lado (1957) sought new ways of understanding learners’ errors in the target language. If there is a similarity between a learner’s mother tongue and second language, there are grounds for an easy positive transfer of some patterns of the mother tongue to the second language. However, if the mother tongue and the second language differ greatly, difficulty arises in the process of transferring aspects of the mother tongue to the second language-negative transfer (see also Bloomfield’s (1933) work on language and Skinner’s (1957) work on behaviorism).

Despite the subsequent division on the issue, Lado’s work provided useful tools for linguists to compare linguistic features and to predict difficulties associated with learning in a second language. Most significantly, and following the widespread use of his contrastive analysis, researchers were able to provide further evidence of the strong correlation between mother tongue literacy and second language learning (Cummins, 1979, 2000a, 2000b; Derwing et al.,
2009; Hood et al., 2008; Mooznah & Owodally, 2009; Sparks et al., 2008; Skutnab-Kangas, 2000; Salazar, 2006; Tse et al., 2007; Weijen et al., 2009).

The unresolved issue of the mother tongue’s role in second language learning can be credited in part to the lack of definitive criteria for what constitutes a mother tongue. Whereas a second language is used to refer to any language known after the first one has been mastered (Gass & Selinker, 2008), the meaning of ‘mother tongue’ has been subject to ideological debates. The unclear distinction between mother tongue and second language can be illustrated in the Hispanic populations in the United States where many native Hispanic children have Spanish as their mother tongue (i.e., Heritage Language—usually not acquired because of an individual’s switch to the dominant language), yet they use the dominant language, English, to communicate with their parents at home (Cummins, 2000).

Beyond the ideological debate, if one simply had to define a mother tongue, one would say that a mother tongue is the first language that a person knows at birth. As simplistic as it may appear, this definition is also applied to ‘native language’, ‘first language’ and ‘vernacular language’. This terminology is often used interchangeably in the literature. Most of the definitions associated with these terms place a great deal of emphasis on the perspective of origin. There are other definitions that look at mother tongue from different perspectives. For example, Skutnabb-Kangas has provided additional definitions of mother tongue with respect to identification, competence and function. “Mother tongue”, she writes, “is by identification of two kinds: an internal identification (i.e., the language one identifies oneself with) and an external identification (i.e., the language that others associate one with). If competence is the defining element, then one’s mother tongue is the language that one knows best; and finally, mother
tongue by function means the language that one uses most” (Skutnabb-Kangas, 1984 as cited in Wasala 2011,p.2).

The plurality of the definitions associated with mother tongue is a testimony to the interest that the concept has generated over the decades. And yet, it is also difficult to date exactly when and where early discussions surrounding the importance of mother tongue literacy originated. The vernacular advantage theory, which has its roots in Scotland, was coined to advocate the primary importance of education in the mother tongue over foreign languages. Although not many regions in Scotland had schools in the early 1800s, the regions that did have schools struggled with the question of whether Gaelic (the mother tongue of the area) or English (a foreign language) should be used as the medium of instruction. Initially, many schools in Scotland used English and ignored Gaelic for political reasons despite the huge difficulties of communicating in the English language at schools. By the early nineteenth century attitudes toward using English instead of Gaelic as a medium of instruction shifted and many schools started using Gaelic as the MOI (Means Of Instruction). This shift was equated with considerable academic success for children in various schools as educators discovered that Gaelic students learned to read English more easily if they had a basic grounding in Gaelic grammar and literature(Thompson, 1998, pp.10-11, as cited in Cummins, 2000, p.173).

This phenomenon led early Scottish educators and linguists to suggest that literacy in the L1 transfers to L2. This anticipated Cummins’ interdependence hypothesis by demonstrating that, in Thompson’s terms, “academic proficiency transfers across languages, such that students who have developed literacy in their mother tongue will tend to make stronger progress in acquiring a second language” (Thompson, 1998, pp.10-11, as cited in Cummins, 2000, p.173).
The Gaelic case in the early 1800s and Cummins’s work, although very different in context and culture, resemble each other in many ways not only in that they not only stress the significant relationship between mother tongue and second language, but also in that they both emphasize the influence(s) that the mother tongue has on the learning of a second language. Research of this nature was also echoed in most post-independence African countries in the early 1970s, where the teaching of foreign languages at the expense of indigenous languages had become very problematic. Facing a high rate of illiteracy, school dropouts and declining academic standards, many West African countries had no other choice but to engage in radical reforms to reverse these tendencies.

In the context of Senegal, however, despite efforts to follow these countries’ models of education, droves of primary school children go to school every day without a cursory knowledge of how to read and write in their mother tongue, Wolof. Most importantly, a majority of these Wolof children often lack a basic home pre-literacy experience (i.e., environmental print, Wolof alphabet, writing names in Wolof), the importance of which has received favorable mentions in the literature. Most empirical studies on the issue found a strong correlation between pre-literacy experiences at home and successful decoding skills at school (Garton & Pratt, 1989; Koda et al., 2008; McBride-Chang, 2004).

This literature review first briefly examines the early controversy surrounding the issue of bilingual education; it discusses Cummins’ Developmental Interdependence Hypothesis (DIH) along with key studies which have tested it. It then revisits major studies pertaining to the correlation between home literacy and early success at school. Lastly, it analyzes the research evidence on the importance of mother tongue literacy within several African states that have experienced measurable success in implementing early literacy education in the mother tongue.
3.1 The debate over bilingualism

For most of the twentieth century, bilingual education was at the forefront of debates among educators worldwide. Whereas a small number of these educators have extremely negative views with regards to the disadvantages of learning a second language, a considerable number of them have strongly supported the advantages of learning a second language. For instance, among the most distinguished opponents of bilingual education are Lambert et al. (1972), Downing (1974) and Darcy (1953). These bilingual educators considered bilingual education to be a source of “mental confusion” for children learning a second language after the mastery of the L1 (Darcy, 1953; Downing, 1974; Lambert et al., 1972).

Research conducted by these authors has suggested that there is an inherent danger for children in the acquisition of a new language based on the idea that language acquisition contributes to interference with the development of a child’s cognitive system. This radical view was somewhat similar to the behaviorist model developed by John Broadus Watson (1878-1958) early in the 1910s, and later refined by Skinner in the 1930s. These authors emphasize the idea that L2 learners heavily rely on their mother tongue in the process of communicating linguistic forms and meanings in the second language (Bloomfield, 1933; Skinner, 1957; Thorndike, 1932; Watson, 1924). Although these behaviorists suggest that the mother tongue constitutes an obstacle in the L2 acquisition process because of the negative transfer, they could not provide any further evidence to any cognitive impairment, “mental confusion” or “language handicaps” associated with learning a second language (Lambert, 1972).

Over many decades a wide range of definitions have been provided to characterize the bilingual mind. For example, studies by Scandinavian researchers Skutnabb-Kangas and Toukumaa used the concept of “Semibilingualism” to characterize children who develop poor
language skills in both L1 and L2 (Toukoma & Skutnabb-Kangas, 1977). Additionally, Macnamara’s “subtractive” bilingual definition, which proposes that a bilingual child will have to pay for his or her L2 skills with a decrease in L1 skills, contributed in reinforcing the negative idea that surrounded bilingualism in the 1970s (Macnamara, 1966). All of these definitions of bilingualism in the early 1970s were meant to refute the claims of a positive effect of bilingual education. It must be noted, however, that no matter what definition one attributes to bilingualism, it will never be able to wholly encompass the many forms that bilingualism takes. Regardless of the role of the mother tongue, bilingualism has several dimensions. A bilingual can be balanced, with equal proficiency in both languages, or unbalanced and have unequal abilities in both languages.

What should be a matter of concern, however, is the degree to which learners’ L1 either facilitates or inhibits the process of learning a second language. The suggestion that learners who acquire a second language may be cognitively impaired or confused in the process has received little evidence-based support in the literature. This hypothesis needs careful research and scrutiny.

In contrast to the opponents of bilingualism, there are a considerable number of proponents of second language learning and bilingualism. Jim Cummins and others have been strong, vocal supporters of bilingual education and mother tongue literacy. For many decades now, these bilingual educators have convincingly argued that bilingual education helps develop children’s linguistic and cognitive systems, strengthens their first language (L1), and facilitates the learning of the L2. For example, Cummins’ (1979) Developmental Interdependence Hypothesis (DIH) was used in a number of scientific studies to provide more compelling
evidence on the linguistic and cognitive benefits associated with bilingualism and bilingual education (Cummins, 1979; Gonzalez, 1979; Modiano, 1968; Verhoeven, 1994).

The following section examines Cummins’ Developmental Interdependence Hypothesis, and examines in depth the key studies which have tested it.

3.2 L1-L2 relationships

3.2.1 Cummins’s Developmental Interdependence Hypothesis

For many decades now, educators have suspected the existence of a relationship between L1 and L2. Research and discussion on the linkages between L1 and L2 have led to the Developmental Interdependence Hypothesis (DIH) championed by Cummins and later supported by an extensive body of research in the literature (Aarts, 1998; Cummins, 1979; Gonzalez, 1977; Verhoeven & Wagner, 1998). In a series of studies that involved immigrant children in the United States, Cummins (1979, 1981a, 1981b, 1986, 1997) observed that the lack of a strong development of L1 at home caused children to have a low reading performance in L2 English. Most importantly, Cummins has further argued that certain first language knowledge can be positively transferred during the process of second language acquisition. That is, in the context of children’s learning development, the L1 linguistic knowledge and skills a child possesses can be transferred, and become instrumental to the development of corresponding abilities in the L2 acquisition (Zamora, 2000). This view of cross-linguistic transfer from one language to another as indicated in Cummins’ work has been supported by an extensive body of research evidence (Aarts & Verhoeven, 1998; Cummins, 1979; Gonzalez, 1977; Wagner, 1998). Before addressing the reading skills research that has tested Cummins’s Developmental Interdependence Hypothesis, I will briefly reexamine the nature and meaning of language transfer.
3.2.2 Linguistic transfer L1 and L2

The concept of language transfer was first coined by the American linguist Robert Lado (1957) in the 1950s. Although the works of Lado have helped generate additional research on the notion of transfer in general, language transfer has since been conceived within two major theoretical frameworks: Behaviorism and Minimalism. While the behaviorist concept of language transfer emphasizes the mother tongue’s inhibitive role in the process of learning or acquiring new language skills, the minimalist account of language transfer implies that the mother tongue plays a minimal role in the process of learning or acquiring new skills. These conflicting theories helped define the parameters of the concept of transfer, as they fuelled the controversy surrounding the very definition and meaning of language transfer.

3.2.2.1 Controversies over the concept of language transfer

Derived from the Latin *transferre* ("transfer" or "carry over"), the concept of transfer has been the object of a considerable number of studies and definitions (Cook, 2002, 2003; Ellis, 1994; Kellerman, 1995; Odlin, 2005, 1989; Ringbom, 1987; Selinker & Gass, 1983). However, Kellerman (1995) and Odlin (1989) offer what we consider the most accurate and straightforward definitions of the concept. Whereas Odlin defines transfer as “the influence from similarities and differences between the target language and any other language that has been previously [and perhaps imperfectly] acquired”, Kellerman states that “[t]ransfer is the result of learners selectively exploiting their knowledge of the first language while grappling with the complexities of the L2 input” (Kellerman, 1995, pp. 125-143; Odlin, 2005, pp.3-17).

Both Odlin and Kellerman’s definitions emphasize an understanding of the concept of transfer as a process of transferring the linguistic form from one language to another, therefore implying a process of movement from one place to another. It is worth noting that Cook (2002),
by contrast, categorically dismisses the use of the concept of transfer. Instead, he argues that language transfer should be understood and defined beyond a simple movement from distinct places to the idea of overlap and mutual adaptation. “Language acquisition,” he writes, “is not transferring something from one part of the mind to another part but two systems accommodating each other (Cook, 2002, p.78).

Although Cook’s critique of the use of the word “transfer” seems pertinent, he fails to provide a useful substitute for the concept of transfer and, instead, continues to employ the term. Indeed, educators in the field of Second Language Acquisition still use the notion of transfer and that of crosslinguistic influence or crosslinguistic transfer interchangeably. This is in fact a conceptual slippage, as there is a subtle distinction between these two terms. While crosslinguistic transfer appears more neutral in its emphasis on the influential role of the mother tongue in L2 learning, crosslinguistic influence re-emphasizes the negative influence the mother tongue exerts on L2 learners.

Despite the fact that the concept of transfer has been an object of concern in academia, there is no uncontested meaning of transfer. More importantly, what is not fully understood is what is actually being transferred from L1 to L2. The questions of how, when, and in what conditions language transfer occurs in the process of learning a foreign language have not yet been resolved within the SLA field. Although Odlin’s (2005) aforementioned definitions of meaning transfer and conceptual transfer shed new light on what aspects of the first language are being transferred to the second language, his work falls short of providing us with more insight into how and when transfer occurs in the process of acquiring a second language.
These questions have recently led researchers to examine learners’ errors in the L2 in an effort to discover when and how the process of language transfer occurs. The fundamental question of why learners, after being taught a linguistic form over and over again, continue to make the same error has been used as a guiding principle to better understand the complexities of the learners’ cognitive system when learning a second language. Krashen (2003), who explicitly distinguishes between language acquisition and learning, argues that this phenomenon of learners’ recurring errors is explained by how the learner has acquired or learnt a linguistic form in their L1 (Krashen, 2003). However, some linguists, such as Corder (1983), consider learners’ errors to be a simple communication strategy designed to communicate a linguistic form that is absent in their mother tongue. Skinner (1957), among others, views this phenomenon as the effect of carrying over a mother tongue language pattern into the second language. In more generic terms, he suggests that the effect of old knowledge from the mother tongue interferes with new knowledge. Krashen, Corder, and Skinner made significant research efforts to create a better understanding of the origins of L2 learners’ errors, but their studies fall short in providing real answers on when and how language transfer occurs in learning. This particular area needs further research.

3.3 Research evidence on L1-L2 reading skills

It has been frequently observed through Cummins’ hypothesis that L1 and L2 reading scores are very highly correlated (Cummins, 1978, 1983, 1984). Interest in this hypothesis associated with L2 reading development generated a range of studies over the course of the 20th century. I will briefly review those studies on L2 reading development prior to discussing some of the empirical evidence on the crosslinguistic transfer effects of L1 reading skills on L2 reading.
3.3.1 L2-reading development

A considerable number of studies have discussed reading as an essential component of academic learning. It constitutes a vehicle for acquiring knowledge and becoming an informed member of one’s community. Because reading involves complex interactions between different cognitive components (i.e., word recognition, decoding and encoding, metalinguistic awareness, phonological awareness and comprehension), it is a complex mental activity that requires readers to be equipped with these components in order to understand and extract meaning from a text.

L2 reading, then, is not an isolated activity, in the sense that readers must develop and bring to the reading task the skills required to decode a text and understand its meaning accordingly (Pratt & Garton, 1989). Thus, phonological awareness and decoding skills are considered necessary tools in the process of reading comprehension. While phonological awareness development refers to the understanding that different combinations or patterns of sounds in the language convey differences in meaning, decoding skill is the ability that one has to map written words into speech or understand the correspondence between phoneme (sound) and grapheme (letter) of a given language (Garton & Pratt, 1989; Stothard & Hulme, 1995). Unlike phonological awareness, that is considered to be an ability that most children develop early on after birth, decoding skill is an ability that children develop later on as they became more and more exposed to print at home or at school. There is no current research to date exactly when decoding skills and phonological awareness are developed in children but several studies have pointed out to the latter to suggest that a house full of print is more likely to produce children who will be good decoders at school (Adams, 1990; McBride-Chang, 2004).

In their study on the impact of L1 oral proficiency on L2 reading comprehension, Gough and Tunmers (1986) offered the first models to explicitly show the crucial importance of
decoding skills in reading comprehension. For example, in their Simple View of Reading (SVR), 
Reading Comprehension (RC) is understood as the product of Decoding (D) and Listening 
Comprehension (LC), therefore RC = D × LC (Gough & Tunmer, 1986). Their research outcomes 
have demonstrated that the development of basic decoding skills is necessary in the process of 
understanding a text. They laid out a strong theoretical foundation which links successful L2 
reading comprehension with strong decoding skills and their work has inspired many researchers 
to further study L2 reading development and its components.

Adams’s (1990) work on reading builds on the claim that strong decoding skills improve 
reading comprehension. Like Gough and Tunmers, Adams considers reading to be driven by the 
visual recognition of individual letters and sound systems and the mapping of these letters with 
sounds into something meaningful. In her individual letter-sound correspondence theory, Adams 
suggests that readers must recognize which language elements are encoded in the language 
system and precisely deduce how these elements are encoded. Adams suggests that students must 
appreciate the alphabetic principle to become proficient readers. In other words, they must 
acquire a sense of the correspondence between letters and sounds upon which the alphabetic 
principle is based (Adams, 1990).

Adams’s extensive work on reading highlights the importance of developing decoding 
skills and further provides strong evidence that children who encounter reading difficulties at 
school are those who experienced a lack of early exposure to environmental print or poor reading 
skills at home. This view is shared by Koda (1994) whose work on second language reading 
provides strong evidence regarding the correlation between reading comprehension and decoding 
skills. In her analysis of the interaction between text and reader, Koda establishes three major 
levels: decoding, text-information building, and situation-model construction.
On the first level of decoding, the reader is required to have word attack skills, whereby information is extracted from the text; on the second level of text-information building, where extracted ideas are integrated to uncover meaning from the text; and the third level a situation-model construction, where the amalgamated text information is synthesized with prior knowledge (Koda, 2004). Koda’s text-reader interaction aims to show the integrative nature of these competency groups, but most significantly, it emphasizes the skill components associated with reading comprehension. Far from being an isolated activity, reading always involves visual information extraction, information integration, and text meaning, as discussed earlier.

Although the aforementioned studies show clear evidence of the consensus on the necessity of developing these reading skills early in children, there is no globally recognized strategy as to how to teach reading comprehension skills in schools. These different methodologies of teaching reading in schools (the whole-language teaching strategy versus the Phonics strategy) have been a bone of contention among linguists and educators over the past twenty years. While some perceive reading as an indivisible whole, others see it as a constellation of separate elements. In other words, proponents of reading as an indivisible whole emphasize a text-meaning construction process in which the reader has a communicative use of the language (Goodman, 1986), whereas proponents of reading as a set of ‘tools’ place emphasis on the development of these reading skills.

Proponents of the whole-language approach argue that, since the purpose of reading is comprehension, comprehension should be the focal point of education from the start. That is, reading for meaning, without the benefit of explicit letter sound knowledge, may encourage readers to generate their own hypotheses about what will happen next in a given story (McBride-Chang, 2004). Consequently, for many linguists and educators who support this idea, reading
should be taught using the whole language from a top-down approach which consists in knowing the general meaning embedded in the reading material.

In contrast to these views, proponents of the Phonics approach suggest that reading instruction must begin with the development of the skills involved in recognizing written words (Adams, 1990). For example, they stress the importance of the bottom-up approach which provides readers with the necessary reading tools (i.e., decoding skills; knowledge of the alphabet; phonological awareness etc.) to engage in the reading comprehension process (Garton & Pratt, 1989; McBride-Chang, 2004). This phenomenon has been referred to as Phonics. Adams provides a good account for this system when she writes, “Phonics refers to a system of teaching that builds on the alphabetic principle, a system of which a central component is the teaching of correspondence between letters or groups of letters and their pronunciation” (Adams, 1990, p. 340).

An argument could be made that there is no significant conflict between the two sides and their respective strategies to approach reading, because the ultimate goal is to equip children with both decoding skills and communicative skills in the process of reading development. Indeed, Adams’s (1990) questions on the nature of teaching reading to children show that there is no major conflict between the two sides: “So where is the conflict? Don’t we all want children to be able to decipher words and understand them? Yes, of course. Don’t virtually all beginning reading programs endeavor to help children to learn both” (Adams, 1990, p.345).

Adams’ questions carry the weight of a politically charged controversial debate that has failed to address the real issue of L2 reading development for quite some time. In separating reading comprehension skills from other basic skills (i.e., decoding skills), one loses sight of the fundamental principle of what reading is all about. The main purpose of reading is not solely to
comprehend, but also to develop skills involved in recognizing written words and to learn to map spoken elements of a language to the graphic systems that are used to encode those elements.

Both approaches to teaching reading at school must be acknowledged as essentially one and the same; they are indivisible. These basic skills (i.e., decoding and encoding skills and word recognition) are the very tools required for reading comprehension. As the controversy regarding the most effective method of teaching reading has slowly abated, Koda’s (2004) work on the text-reader interaction presented earlier has offered the most compelling argument for viewing these two approaches as two sides of the same coin. Her view dismisses previous conceptions of reading as isolated from other basic cognitive developments. Furthermore, the proposition that L1 reading skills transfer to L2 reading development has been underpinned by a considerable amount of empirical evidence.

The next section closely examines the proposition that L1 reading skills transfer to and aid in L2 acquisition by discussing several supporting studies.

3.3.2 L1 reading skills transfer to L2

Modiano’s (1968) research on the Mexican Mayan-Spanish in Chiapas was one of the first among many studies to provide solid evidence of L1 reading skills transferred to L2. His study, which compares the reading skills of Mexican-Spanish children who received instruction in their mother tongue (Spanish) to other Mexican Spanish children who received no mother tongue instruction in Spanish, is illustrative. Modiano concludes that Mexican Spanish children who develop strong literacy skills in their mother tongue (Spanish) prior to learning English scored significantly higher in English than Mexican Spanish children who do not develop strong literacy skills in Spanish prior to learning English. Modiano’s (1968) study supports both the

González’s (1986) research further supports Modiano’s (1968) findings. He demonstrated that a strong relationship exists between English and Spanish reading skills among Spanish-speaking grade six students in the United States. His study focused on two groups of grade six children attending a bilingual program, who were compared on the basis of measures related to both English and Spanish language skills. The first group was composed of thirty students born in Mexico who attended school there for at least two years before immigrating to the United States. The second group was composed of thirty-eight children who were born in Mexico, but who had immigrated to the United States before beginning school. González (1986) found that Mexican-schooled children performed significantly higher on both Spanish and English reading tasks compared to the US-schooled group (Gonzalez, 1986, 1989). González (1986) shows clear evidence that those Mexican children who develop strong reading skills in their L1 Spanish score higher in L2 reading than Mexican children who develop their L1 Spanish to a lesser extent.

Recent research on the interdependence hypothesis supports the studies of Modiano (1968) and González (1986, 1989). For example, Verhoeven and Aarts’ (1998) studies involving children who reside in Turkey examined the relationships between school-centered literacy and functional literacy in the L1 and L2 of 188 Turkish-speaking children in their first year of Dutch secondary school. The average length of residence in Turkey was about ten years. Additionally, a sample of 140 Dutch-L1 and 276 Turkish-L1 students in Turkey participated in the study.

The functional literacy instrument used was a text from a letter, an article, or a passage in a newspaper that both groups could relate to because these items could be found in both Turkey and the Netherlands. Their research in both schools concluded that the literacy level in Turkish
has an effect on the literacy level in Dutch. Verhoeven and Aarts also contributed further evidence to support the view of interdependency between L1 and L2 literacy skills, and the possibility of cross linguistic transfer of skills from L1 Turkish to L2 Dutch.

What sets Verhoeven and Aarts’s research apart from other studies is their inclusion of a bidirectional transfer-of-skills element. In other words, these Turkish learners can benefit from either their L1 or L2, or from both. Subsequently, others, including, Cook (2003), have conducted further research on the issue of bidirectional transfer.

Equally important is Wagner’s (1998) study of Arabic-speaking and Berber-speaking children. His research, a five-year longitudinal study of literacy acquisition in Moroccan primary school children, aimed to find out whether the early development of reading skills in the L1 makes a difference in children who learn a second language (French). In addressing the question of whether Berber- and Arabic-speaking children achieve different levels of Arabic literacy skills in primary school, Wagner (1998) demonstrates that children who are monolingual speakers of Moroccan Arabic, and are learning to read Standard Arabic, performed better than Berber-monolingual children just beginning to acquire Arabic literacy. He suggests that the advantage that Arabic-monolingual children have over the Berber-monolingual children in the early stages of literacy acquisition has to do with similarity and transfer from spoken Moroccan Arabic to written Standard Arabic (Wagner, 1998). One significant element in Wagner’s (1998) analysis of French-literacy acquisition is that children who perform better in their first literacy—whether Arabic or Berber—perform better in the L2 French regardless of whether this first literacy is in a second language (as is the case for Moroccan Arabic speakers) or a third language (as is the case for Berber speakers).
Wagner’s (1998) study demonstrates that literacy in a second language depends in important ways on first literacy acquisition. Again, this idea is consistent with Cummins’ interdependence hypothesis. What is striking about Wagner’s (1998) longitudinal study, however, is that it not only indicates that there is a relationship between first language Arabic and second language French, but also that literacy acquired in either L1 or L2 increases over time. Studies of this nature have been noticeably absent in the literature, as most studies simply administer predictive measures at the time the L2 study begins, and then follow their participants’ learning over a short period of time, as opposed to an extended period of time.

Sparks, Patton, Gunschow and Humbach (2009) contribute a missing piece to Wagner’s longitudinal study of the relationship between early first language reading skills, and second language reading proficiency. Their research focuses on fifty-four children who were followed over an extended ten-year period beginning in first grade and continuing through high school. The purpose of this study was to measure L2 proficiency in many areas (i.e., word decoding, writing, spelling, reading comprehension, and listening). The reading comprehension consisted of a multiple-choice test and a short paragraph. Results showed that children’s L1 reading skills in the first grade were strongly correlated with their L2 reading comprehension. These findings not only support the interdependence hypothesis, but also suggest the possibility of cross-linguistic transfer of reading skills from L1 to L2 (Sparks et al., 2009).

A thorough examination of the impact(s) of mother tongue literacy on second language learning in the literature has shown clear evidence of an intrinsically positive relationship between literacy skills in the mother tongue and second language literacy skills through various channels of language transfer. Additional scientific studies have even gone further to
demonstrate that pre-literacy experience (i.e., being exposed to print, knowing the alphabet) gained by children at home is corollary to children’s early success in decoding skills at school.

The following section discusses some of the studies on the correlation between pre-literacy experience at home and success at school.

3.4 **Home literacy experience and second language**

As the controversy over the “best” strategies (whole-language or phonics) to use in teaching reading has been dying down in recent years, much focus and attention has been redirected toward children’s reading readiness at school (Clay, 1998; Feitelson & Goldstein, 1986; Goodman et al., 1979; McBride-Chang, 2004; Snow et al., 1998; Stanovich, 2000). According to Adams (1990), a reading-ready child is someone who enters school with a substantial base of proofreading skills, a wealth of reading experience, and knowledge about the pleasures and functions of text. In other words, the reading-ready child is not only required to bring his cultural knowledge to the task of reading, but most importantly, he is expected to bring his own experiences with print.

Given the importance of these early experiences with environmental print for subsequent good reading performance at school, the teaching of print through the alphabet and other literacy skills at home are widely advocated (McBride-Chang, 2004; Snow et al., 1998, Whitehurst & Lonigan, 1998). For instance, in speaking of reading readiness with environmental print, Goodman (1979) posits that children who are widely exposed to print as part of their daily life are at an advantage compared to other children who have not had as much exposure when they enter school (Goodman et al., 1979, pp. 137-154, as cited in McBride-Chang, 2004, p.50). Most importantly, he further identifies three key elements that must be developed for a subsequent reading readiness at school:
1. Fostering an environment of literacy

2. Incorporating literacy into play

3. Reading for a purpose

Although the last two of these three elements are crucial to the reinforcement of children’s reading at school, providing children with a strong environment of literacy (exposure to print; books; word games etc.) for children constitutes a fundamental basis of reading readiness. The vast majority of studies in the literature have conceived home literacy as the building blocks of reading readiness for children at school (McBride-Chang, 2004; Santonich, 2000). In that regard, it is important to “imagine children who have no magnetic letters on their refrigerators, no home computer with word and letter games, no reading classmates in preschool, and no ready supply of papers, pencils, and crayons lying around the house for their use” (Adams, 1990, p.86).

The absence of these literacy devices at home, which Adams is referring to above, has been viewed to be corollary to children’s early difficulties in reading comprehension at school. Home literacy experiences greatly contribute to the enhancement of reading at school in general, and are specifically and strongly associated with strong decoding skills and phonological awareness at school.

The following section will address the importance of home literacy and how both decoding and phonological awareness skills, developed early out of a home-literacy environment, contribute to good reading performance at school.

3.4.1 Home literacy and reading

The importance of home literacy, and therefore environmental print, has been widely advocated in the literature as one of the building blocks of any successful reading at school.
Home literacy is a generic term used to describe an informal learning environment. Readers, especially children, are exposed to a wide range of written print including but not limited to story-books, text-books, journals, newspapers, the internet, and shopping lists. When the home is filled with environmental print, children may begin to develop their awareness and to formulate questions about the importance of reading in general. Beginning to learn about reading or becoming aware of environmental print is clearly the first skill that children develop before they even open up a book. “The likelihood that a child”, Adams writes, “will succeed in the first grade depends, most of all, on how much she or he has already learned about reading before getting there” (Adams, 1990, p.8).

It should also be noted that parents themselves can either foster their children’s reading interest or suppress it; while the home is filled with print, parents have the responsibility to share storybooks with their children through reading. Nevertheless, research indicates that the amount of reading parents do at home varies enormously across cultures. For example, in a typical wealthy American home, parents read to their children almost every day which results in hundreds or thousands of hours of literacy exposure before they enter school (Adams, 1990). This early exposure clearly gives these children an advantage at school when they begin reading. Having an early knowledge of letters of the alphabet helps foster children’s reading.

Treiman and colleagues (2001) have demonstrated that knowledge of letters can facilitate both decoding skills and, most significantly, reading (Treiman et al., 2001). Moreover, if the home is filled with reading activities (e.g., note-writing, list-making, internet-surfing) children will be more inclined to accept reading as a normal way of life rather than as a foreign concept to which they are only introduced when they begin school (Adams, 1990).
Feitelson & Goldstein (1986) found that 60% of pre-school children from neighborhoods in Israel where children do poorly as they progress in later grades did not have a single book in their homes. In contrast to these neighborhoods, pre-school children from neighborhoods where children tended to do well in school had families who owned, on average, 54 books each (Feitelson & Goldstein, 1986, pp. 924-930, as cited in McBride-Chang, 2004, p. 50).

Besides the Israeli case, home literacy is well implemented in most African (e.g., Senegal, Mali, Mauritania etc.) and Asian countries (e.g., China, Hong Kong, and Singapore). In China, for example, many families have devoted special “reading corners” at home where children can incorporate print in their own play by making tickets for a puppet show or signing their names on a piece of artwork (Li & Rao, 2000).

The case of China resembles Senegal in many respects because these “corner schools” also exist across Senegal under a different name. Mostly known as Daaras in Senegal, these “Qur’anic reciting corners” offer an informal education to young children around three to four years old in the Quran. Children who are enrolled in these Daaras are first initiated into the Arabic language, and then gradually taught the very basics of reading, writing and reciting the Quran.

Given the spiritual dimension associated with teaching the Qur’an to young children, the vast majority of Muslim parents in Senegal never miss the opportunity to enroll their children in these Daaras prior to sending them to French schools. What is interesting about Daaras is that children, under the supervision of a sheik, are highly trained in the nursery rhymes and the alphabet of the Qur’an. An argument could be made that teachers in Daaras act as substitutes for many parents in providing children with the aforementioned home environment filled with print. Most significantly, Daaras become the home environment in which children, through the
mediation of self-trained religious leaders, are exposed to early decoding and phonological awareness skills by learning and reciting the Quran.

In addressing this mediation, Bus (2001) found that individual parental responsiveness or teachers’ intervention is a crucial element in the process of storybook reading. For example, parents who are able to engage children in stories by asking follow-up questions and supporting their answers are more successful in maintaining children’s interest in the reading material. By contrast, parents who demonstrate a lack of interest in their children’s reading stifle the children’s interest in reading in general (Bus, 2001).

Although these findings suggest that the home environment greatly facilitates reading from pre-school onwards, parental responsiveness and involvement with children in their early development is perhaps the clearest evidence thus far that the home environment affects reading skills. Reading to children simply might not be enough; another interactive dimension is necessary to strongly engage children in the reading process. In that regard, Vygotsky’s (1978) experimental intervention study has helped to provide solid evidence on the parental role in children’s reading readiness. His Zone of Proximal Developmentxxii (ZPD), which was initially designed to show the amount of help that children can get from their parents, is now being widely used to describe a scaffolding mechanism in which parents intervene in the child’s development of literacy skills. In other words, parents can allow their children to achieve their maximum potential as they support their children’s efforts to learn to read (see Figure 2).
While viewing parent-child interaction as a major form of assistance, Cazden (1983) also proposes three models in which parents may provide assistance to their children. The first model is Scaffolding. Cazden uses and expands Vygotsky’s terminology to differentiate “vertical scaffolding” and “sequential scaffolding”. In vertical scaffolding, the parent provides the child linguistic clues by repeating phrases such as “yes that is a toy” and by asking further questions such as “what is a toy for?” In contrast, sequential scaffolding is usually conducted through the games parents play with their children during meal or bath times.

The second model of parental assistance described by Cazden refers to the Language model. In this model, children are given a linguistic supply in response to their incorrect production of a language form. The last model, known as the Direct Instructional model, pertains to parental assistance to their children in reading and/or language learning in which social conventions (i.e., thank you, you are welcome) are reinforced (Cazden, 1983, as cited in Garton & Pratt, 1989, p.51).
Although the aforementioned research has been theoretical in nature, Whitehurst and colleagues (1988) further provided empirical research to test the impacts of some parents’ involvement in their children’s reading. Their study focused on fifteen middle-class children between the ages of two and three who received a one-hour story reading-training session with their parents. Rather than simply reading to their children, parents were asked to pause and to elaborate on children’s answers in order to provide more than a yes/no answer. In addition, they were also encouraged to provide alternative answers. All parents were tape-recorded during their home reading sessions with children over a one month period (Whitehurst et al., 1988).

The results acquired from the data analyses of these tapes indicated that at the end of the month children whose parents had been trained in reading were eight and one-half months ahead of those children whose parents received no reading training sessions at home. More concretely, children whose parents received training scored higher on tests of verbal expression and vocabulary (Whitehurst et al., 1988).

This study overwhelmingly supports both Vygotsky’s Zone of Proximal Development (ZPD) in reading and Cazden’s reading-assistance model discussed above. It must be noted that all of the models, methods and research which were presented have successfully attempted to provide further accounts of the success of parents’ early intervention with children learning at home. Whether it is through the Vertical or Sequential Scaffolding models and/or the Direct Intervention model, the child’s exposure to home print and the parents’ role to transform the print environment (i.e., newspapers, shopping lists, notebook, books, signs & labels, telephone books, price-tags) continue to be widely advocated in the literature (Adams, 1990; Downing, 1970; Vygotsky, 1962). Adams’s (1990) groundbreaking work on beginning to read, in my opinion, provides the most exhaustive and clear account of the issue of reading as a whole. Most
considerably, her analyses of the interdependencies among measures of reading readiness and achievement in reading indicate that such basic knowledge about print generally serves as the very foundation on which orthographic (decoding) and phonological skills are built (Adams, 1990).

This view of good decoding and phonological skills as being the foundational bases of reading has now received considerable research attention and is supported by research-based evidence.

3.4.2 Decoding skills and reading

A range of researchers who have investigated the reading comprehension of children have focused their attention on the development of decoding skills. Most of their studies link the development of decoding skills with parents’ facilitating their children’s access to print at home (Fries, 1962; Gough, 1972). McBride-Chang supports this by stating that:

Given the importance of early literacy skills for subsequent school performance, […] children who are constantly being made aware of print as a part of daily life are at an advantage when they enter school. When children see that mom reads the newspaper, dad reads an interesting book, a shopping list must be made before going to the grocery store, and sending and receiving (electronic) mail are part of the daily life, they want to get involved in literacy acts as well. (McBride-Chang, 2004, p.49)

Decoding skills, or “the ability to translate [map] written words into speech” as Stothard and Hulme (1995, p.37) define it, constitute a crucial component of reading. Chall’s (1967) extensive review of the literature reports that prereaders’ knowledge of the letter names was a strong predictor of success in early reading development. Building on Chall’s review, Gough & Tunmer (1986) additionally found a strong correlation between learning to decode and learning
to read (Gough & Tunmer, 1986). It is important, however, that these studies are understood in the context of the home environment. The prereaders’ mere knowledge of letter names or the alphabet may not determine their success in reading comprehension at school. Perhaps these prereaders came from homes where interests in reading and activity-based reading are fostered prior to their enrollment in schools. In that particular respect, as discussed earlier, parental involvement and corroboration in the process of reading is of paramount importance. The question of whether teaching children to recognize the letters of the alphabet will give them an advantage in learning to read is still subjected to controversial polemics. A major consensus on that question has yet to be reached in the literature. It must be noted, nevertheless, that while the importance of children’s early development of decoding skills assisting with reading would still be denied by a small cohort of researchers (Goodman, 1973; Smith, 1982) who believe that decoding ability may “distort” or “impede” the acquisition of literacy, numerous studies suggest the contrary (Adams, 1990; Garton & Pratt, 1989; McBride-Chang, 2004). Despite these conflicting studies it remains true that, although decoding is not sufficient for reading comprehension, reading cannot be successfully achieved without strong decoding skills. There is, therefore, an inarguable interdependence between reading and decoding skills. Speaking to the intrinsic interdependence between reading and decoding skills, McBride-Chang (2004, p.29) clearly states that “difficulties with early character and word recognition are major barriers to good reading comprehension”. Elaborating on this assertion of the correlation between reading and decoding, Gough and Tunner (1986) established a mathematical formula which they called the Simple View of Reading model. This model states that reading equals the product of decoding and comprehension, or R=DC, where each variable ranges from 0(nullity) to 1 (perfection). The Simple View of Reading model clearly differentiates reading comprehension from linguistic
comprehension in which lexical information, sentences and discourses are interpreted. Although this division between comprehension and reading seems to be relevant only in the debate between the whole language and phonics approaches of teaching reading, it barely touches on the issue of understanding the effects of decoding skills on reading.

That being said, as confusion over the equal importance between decoding and reading comprehension continues to gain more ground in the literature, Gough and Tunmer’s work is of notable importance today. Many previous studies found a dichotomy between decoding and reading comprehension, and yet these two are, according to Gough and Tunmer, intertwined. Most significantly, they argue that decoding is nothing but a step toward, or another building block of, reading comprehension. This is explicitly corroborated in their observation that, “Even the simple view of reading does not claim that decoding is sufficient for reading, only that it is necessary,” and therefore, “decoding is only a step toward comprehension, for after print is decoded, it must be understood” (Gough & Tunmer, 1986, pp.6-10).

This view of decoding as one of the many components, including phonological or phonemic awareness, contributing to reading comprehension is certainly accurate. Not only do decoding skills, along with phonological awareness, constitute a step toward comprehension, they also form the foundational base of reading comprehension; these skills provide the readers with the very keys that unlock the text. While encouraging all children to receive explicit phonics instruction (Decoding skills), Stanovich (2000) warns of reading difficulty for other children who lack explicit phonic teaching at home by posing a very challenging question: “…if children cannot identify the single words that make up a sentence, paragraph, or story, and keep these in memory long enough to process their meaning, how can they enjoy or learn efficiently through reading?”(Stanovich, 2000, pp.219-235).
A question of this nature may suggest that the controversy over the correlation between decoding skills at home and reading achievement still constitutes the central debate between the phonics and the whole-language approaches. At any rate, perhaps the dichotomist view, which suggests the superiority of a single approach, should be abandoned entirely. All teaching methods should involve materials that combine decoding skills and meaningful content of the print, as decoding, as well as phonological awareness and reading comprehension, can be seen as faces of the same coin.

3.4.3 Phonological awareness and reading

Generally defined as the ability to perceive and manipulate the sounds of spoken words, phonological awareness has been one of the most widely researched topics in recent decades (Stanovich, 1991, as cited in Castles & Coltheart, 2004, p.87). According to Castles and Coltheart (2004), a PsycINFOsearch in January 2003, using the keywords “phonological awareness” or “phonemic awareness”, instantly produced 945 hits, 855 of which were related to materials which were published since 1990. In addition to the phonological processing skill as such, other varieties of phonological processing skills have subsequently been proposed through the literature (Bryant et al., 1987; Denckla & Rudel, 1976). For example, Wagner and Torgesen (1987) identify speed-naming (or rapid automatized naming) and verbal memory as two other primary phonological processing skills. All these phonological processing skills, including phonological awareness, are considered to imply phonological abilities because they all make use of the sound structure of language. The speed naming or rapid automatized processing skills, for example, were used decades ago for clinical utility to distinguish good readers from poor readers, particularly with respect to individuals with dyslexia. To measure these processing skills, the reader (a child) is given stimuli in forms of colors, pictures or symbols to name orally.
and quickly. Verbal memory, in contrast, is a type of phonological processing skill that has been used to measure verbal short-time memory in reading. It consists of providing the reader, in this case a child, with a list of random words to test their memory (McBride-Chang, 2004). Although speed naming and verbal memory are still being used to assess the root difficulties in reading for both learning disabled and non-learning disabled children, the linguistic stimuli and the types of measurements associated with these processing skills still pose a huge challenge for experimenters. For example, the type of response expected from the child may reflect his or her capacity, or incapacity, to map sound with words. Although subject to the same measurement difficulties, phonological awareness continues to receive favorable mentions in the literature. Most significantly, the relationship between phonological awareness and reading performance has never been an object of major disagreement. On the contrary, a solid body of research evidence has been developed in order to demonstrate that the knowledge children have about the different segments of word sounds is indicative of their tendency to read well (Adams, 1990; Brady & Shankweiler, 1991; Goswami & Bryant, 1987; Lundberg, 1999; McBride-Chang, 2004).

This consensus on the crucial role of phonological awareness in reading acquisition was firmly built on two fundamental principles: the phoneme principle and the grapheme principle. With respect to the phoneme principle, it was argued that in order for children to be able to master the reading process they must be able to perceive and learn the correlation between individual sounds of the languages, known here as the phonemes. With respect to the grapheme principle, children must also perceive and learn the letters that represent the sounds, also known as the graphemes.
Given the importance of these two aspects (graphemes and phonemes), phonological awareness might be thought of as an important predictor of reading. In fact, many studies have demonstrated the utility of phonological awareness not only for predicting reading and spelling (Byrne et al., 1992; Catts, 1991; Wagner et al., 1994), but also for distinguishing reading-disabled from non-reading-disabled children and adults (Pennington et al., 1990; Pratt & Brady, 1988). Although these studies are mostly focused on reading ability, which is associated with phonological awareness, tasks of speech perception are more associated with good reading skills and phonological sensitivity (McBride-Chang, 2004).

In assessing children’s phonological awareness, Lundberg et al. (1988) developed research-based training programs which measured children’s sensitivity to the phonemes of given words through a series of games. During the training period, children were confronted with listening games, rhyming, and segmentation of sentences and words into syllables. After the first stage, in which children practiced rhyming and segmenting sentences and words, phonemes were introduced. In the fourth month of training, children started segmenting and blending word-initial phonemes and ended up with word-final and word internal phonemes (Lundberg et al., 1988). Lundberg et al.’s 1988 research indicated that children were better able to read a word if training was not “purely” phonetic and included letter-sound, or phoneme-grapheme relations.

In addition to Lundberg, et al.’s program, a range of other training programs of the same nature have been developed in the past in order to further assess the intrinsic connection between phonological processing and reading. For instance, Vandervelden and Siegel (1997) went further in linking good reading performance with good phonological processing. While using the initial consonant-letter phoneme in the study, children were asked to practice finding the first sound of a word in a set of plastic letters (Vandervelden & Siegel, 1997). This allowed children to
establish the correspondence between print and letters and the sounds associated with it. In addition to providing good quality training for children, these programs both enhance children’s phonological processing skills and, most significantly, develop children’s awareness of the correspondence between speech sounds and words. More recently, others have further argued that awareness of higher level speech units, such as rhymes, will assist children in mapping these sounds onto frequently occurring letter sequences such as ‘ight’ or ‘ing’ (Goswami, 2002). One of the most important studies on the importance of the correspondence between sound, words and subsequent reading in young children was carried out in England by Bryant and colleagues in 1989. In their two-year longitudinal study, they examined 65 children (age 3) to measure children’s sensitivity to rhyme using an Odd-One-Out test. This test consisted of asking children to pick the word that does not belong, based on the phonology of the word. For example, Bryant et al.’s example addressed the situation when children were confronted with a set of words (i.e. fin, win, get) and were asked to take the odd one out. In this case the odd one is “get” because obviously it does not rhyme with either “win” or “fin”. Nevertheless, the “win” and “fin”, although different in meaning, perfectly rhyme with one another (McBride-Chang, 1995, p. 134). Bryant et al.’s study found a strong correlation between children’s sensitivity to rhyme and their reading ability three years later. McBride-Chang further characterized their finding as “impressive”, arguing that, “It [the result] tells us that sensitivity to speech sounds is a relatively stable ability and it is linked to word recognition” (Bryant et al., 1989, pp. 407-428).

Ultimately, McBride-Chang’s characterization is accurate. As most studies have already pointed it out, written language serves as a second-order system of representation. In other words, the words on the page are nothing but the results of words spoken from the mouth. And yet the understanding of the written words always requires the activation of certain processing
skills operating on both phonemes and graphemes. As such, Bryant et al. (1989) and other studies discussed above constitute groundbreaking work as they not only lift the veil over reading disabilities such as Dyslexia\textsuperscript{xxv} or Hyperlexia\textsuperscript{xxvi}, but they also provide strong evidence on the correlation between phonological awareness and good reading performance.

Reading, far from being an isolated process, is a complex mental activity that requires those who undertake the process to deploy a range of strategies before they become good at it. There is no single study in the literature which points to the innate nature of reading. That is, reading is acquired because we are not born good readers; we become good readers by developing reading strategies honed in an environment filled with print. Home literacy has become an indispensable component in juvenile reading development. As discussed earlier, a home filled with print awakens children’s curiosity about reading.

Nevertheless, parental involvement in the process of reading with/to the child, as indicated in Vygostky’s ZPD, is highly successful as it provides them with the necessary tools to tackle reading at school. There is no major disagreement in the literature that good decoding skills and phonological awareness are among the most important tools that a reading-ready child must possess before becoming a good reader. For example, studies provided by Adams (1994), McBride-Chang (2004), Bus (2001), Chall (1967), and Stanovich (1991) give ample solid evidence that good decoding skills and good phonological awareness are strong predictors of early good reading performance at school.

Due to the crucial knowledge of the grapheme-phoneme correspondence, children who have access to this knowledge very early on have an advantage over other children who do not have it. In Africa, specifically in Senegal, despite the noticeable absence of reading-readiness in most homes, the Daaras have significantly contributed in reinforcing that reading-readiness in
children as they are exposed to extensive decoding and phonological awareness in the Arabic language. In this respect, the argument can be made that children who are denied the opportunity to develop reading-readiness at home could still make up these skills with Daaras or “reciting corners”. Most significantly, they would perform better in reading than their counterparts who had never been exposed to Daaras or “reciting corners” prior to going to school. From every angle on the issue of reading, one will find that reading is not a closed process, and what you bring to reading is what you usually get from it; hence the necessity of bringing good decoding skills and good phonological awareness into the process of learning how to read.

The following section discusses some of the research on mother tongue literacy, and reveals the success of such research experiments in various areas of the African continent.

3.5 Research evidence on mother tongue education

Aside from UNESCO’s 1953 report strongly urging African countries to promote literacy education in the mother tongue, research conducted by Africans themselves has provided scientific evidence associated with the benefits of being educated in one’s own language (Akinaso, 1993; Bamgbose, 1983; Diallo, 2005; M’Bow 1953; Wagner, 1993; Williams, 1996).

Although evidence provided by each of these authors reinforces the positive advantage(s) associated with early education in the mother tongue, two studies stand out for their groundbreaking findings. Shortly after UNESCO’s appeal for universal education in the mother tongue in 1953, M’Bow’s (1953a, 1953b) study (conducted in Senegal, particularly in Darou Mousti in the Louga region) was the first in Sub-Saharan Africa to generate research-based evidence on the importance of providing basic education in the mother tongue for young Senegalese children. Arguably, however, the initial idea of educating children in their mother tongue was first advocated by French colonialist, Jean Dard who, in 1817 as a result of teaching
Wolof instead of French to Wolof children, was removed from his position as a school teacher. But until 1953, there was no major scientific evidence available in Senegal to test Jean Dard’s hypothesis of the benefit of educating children in their mother tongue. In that particular respect, the M’Bow study engendered a major breakthrough in the understanding of the importance of early literacy education in the mother tongue. His study, which targeted illiterate children in the rural areas in Louga, found a strong correlation between literacy skills in the mother tongue (Wolof), and professional development for children. Most importantly this “functional literacy”, as M’Bow labeled it, was indicative of children’s contribution in the field of agriculture, health, and environmental protection (M’Bow, 1953a, 1953b, as cited in Diallo 2010, p.139). Although M’Bow’s study generated more interest in the issue of mother tongue literacy in Senegal, it had major limitations. One of the major limitations of M’Bow’s study was to propose through his “functional literacy” a “short term fix” to the long term problem of literacy education in the mother tongue in Senegal. That is, the “functional literacy” he was proposing was good enough to provide illiterate children with basic health education and know-how in the agricultural sector in the context of colonialism, but a more rigorous language policy education engrained in the mother tongue Wolof was needed in Senegal after colonialism.

The other major limitation of M’Bow’s study was that his project of “functional literacy” was beyond the scope of what linguists know now with respect to the effects that mother tongue literacy has on second language learning. This particular limitation is one of the major important limitations that our study will strive to complete. That is, the absence of literacy in the mother tongue Wolof affects literacy in the second language specifically in the areas of French phonological awareness, decoding and reading comprehension skills. Nevertheless, despite the limitations observed in his study, M’Bow laid the groundwork for future study like mine, but
most importantly he inspired several African nations to pledge to eradicate illiteracy. Four years following the independence of most African nations in 1960, a UNESCO conference attended by several African heads of state signed and adopted the “Declaration on the Eradication of Illiteracy” which pledged to eradicate illiteracy within a 10 year span from 1962-1971 (Diallo, 2010). This literacy awakening paved the way and allocated considerable resources to further research in education in the mother tongue in schools in Africa. Unlike M’Bow’s (1953a, 1953b) study that was directed to a vast rural population sample, recent research conducted by Williams (1996) was mostly focused on school children in Malawi and Zambia. Williams’ (1996) study constituted the first of its kind in a comparative study to research the impact of mother tongue literacy on the learning of other languages. In examining the impact of language of instruction on reading ability in L1 and L2 for children in both Malawi and Zambia, Williams administered an English reading test and a local language reading test. In Malawi, Chichewa (mother tongue) is the medium of instruction for 4 years (from 1st year to 4th year) with English (foreign language) taught later as a subject. In Zambia, however, English (foreign language) is the medium of instruction with one of the seven local languages taught as a subject (Williams, 1996). Interestingly, Williams found no significant difference in English reading ability between students in Malawi and students in Zambia, and this despite the huge difference in the amount of English instruction that Zambian children were exposed to. In other words, despite the late acquisition of literacy in English for many children in Malawi, these children had equal ability in reading with their counterparts in Zambia. Because of Zambian children’s early exposure to English, we expected these children to outperform the Malawi children who did not have an early exposure to English.
What Williams’ (1996) findings might have suggested is that literacy skills in the L1 transfer to literacy skills in L2, which, in turn, may explain why even with a late acquisition of L2 English literacy skills, Malawi children were able to read English as well as their counterparts. This cross-linguistic transfer from L1 to L2 that Williams discovered in his study has been echoed by a plethora of research across the world (Aarts & Verhoeven, 1998; Cummins 2000, 1984; Koda et al., 2008; Sparks et al., 2009; Tse et al., 2010; Verhoeven, 1994).

In the light of these studies, major efforts have been deployed towards implementing education in indigenous languages. However, few African countries have been fully successful in putting in place rigorous early education programs allowing school children to acquire literacy in their mother tongue.

3.5.1 Successful experiments of mother tongue education in Africa

In the aftermath of colonialism, a small cohort of West African states have started breaking away from their former colonialist language policies to embrace a policy of literacy education exclusively conducted in the indigenous languages. However, literacy and education in the mother tongue was not well received in Africa until the early 1970s. This slow progress to promote education in the mother tongue was due in part to the nature of the goals that both the French and British colonial authorities had previously set for their respective colonies in Africa. Whereas France chose an assimilation policy through the French language, the British opted for a “separate development” policy. According to Bamgbose (1983), the French envisaged, in their policy of assimilation, the possibility of bringing the colonial subjects to a reasonable educational level so that they could be absorbed into the culture of the colonizing power; the British attempted to give the colonial subjects free scope to develop in their own way outside the culture of the colonizing power (Bamgbose, 1983).
Bamgbose’s (1983) description of these divergent policies is accurate in that most former English speaking colonized countries in Africa after independence were not facing any major obstacles to implementing literacy education in the indigenous languages. That is, in most British colonies, the colonial subjects were given minimum “latitude” to use their indigenous languages, which was not the case in French colonies where the indigenous people were assimilated into the French language, as indicated earlier by Bamgbose.

As a result of the Regional Conference of Ministers of Education held in Lagos in 1976, the Universal Primary Education (UPE) was introduced in most primary schools in Nigeria allowing millions of Nigerian children to start learning in their mother tongue. Although many argued that the establishment of the UPE was a means for the Nigerian authorities to alleviate the huge challenge of providing education in a country where more than 300 languages were spoken, the UPE helped the language of education to be “related to the child’s home experience and background” (Bamgbose, 1983; Diallo, 2011; Fakeye & Soyinka, 2009). Today in a school course of six years, language instruction must be given entirely and exclusively through the medium of vernacular languages (MTM; Mother Tongue Medium), and English (FM; Foreign Medium) will be later introduced as a subject.

Nigeria was not the only West African English-speaking country to bring about that change in its educational system after independence. The republic of Ghana, another former British colony, supported early on literacy education in the mother tongue. According to Dakubu (2000) and Chatry-Komareck (2003 & 2007), the mother tongue is exclusively used as the Medium of Instruction (MOI) in school throughout the first three years of primary education (Dakubu, 2000 & Chatry-Komareck, 2003-2007; as cited in Diallo 2011, p. 215). But most
significantly, in recent years Ghana has embarked on large-scale literacy and education in the mother tongue campaigns that later serve as models for many neighboring countries in Africa.

Similar trends are evident in other African francophone countries. In Burkina Faso, Mali and Niger, efforts have been made to speed up the process of literacy and education in the mother tongue programs. For example, Burkina Faso is one of the few African countries to successfully implement bilingual education since its introduction into the educational system in 1994. The bilingual education, which consists in emphasizing literacy in the child’s first language, was first implemented in two schools only as an experiment. For the first time in the history of the country a national language (Mooré), was used at a rate of 90% and a foreign language (French) at a rate of 10%, as a subject, at the primary school level. Most significantly, between 1998 and 2002, the experiment was extended to more than 40 schools in 28 provinces. The experiment was crowned with success, and it was consequently expanded nationwide reaching 13 regions of the country (Ilboudo, 2009).

Burkina Faso’s success in its bilingual education can certainly be attributed, in large part, to the educational schema and mechanism put in place by the authorities. The bilingual education school is organized in three phases. In the first phase, known as Espaces d’Éveil Éducatifs (Educational Awakening Spaces), children of ages 3 to 6 are trained and taught in their mother tongue. In the second phase, known as Écoles Primaires Bilingues [Bilingual Primary School], children of ages 7 to 11 are allowed to learn a foreign language. In the third and final phase, known as Collèges Multilingues [Multilingual Colleges], children of ages 12 to 16 are taught specific subjects and ethics through French and Mooré (Ilboudo, 2009). Reviewing the Burkina Faso experience of using the national languages, Ilboudo (2009) reached the conclusion that, from an academic point of view, bilingual education that first nurtures children in their mother
tongue and exposes them later to foreign language learning is the only way to achieve sound academic results (Diallo, 2012).

Similarly to the Burkina Faso case, both Mali and Niger have also engaged in major educational reforms that give primary importance to early mother-tongue education. In Mali, the reform took the form of what has been known as Pédagogie Convergente (PC) (Convergent Pedagogy), which was later improved and renamed to become Éducation Intégrée (EI) (Integrated Education) (Diallo, 2012). This Integrated Education aims to give the child the tools, after being fully immersed into his/her mother tongue, to transition to learning the second language (see Maurer’s (2007) work, on De la pédagogie convergente à la didactique intégrée : langues africaines-langue française).

Since the introduction of the EI, Mali has been very successful in its early mother tongue education reform. In fact, the success of its early mother tongue education model has led neighboring countries like Senegal to dispatch language experts to try the model in several primary schools in Senegal.

In Niger, the bilingual mother-tongue experiment was in full swing in 1973 when Hausa, the dominant indigenous language, was used as a medium of instruction at the primary school level. Nevertheless, Niger’s model of literacy and education stands out among the other models tried in Mali and Burkina Faso in that it places a stronger emphasis on the cognitive and psychological dimensions associated with literacy in the mother tongue. For example, in the specific plan of action laid out for the Niger bilingual education, it is clearly stated that “[…] l’univers scolaire ne soit plus pour l’élève, un monde étranger; mais un lieu où il s’accomplit en vue d’une insertion harmonieuse dans sa société” (Amani et al., 2005, p.27) […] the school
environment is no longer a foreign world for the student, but a place where (s)he is prepared for a smooth integration into society”].

This statement is replete with pedagogical meaning, not only for the cognitive development of the child who learns literacy in his or her mother tongue, but it reinforces the early assumption made by Cummins in his threshold hypothesis which stipulates that “…an overall superiority on the examined measures was found only for those children who have attained a high degree of bilingualism” (Cummins, 2000, p.173; see also Mohanty, 1994, Ricciadelli, 1992, 1993). What Cummins and others suggested was that a lower level or even an absence of literacy skills in the mother tongue may have cognitive impact on children while learning a second language. Speaking of the cognitive development associated with early development of the mother tongues, Cummins (1979) writes:

The basis for the possible attainment of the threshold level of L2 competence seems to be the level attained in the mother tongue. If in an early stage of its development a minority child finds itself in a foreign-language learning environment without contemporaneously receiving the requisite support in its mother tongue, the development of its skill in the mother tongue will slow down or even cease, leaving the child without a basis for learning the second language well enough to attain the threshold level in it. (Cummins, 1979, p.28)

It is clear that, since the independence of Africa, there have been a range of successful mother tongue education experiments and programs across the continent, but most effectively in Nigeria, Ghana, Burkina Faso, Mali and Niger. These individual successes were possible because of a well-developed body of applied academic research that emphasized the importance of mother-tongue education. Nevertheless, while many African governments are still aiming for an
education exclusively conducted in the nation’s mother tongue(s), a great majority of these African governments are lacking the resources and the proper educational training to make mother tongue education the centerpiece of their educational reform.

In this literature review, we have demonstrated that despite the controversy surrounding bilingual education, a wide range of studies have strongly established a relationship between mother tongue literacy and second language learning. At the center of all these studies on the issue of mother tongue education and second language learning, Cummins has been the most distinguished and vocal bilingual education researcher, who firmly established linkages between literacy skills in the mother tongue and second language literacy skills. As a result of his Developmental Interdependence Hypothesis, several scientific studies have almost unanimously concluded that literacy skills developed in the mother tongue can be transferred in learning or acquiring a second language. Most significantly, Koda et al., (2008) have currently identified more than 112 publications on the transfer of reading skills from the L1 to the L2. This number demonstrates the significant amount of global resources being dedicated to the successful acquisition of knowledge, and to mapping of a clear path to understanding language acquisition and transfer – particularly for the purposes of eradicating illiteracy.

This experimental study examined the importance of mother tongue literacy before the acquisition of an additional language in Senegal. We will discuss below my findings that in the absence of literacy skills in first language Wolof, children who acquired some notions of reading and the printed word through the Arabic language learned in the Qur’anic schooling were aided in the process of learning French. The evidence showed that in the context of French instruction, Wolof children who could not read or write in their mother tongue Wolof but who became
acquainted with the written form of Arabic (preliteracy) presented an advantage over children who lacked such knowledge.

3.6 The present research

In this experimental study, we investigated the phonological awareness, decoding and comprehension skills of L1 Wolof learners of L2 French in Senegal. L1 Wolof children in Senegal do not develop their first literacy in their mother tongue, Wolof. Therefore it is argued in this research that the absence of literacy in the mother tongue hinders the development of literacy in the second language French for these Wolof children. As reported in the literature review, Cummins (2000) has provided research evidence outlining a Developmental Interdependence Hypothesis (DIH) which examines the links between first language literacy and second language learning (Cummins, 1979, 1984, 2000). In that respect, this thesis intends to test Cummins’ hypothesis and to further explore the impact(s) (if any) of the absence of literacy in the mother tongue on second language learning, specifically in the areas of L2 French phonological awareness, decoding skills and reading comprehension in the first year of elementary school. This thesis also investigates the direct impact(s) of literacy in the Arabic language on second language learning of French in the first year of elementary school. While a group of Wolof children (hereafter Qur’anic children) in Gaindé Fatma elementary school in Touba develop their first literacy in a second language —Arabic—through informal Qur’anic schooling, another group of Wolof children (hereafter Non-Qur’anic children) in Daroukhane B in Dakar has no literacy in neither their mother tongue Wolof or the third language Arabic (Arabic is officially ranked as a third language after French in Senegal). In other words, children who belong to the latter group approach the French language having little instruction or no previous training in encoding or decoding the written form of any language.
More precisely, children of Muslim families have the possibility of accessing the Arabic language while learning the Quran. This informal schooling is called Daara or Qur’anic schooling. Prior to colonization in the middle of the seventeenth century in Senegal, Islam started to take root in the sub-Saharan areas of West Africa like Senegal (Diagne, 2004). With this rapid growth of Islamic states, a large number of Islamic literacy centers (Daaras) were established in Senegal and in several West African countries (Diallo, 2012). Although there are no current figures available for the number of these Qur’anic schools in Senegal today, a great majority of them are concentrated in the Senegalese rural areas and holy cities (i.e., Touba, Tiwawone). Many practicing Muslim families in Senegal view it as a spiritual duty to initiate their children in the Quran. By doing so, they encourage children to develop literacy skills in the Arabic language prior to learning French. In these Qur’anic schools, children are introduced to the knowledge of the Arabic language through the Quran as teachers spend several hours reciting selected excerpts of the Qur’anic text to children. In these Qur’anic schools, children receive both oral and written inputs as teachers work with them on an individual basis to instruct them to recite, read and transcribe excerpts of the Qur’anic tablets. Of importance for this study is the fact that when Qur’anic children begin to develop literacy skills in French, they are not in a vacuum. Instead, they may draw on their previous experience from Arabic to decode French words, associate sound sequences with their written representations, among others. It is worth noting that despite the difference between these highly constraining orthographies (French and Arabic), there is a solid research evidence that the alphabetic knowledge acquired in decoding the Qur’anic text without understanding its meaning could transfer to the decoding of French text (See Wagner(1998)’s study on first year Moroccan children learning French).
In contrast, there is a minority of non-practicing Muslim families and a majority of Christian families who do not require their children to study Arabic. As a result, children lack the experience of receiving oral and written input in Arabic. Unlike the Qur’anic children whose parents promote literacy in Arabic prior to French instruction, parents from Non-Qur’anic children encourage their children to develop their first literacy skills directly in the French language. That is, Non-Qur’anic children have a first encounter with the written word in a formal instructional context (i.e., the school), in the French language (not in Arabic), and having little or no previous experience processing the written form of any language. Finally, most of the Non-Qur’anic groups are found in the capital city Dakar and its surrounding areas (i.e., Popenguine, Daroukhane B).

The literacy gap between these Qur’anic and Non-Qur’anic groups has generated interest over the impact(s), if any, that early mother tongue literacy or early exposure to informal Qur’anic schooling would have on Wolof children’s phonological awareness, decoding skills and reading comprehension skills in their first year French at the elementary school. A solid body of research evidence in the SLA literature has found both phonological awareness and decoding skills to be some of the most important building blocks for success in reading comprehension (Adams, 1990; Castles & Coltheart, 2004; McBride-Chang, 2004; Stanovich, 1991).

Given the importance of identifying phonemes and graphemes in words as pointed out in this literature review, phonological awareness can be an important predictor for success in reading. Like phonological awareness, decoding skill is another important component and predictor of success in reading. Generally, decoding skills are defined as the ability that one has to map written words into speech and they are also thought to be strong predictors of success in early reading development (see Chall, 1967; Gough & Tunmer, 1986; Stothard & Hulme, 1995).
Although various questions related to mother tongue literacy and second language learning have been generally reported in the SLA literature (Cummins, 1979; Gonzalez, 1986; McBride-Chang, 2004; Wagner, 1998), the specific questions provided below were developed to address the absence of literacy in the mother tongue Wolof and the direct impact(s) of literacy in the Arabic language on the development of literacy in French. While most of the studies reviewed above deal with learners who have already developed their mother tongue before learning another language, little research is available on how individuals who are partially literate in one language develop literacy in a foreign language. This type of situation is very common in developing countries like Senegal within the structure of the Qur’anic schools as explained earlier. Not only has the Senegalese government fallen short in its recent attempts (2000-2005) to develop a rigorous mother tongue literacy program for children, no major research has been conducted in Senegal to examine the effects of the absence of literacy in the mother tongue Wolof on second language learning or the direct impact(s) of early literacy in Arabic on the learning of French.

3.6.1 Research questions

3.6.1.1 Research question 1

How do Wolof children’s early experiences with sound discrimination in Arabic through the Quran reflect on their L2 French phonological skills in French (i.e., phonological awareness) at school?

3.6.1.2 Research question 2

To what extent does Wolof children’s lack of early exposure to print in their first language at home or Qur’anic school (i.e., Non-Qur’anic children) affect their decoding skills in French at school?
3.6.1.3 Research question 3

To what extent does Wolof children’s early exposure to reading materials at home or Qur’anic school (Qur’anic group) affect their reading skills at school?

3.6.1.4 Research question 4

To what extent does parental intervention to help children decode and read at home affect children’s decoding and reading skills at school?

3.6.2 Research hypotheses

3.6.2.1 Research hypothesis 1

The knowledge of the individual sounds of languages has received considerable attention in the field of SLA (Bryant et al., 1989; Bradlow et al. 1999). Among those studies, Bryant et al. conducted an interesting study on children in England. Looking at knowledge of nursery rhymes among 65 children (average age 3 years old), they discovered that these children’s knowledge of nursery rhymes was strongly related to their sensitivity to rhyme and to reading later at school (McBride-Chang, 2004). Extending this study to the Qur’anic and Non-Qur’anic groups of children in Senegal, early experiences with sound discrimination in Arabic as an additional language through the informal Qur’anic school sessions likely enhance children’s skills to later discriminate sequences of vowel and consonant sounds in French words at school. That is, children’s ears may become more sensitive to processing aural input of a language other than their first language Wolof; hence they can identify words from non-words or words with similar acoustic properties. Thus, we hypothesize that when presented with listening tasks, Qur’anic children compared to the Non-Qur’anic group will show higher levels of L2 French phonological awareness at school. That is, Qur’anic children more so than Non-Qur’anic children will be more accurate at discriminating actual French words whose vowel and consonant sound structure
pattern into similar rhyme sequences vis-à-vis words whose sound structure do not fit such rhyme sequences.

3.6.2.2 Research hypothesis 2

The development of early literacy skills for children at home has been widely encouraged in the SLA literature; and a considerable body of research considers early experiences with print to be a fundamental prerequisite for decoding skills and reading readiness at school (Adams, 1990; McBride-Chang, 2004; Snow et al., 1998; Stanovich, 2000; Whitehurst & Lonigan, 1998). That is, children who are exposed to print materials (i.e., letter-word games, written alphabet, picture-word textbooks) are more likely to do well in decoding skills in school compared to other children who do not have that opportunity. Thus, we hypothesize that when presented with print materials through the Arabic language (i.e., learning the Arabic alphabet, decoding the Qur’anic text; rewriting the excerpts of the Quran on tablets), Qur’anic children will show higher levels of L2 French decoding skills compared to Non-Qur’anic children. In other words, Qur’anic children with their early decoding skills experience in the Qur’anic text will be more accurate in decoding a set of words in French and associating them with their corresponding visual referents.

3.6.2.3 Research hypothesis 3

The importance of home literacy not only leads to good decoding skills for children at school, but it also leads to success in reading comprehension. The home literacy, because it entails the active participation of parents in the reading process, constitutes a strong predictor for children’s early success in reading comprehension at school. A wide range of studies conducted in home literacy has concluded that a home filled with reading materials (i.e., note-writing; list-making, internet-surfing, journals, textbooks) significantly prepares children to accept reading as a normal way of life rather than a foreign concept (Adams, 1990; Feitelson & Goldstein, 1986).
Although these findings firmly establish a close relationship between home literacy and school literacy, Cummins’ cross-linguistic transfer hypothesis went further to demonstrate that L1 reading skills are highly correlated with L2 reading skills (Cummins, 1978, 1983, 1984). That is, reading skills acquired in the mother tongue will transfer during reading in an L2. Based on Cummins’ premise, we hypothesize that the lack of reading skills in Wolof at home (or in Arabic through the Qur’anic schooling) hinders the acquisition of reading comprehension in L2 French. Thus, when presented with reading materials in French at school, Non-Qur’anic children compared to Qur’anic children will show lower levels of L2 French reading comprehension. In other words, Non-Qur’anic children, because of their lack of reading skills in Wolof and Arabic, would not be able to transfer any reading skills to the L2 French reading comprehension task.

3.6.2.4 Research hypothesis 4

As indicated in our literature review, parental role in children’s reading readiness and decoding skills at home has received considerable attention in the SLA literature (Adams, 1990; Cazden, 1983; Garton & Pratt, 1989; McBride-Chang, 2004; Whitehurst et al., 1988). Most of these studies overwhelmingly support the view that child’s success in decoding and reading at school largely depends on the help that the child receives at home. Among these studies, Vygotsky’s (1978) experimental intervention study (Zone of Proximal Development) has provided further evidence on the parental role in children’s decoding and reading readiness. Thus, we hypothesize that parental intervention to help children decode and read at home has significant positive impact on children’s decoding and reading at school. In other words, Qur’anic children who get help from their parents to decode and read the Qur’anic text at home will most likely outperform the Non-Qur’anic children who appear not to have that opportunity at home.
The following chapter outlines the methodology and provides a procedural outline for the research conducted. An initial presentation of the research preliminaries and the targeted population sample will be followed by an explanation of the collection and implementation of qualitative and quantitative data.
Chapter 4: Methodology

4.1 Research preliminaries and guidelines

Prior to engaging in the data collection process, a certificate of approval was granted by Behavioral Research Ethics Board (BREB) of the University of British Columbia. This certificate of approval from BREB showed that this office has reviewed the procedures of our research and found them to be acceptable on ethical grounds for research involving human subjects. In addition to this certificate of approval from BREB, a permission to conduct research was also granted by Gaindé Fatma and Daroukhane B elementary schools where the study was carried out. Prior to conducting the research, a letter that clearly spelled out our intention to carry out doctoral research involving human subjects was sent to each school authority. By granting this permission, these school authorities allowed us to begin the research with one hundred twenty human subjects (the children and their parents). I was the direct contact to participants but the school principals and the five volunteers recruited in the beginning of the research helped us to organize the meeting with participants in each school. After receiving this permission, we met with participants in each school district and informed them all of the content and objectives of the research. That is, we provided them with consent forms (these were picked up from the school) a week before the study began, which gave them ample time to ask questions, voice their opinions and/or decide whether they would take part in the research or opt out (Parents signed their consent forms and at the same time authorized their children to participate to the study, and all signed forms were returned to us at the school). That is, all participants in each school district were invited to come to participate to a meeting during which we communicated to them the content of the consent forms and, most importantly what signing or not signing these consent forms would mean to them and to their children. This meeting was conducted in both Wolof and
French, therefore the consent forms were read in French and their content was communicated to participants in Wolof as well. In our first meeting with participants at Gaindé Fatma elementary school, a first pool of eighty-five people showed up, and seventy two people picked up the consent forms, but only sixty three of them returned the consent forms to us duly signed. Two participants signed the consent forms but never showed up during the data collection process, and one participant did complete the odd-one-out task but did not complete the rest of the tasks. In the end, a pool of sixty parents (thirty children and their parents) from Gaindé Fatma elementary school participated in this study.

With respect to Daroukhane B, an initial pool of one hundred people showed up in our first meeting, ninety of them picked up the consent forms, but only seventy of them returned the consent forms to us duly signed. Five participants withdrew from the research during the collection of data and two participants did two tests (odd-one-out and picture-word identification & association) and did not complete the reading comprehension and questionnaire. In the end, a pool of sixty participants (thirty children and their parents) from Daroukhane B elementary school participated to this research.

By the time the research started, all participants responded favorably to being part of the research on a voluntary and anonymous basis. Therefore, in an effort to respect and protect participants’ identities, various codes were used across gender and groups throughout the data collection and analysis process. Across gender, while a participant male child was labeled as B, a participant female child was labeled G. Each letter was also matched to a number according to the sequence of participation (e.g., B1 meant the first boy in the group, B2 meant the second boy in the group, G2 meant the second girl in the group and G15 meant the fifteenth girl in the group, etc.).
The administration of the research tests involved a collaborative effort between the principal investigator, the elementary school district in Touba and the elementary school district in Daroukhane B. The administration of each test to each child was conducted with me alone in the classroom, and after each participant was informed of the fact participation in the test would not affect their standing in the French class. Children’s parents were initially informed of that important factor during meetings held in each school. This was to avoid any potential intimidation or biases in the result outcomes. Moreover, we clearly communicated to parents and their children who participated in this research that we will be using the terms “Qur’anic” and “Non-Qur’anic” throughout our research for linguistic purposes only. Therefore, the use of these terms is not meant to place any value judgment on participants’ religious affiliation or actions.

The following section provides a more detailed description of the population sample and procedure of the data collection process.

4.2 Population sample

Sixty Wolof child learners of L2 French were recruited from grade 1 classes at two elementary schools in Senegal (Gaindé Fatma elementary school in Touba and Daroukhane B elementary school in Dakar). Children in these two school districts have different experiences prior to learning L2 French. That is, children recruited from Gaindé Fatma elementary school in Touba primary receive an early pre-schooling education in Arabic through the Quran before they learn L2 French. For this group of children in Touba, early exposure to language first begins with Wolof, then Arabic and lastly with French. Conversely, the group of children recruited from Daroukhane B school district developed no form of preliteracy in Arabic or in any language prior to learning French. For this group of children in Dakar, early exposure to language first begins with Wolof, then French, and may or may not be followed with Arabic in their subsequent
years of schooling. In addition to the sixty Wolof children recruited from those elementary schools, sixty of these children’s parents were also recruited to complete a semi-structured interview. The decision to recruit these children’s parents to participate in this semi-structured interview was motivated by the crucial information we wanted to gather from parents with respect to their children’s general preliteracy and exposure to print at home.

The description of this study’s population sample is broken into three main sections. Section one begins by discussing Gaindé Fatma elementary school district and then describes the participants (Qur’anic children and Qur’anic parents) from the district of Touba. Section two begins by discussing Daroukhane B elementary school district and then describes the participants (Non-Qur’anic children and Non-Qur’anic parents) from the district of Daroukhane B. And lastly, section three provides a general discussion on the volunteers recruited for this study to help with the data collection process and the administration of tests.

4.2.1 Gaindé Fatma Elementary School

The school district of Gaindé Fatma is located in Touba in the heart of the region of Diourbel (one of the fourteen regions located in the Western part of Senegal). This city was created in 1884 by the well-known spiritual leader Cheikh Ahmadou Bamba (Babou, 2007). Since its creation, Touba has been the spiritual heart of the doctrine of Muridiyya whose founder, Cheikh Ahmadou Bamba (1852-1927), fought against French colonialism, and therefore any establishment of French school in his city was systematically forbidden (please refer to chapter 2 for more information on Bamba and colonialism). Until the 1980s, there was no French school in the city of Touba despite the growing numbers of Qur’anic schools across the city. Thanks to the late Cheikh Gaindé Fatma Mbacke, grandson of Cheikh Ahmadou Bamba, two elementary schools were established amidst internal conflicts, boycotts and sabotage from radical spiritual
leaders who saw the presence of French schools in the city as a betrayal of the very doctrine and teachings of Bamba. As a result of those boycotts and daily intimidations from local religious communities, early enrolments in these French schools were very low. Although there are no current written official figures about the nature of those early student enrolments in Gaindé Fatma elementary school, it has been orally reported, among the older inhabitants of the city of Touba, that early enrolments consisted of Cheikh Gaindé Fatima’s immediate relatives (i.e., Fatima’s sons and daughters). It is worth noting that Cheikh Gaindé Fatma’s firm belief in knowledge and openness to the outside world led to the establishment of two elementary schools that bear his name today. However, these French elementary schools still play a secondary role in comparison to the Qur’anic schools across Touba. That is, it has been and still remains a commonly shared belief among the inhabitants of Touba that the learning of the Quran should always precede the learning of the French language, if necessary. As a result, an overwhelming majority of the student population sample recruited from the Gaindé Fatma elementary school came from households where they were required to learn the Quran prior to studying French. Because of their preliteracy experience with the Arabic language through Qur’anic schooling, these Wolof children were labeled in this study as the Qur’anic group as mentioned earlier. The rationale behind choosing our participants in their 1st year and not 2nd or 3rd year is that further exposure to French could bridge the gap between the Qur’anic and Non-Qur’anic group. In other words, the difference between these two groups could be assessed more clearly when these children’s performance are contrasted at the end of their 1st year of exposure to the French language.
4.2.1.1 Qur’anic children population

Thirty Qur’anic children were recruited from one elementary school of roughly 615 students, 110 of whom were enrolled in their first year. 63 % (N=19) of the total were girls, and 37 % (N=11) were boys, and their ages ranged from 5 to 6 years old (M=5.8, SD=2.3). Participants were recruited on a voluntary basis; therefore they were not paid to participate in this study. The investigator sought permission from parents to have their children participate in the study. With this aim, the investigator had the parents sign Assent Forms in which they clearly learned about the objectives of the study, the tasks and the procedure. The information was clearly spelled out in written form and explained to participants orally in French and in their native language Wolof.

All parents were given ample time (8 days) to decide whether they would allow their children to participate in the study or not. Parents who accepted to be part of the study were required to sign the Assent Form and return it to the Gaindé Fatma school district within eight days. The researcher also indicated that if parents refused to join the study they did not have to sign the Assent Form and let the school district know so that their names would be removed from the list of potential participants. From those who accepted, both children and parents were invited to participate to a meeting during which the nature and objectives of this study, as well as the ethical standards (i.e., respect of participants’ privacy—name, socio-economic status and religious affiliations) and safety procedures (i.e., protect participants ‘physical integrity and intellectual abilities) were discussed at length. The meeting was held in Wolof and children and their parents were allowed to ask questions or request clarification prior to their involvement in the study.
After receiving permission from these thirty parents, the researcher further directed his focus on children to find out more about how they learned and in what educational context they were taught. For example, the researcher found out that all these thirty children followed a regular school day starting from 8 am and ending at 3 pm with a lunch break from 1 pm to 2 pm. Children’s access to technology in the classroom was very limited; therefore, most of the learning was conducted through verbal lecturing from instructors while students listened and took notes. Although there was a school body of 19 instructors (9 females and 10 males) with different teaching styles, the commonly observed method of learning that children received from these instructors at Gaindé Fatma elementary school was mostly teacher-centered. In other words, children were taught through lecturing activities during which they repeated after the instructor and reproduced in writing what they heard. It is worth noting that most teachers in this school do not use the target language (French) to teach children all the time. Instead, teachers oftentimes mixed the Wolof language with French during lectures. Moreover, children were not severely punished in most cases compared to children in the Non-Qur’anic group at Daroukhane B elementary school. The majority of the teachers at Gaindé Fatma elementary school do not punish their students for failing to speak the French language in the classroom. Interestingly though, at the Qur’anic school these children may receive corporal punishment for failing to recite the sacred text correctly and accurately. The idea is that Quran is considered by Muslims as a holy book where God directly communicated with the whole of mankind, one should never make an error while reading or reciting it (see Kane, 1962, p.4).

This corporal punishment we witnessed in many Qur’anic schools in Toubawas considered by many Qur’anic teachersto be an effective method of teaching. For the majority of these Qur’anic teachers, this corporal punishment helped children read and recite the
Quran correctly and accurately. This has a major implication for our research in that this teaching method perhaps had significant impact on how Qur’anic children approached the tasks of decoding and reading a French text. As discussion of our research findings will show later, it appears that these Qur’anic children somehow internalized this sense of correctness and accuracy very early on and applied them when presented with tasks of decoding and reading a French text at school. It would be interesting, however, to find out why the Non-Qur’anic children who also received corporal punishment while learning French in the classroom were not as correct and accurate than the Qur’anic children at decoding and reading a text in French. This is certainly an area of research that needs further scrutiny in the future.

Likewise parent-teacher conferences happen only twice a year—the beginning of the school year (where parents were required to come to school to register their children)—and at the end of the school year (during which parents were summoned to come to inquire about their children’s final grade reports). Nevertheless, as the section dedicated to parents shows, the majority of the thirty Wolof Qur’anic children who participated in this study all admitted getting help from their parents with reading the Quran, but not with their French homework.

4.2.1.2 Qur’anic parent population

Thirty Qur’anic parents were selected in Touba to participate in this study, and they were also the parents of the thirty Qur’anic children recruited from Gaindé Fatma elementary school in Touba. From these 30 parents, 80% (N=24) were female and 20% (N=6) were male. The average age for females was 25 and the average for males was 38 years of age. These Qur’anic parents were recruited on a voluntary basis; therefore, they were not paid to participate in this study. Instead, they were asked to fill out consent forms in which the nature and objective of the research were clearly spelled out in both French and English and subsequently translated
into their native language Wolof. In other words, the parents received all the information about the research in their Wolof native language. Furthermore, all Qur’anic parents were given ample time (8 days) to decide whether they would like to participate in this research or not. Those who accepted were required to sign the consent form and return it to the Gaindé Fatma school district within eight days. As mentioned earlier, parents attended an information session together with their children. It is important to reiterate that the meeting was held in Wolof and parents were allowed to ask questions or request more clarifications. It is worth reminding that the Qur’anic parents were invited to participate in this research because they provided us with useful information about their children’s general literacy experience of reading at home and literacy experience of reading with others. These two aspects will most likely give us further evidence on children’s overall reading and decoding skills at school as the results of the tasks will show later.

After receiving consent from these thirty Qur’anic parents, the researcher further investigated information about their socio-economic status and religious background. More precisely, it was important to note that the overwhelming majority of these female parents declared being stay-home mothers, with only 10% of them involved in business such as trading, sewing and street commerce. All males (20%), on the other hand, declared having low-paying jobs, but managed to raise a family and provide their household with food and other needs. All parents were Muslim and had learnt the Quran since an early age and prayed five times a day. In addition they participated in all religious activities conducted in the city of Touba. An overwhelming majority of parents communicated the sense of religious belonging and total allegiance to the religious leader of the city of Touba. Most significantly, more than 97% of these parents declared fulfilling their religious duty by providing their children with preliteracy in the Quran and encouraging them to pray five times a day and recite the Quran at home.
Furthermore, these parents declared that they helped and encouraged their children to read and learn the Quran at home before allowing children to start studying the French language if necessary.

4.2.2 Daroukhane B Elementary School

Daroukhane B is one of the small public elementary schools scattered across the region of Dakar as the result of the decentralization law enacted in 1994 by the Diouf government to make education accessible to all Senegalese citizens. Unlike the District of Gaindé Fatma, which is known for its religious homogeneity, Daroukhane B presents a religious heterogeneity manifested in a peaceful cohabitation between Christians, Muslims, and other religious minority communities. This religious cohabitation led to a secular education system in which children of different religious backgrounds interact daily and communicate through the medium of the French language. Like many elementary schools across Dakar, since its creation in 1995, Daroukhane B has also embodied this secular educational system. It is worth noting that a considerable number of Christian families live in the Daroukhane B district; therefore, a majority of the student population sample recruited from this school had no prior knowledge of the Quran before they learned French. Not only were there Christians who did not expose their children to the Quran, but there was also a vast majority of Muslim parents who did not see the importance of enrolling their children very early on in the Qur’anic schooling before French schooling. Because of the absence of these early preliteracy skills in the Arabic language through Qur’anic schooling, these Wolof children were labeled in this research as the Non-Qur’anic group as mentioned earlier.
4.2.2.1 Non-Qur’anic children population

The Non-Qur’anic children who were recruited from Daroukhane B public elementary school were composed of thirty children from a student population of 570 students. From the thirty students recruited, 56% (N=17) were girls, 44% (N=13) were boys. Their ages ranged from 5 to 6 years old (M= 5.4, SD=2.2). These participants were recruited on a voluntary basis as well; therefore, they were not paid to participate in this research. Instead, they were asked to fill out and sign consent forms before they could participate in the research. That is, through the consent form the investigator sought consent from parents themselves to participate in the research and allow their children to participate in the research as well. In those consent forms, the objectives of the research’s tasks and the procedure to execute the tasks were clearly spelled out in written form and explained to participants orally in French and in their native language Wolof.

All parents were given ample time (8 days) to decide whether they would like to participate in this research or not. Those who wanted to be involved in the research were required to sign consent forms and return them to Daroukhane B school district within eight days. Moreover, these parents were invited to a meeting during which the nature and objectives of this research, as well as the ethical standards and safety procedures were further explained at length. The meeting was held in Wolof and French, and children and their parents were allowed to seek clarification on something about the research that they did not understand.

After receiving consent from the parents of these thirty children to participate in this research, the researcher further found out more about how children learned and in what educational context they were taught. For example, all thirty children who were recruited in this school followed a regular school day starting from 8 am. to 3 pm. Unlike the Qur’anic children discussed earlier, the Non-Qur’anic children at this school had previous experience...
with computer literacy through the children’s huts (i.e., Cases des Tous Petits) established in 2000 by the former President of Senegal, Abdoulaye Wade. Prior to learning French, they were introduced to computer literacy through various French word games (e.g., spelling, word attacks). Nevertheless, this early access to technology was not continued at the elementary level. That is, most students no longer continued with that training in computer literacy, as most classrooms in the Daroukhane B elementary school had no computers available to children. Thus, when entering the elementary school, children fell back to the same system of teacher-centered lecturing in which teachers present drilling activities and demand students to listen and produce what they hear in French.

In Daroukhane B elementary school, there are twenty four instructors (11 females and 13 males, mean age 32) and most instructors used the target language French to reach their lesson objectives and encouraged students to use French in most cases. In terms of classroom management, the mispronunciation or misspelling of a French word is often sanctioned by corporal punishment or isolation from the rest of the classmates. As discussed earlier, this situation very much contrasts with what was observed with the Qur’anic group whose instructors would want their students to speak the target language correctly but would not punish their students for the mispronunciation or misspelling of a French word. In most Qur’anic schools children are also punished for mispronouncing a Qur’anic word. Ultimately, both the Qur’anic and Non-Qur’anic groups of children received corporal punishment in one way or another for either failing to speak French correctly at the French school (Non-Qur’anic group) or mispronouncing or misspelling a Qur’anic word at the Qur’anic school (Qur’anic group).
4.2.2.2 Non-Qur’anic parent population

Thirty Non-Qur’anic parents were selected in Dakar to participate in this research, and they were parents to the thirty Non-Qur’anic children recruited from Daroukhane B elementary school in Dakar. From the 30 parents recruited, 56% (N=17) were female and 44% (N=13) were male; the mean age for the males was 29 and mean age for women was 36 years. These Non-Qur’anic parents were recruited on a voluntary basis. They were asked to fill out consent forms in which the nature and objectives of the research were clearly spelled out in both French and English and subsequently translated into their native language Wolof. All Non-Qur’anic parents were given ample time (8 days) to decide whether they would like to participate in this research or not. Those who wanted to be involved in the research were required to sign the consent forms and return them to Daroukhane B school district within eight days. Moreover, all Non-Qur’anic parents were invited to a meeting during which the nature and objectives of this research, as well as the ethical standardsafety procedures were further explained at length. The meeting was held in Wolof and French, and these parents were encouraged to ask questions on something they did not understand about the research. These Non-Qur’anic parents were also invited to participate in this research because they provided us with useful information about their children’s general literacy experience of reading at home and literacy experience of reading with others. As mentioned earlier with the Qur’anic parents, these two aspects (literacy experience of reading at home and literacy experience of reading with others) will most likely give us further evidence on children’s overall reading and decoding skills at school as result outcomes will show later.

After receiving consent from these thirty Non-Qur’anic parents to participate in this research, we further directed our focus on them to find out more about who they were and what their socio-economic status was as it was done with the Qur’anic parents described earlier. For
example, we found out that while a minority of these female (39%) parents declared being stay-at-home mothers, only 61% declared having some kind of job in the public sector. While 49% confirmed not having regular employment, 51% of male parents declared having a job in the public sector. There were 10 parents who declared following the Christian faith, while 20 parents were Muslims (15 non-practicing Muslim, 5 practicing Muslim). A great majority of the Non-Qur’anic parents declared that knowing the French language was a priority to them. The Non-Qur’anic children might lack exposure to L2 Arabic through the consistent reading, memorization and recitation of the Quran. However, they have their parents’ interest and support for their learning of the French language. That is, there is a positive attitude toward French which is known to enhance motivation and willingness to speak a new language. This parental attitude contrasts with what was observed with the Qur’anic parents discussed earlier. That is, most of the Qur’anic parents in Touba taught their children to solely follow Islam, and subsequently encouraged their children to read and write the Qur’anic text at home. This was not the case of the Non-Qur’anic parents who encouraged reading and writing in French rather than in Arabic. This sharp difference between these two groups of parents was expected as their environmental education had a major influence on how they prioritized the language education of their children. For example, the majority of the inhabitants of Dakar have been assimilated into the culture and language of France. Therefore, having a good command of the French language and speaking it well is synonymous with belonging to a certain elite. In fact, in most cases parents would continue to communicate to their children in the French language at home or mix French with other national languages they are competent speaking (i.e., Wolof, Serere, Pulaar).
4.2.3 Volunteers

After selecting participants (children and parents) in this research, we then asked the school authorities both in Gaindé Fatma and Daroukhane B school districts for permission to recruit an additional number of six volunteers (three volunteers in each school) to help us throughout the data collection and administration of tests. With the school authorities’ approval, these volunteers were recruited with the help of the school principals in Gaindé Fatma and Daroukhane B. All volunteers were recruited during staff and faculty meetings during which principals of both schools invited us to speak about the content of our research and discuss our intention to recruit three volunteers in each of their respective schools. The names of volunteers who willingly raised their hands and decided to participate in this research were written down in a notebook. These volunteers were recruited on a voluntary basis with the only criteria that they needed to be professional licensed educators. The need to insist on these criteria was to make sure that volunteers had a minimum understanding of research ethics and were able to answer questions involved in the research’s tasks. Each volunteer was given a remuneration of $30 for their participation in this research.

After these volunteers accepted to be involved in the research, they met with the researcher numerous times (5) to discuss the study’s data collection, instruments and procedure to implement the instruments. They were also informed of the nature and objectives of the research, as well as the ethical standards (i.e., to respect participants’ privacy, name, identity socio-economic status and religious affiliations) and safety procedures (i.e., to protect participants’ physical integrity and intellectual abilities) that were involved in this research. All volunteers who were recruited from both Gaindé Fatma and Daroukhane B school districts were licensed language teachers. Most significantly, they were all teaching French to grade 1 and 3
students in their respective schools. For instance, in Touba elementary school, two female and one male teachers (average age, 27) who have been teaching grade 1 French classes for more than five years were recruited to help in the administration of tests and the semi-structured interviews with parents. They also helped with the other administrative duties pertaining to this research (i.e., sending letters to parents, inviting them to the districts for the interview process, typing lists of children who were recruited to participate in the research, etc.).

In Daroukhane B elementary school, two female and one male teachers (average age 31) who have been teaching grade 1 French classes for more than seven years were recruited as well to help in the administration of tests and semi-structured interviews conducted with parents. Like volunteers from Gaindé Fatma elementary school, volunteers from Daroukhane B were very committed to the research process. They also helped with the other administrative duties pertaining to this research as discussed earlier.

The following section provides a description of the procedure and how it was implemented throughout the data collection process.

4.3 Instrument

In conducting the research, five instruments were designed to collect both quantitative and qualitative data. Quantitative data collection was administered using (1) an odd-one-out task, (2) a picture-word identification and association task, (3) a reading comprehension task and (4) a questionnaire. Qualitative data was administered using (1) semi-structured interviews. These tasks elicit complementary quantitative and qualitative data that break away from the old tradition of choosing a quantitative approach over a qualitative approach and thus challenge the theoretical debate surrounding the benefits of one approach over the other. That is, researchers across disciplines (e.g., education, criminology, psychology, sociology) have ignited “polemical
articles” in an effort to stress the difference between quantitative and qualitative methods, but they strongly support the quantitative method over qualitative (Palys, 2003, p.82). Kidder and Fine (1987) best capture the perceptions of how quantitative data supporters, who label themselves as seekers of “numerical precision”, criticize the qualitative data advocates as “navel-gazers”. Conversely, the qualitative data supporters label themselves as “rich in detail” while criticizing the quantitative data supporters as “number crunchers” (Kidder & Fine, 1987, p.38). Nevertheless, despite these conflicting arguments on the issue, solid research evidence from the SLA literature has further demonstrated that quantitative and qualitative data approaches are complementary (Brewer, 2000; Creswell, 2009; Mackey & Gass, 2005). While research based on qualitative data tends to proceed in a more exploratory and interpretative fashion, providing a more detailed account in the data analysis, quantitative research presents findings numerically. Given the paramount role each method plays in the gathering, analysis and discussion of research data, both qualitative and quantitative methods should be used as these two methods constitute two complementary elements. Thus, this research is analysed through the lenses of quantitative and qualitative methods. While the quantitative data will be numerically reported using figures and percentages, the qualitative data will be reported in a narrative and more descriptive format.

The following sections provide further description of each instrument used, and how it was implemented throughout the data collection process.

4.3.1 Odd-one-out task

This instrument consisted of nine French words extracted from the first year reading comprehension test administered later to both the Qur’anic and Non-Qur’anic groups who participated in this research. It was expected that children in each group knew these French words because they encountered many of them after being fully exposed to several French
listening and reading comprehension activities in the classroom in their first year of schooling. In other words, by the time these children finished their first year of schooling, they were expected to expand their lexical knowledge and enhance their understanding of different rhyme sequences in French. In that regard, based on the listening activity assessment tests we had access to, thanks to the school principals in both schools, there was clear evidence that both Qur’anic and Non-Qur’anic were well equipped to approach our odd-one-out task. That is, the odd-one-out task administered to both Qur’anic and Non-Qur’anic was within the Ministère de L’Éducation Nationale’s guidelines [MEN; Ministry of National Education of Senegal]. In other words, MEN, which oversees education in Senegal, ensured that there is coordination in the amount of listening and reading activities that should be presented to children (in their first year of school) in all elementary schools across Senegal. These tasks involved dictation activities and word attack activities in which children were asked to recognize the sounds that make up words and put those sounds together (more advanced word attack activities could even involve using context to find out what a word means). During the school year, children were also presented with other forms of listening activities in which they were asked to fill in the missing French words in short French reading paragraphs. These various listening activities were designed to train children’s ear and enhance their sensitivity to sounds.

In the testing of their phonological awareness in French in our study, both the Qur’anic and Non-Qur’anic children were presented with nine words in a three-word-per-set format (i.e., first set: Livre- Rue-Feutre; second set: École- Prix- Élève; third set: Enfant- Monsieur- Monde). Each set was presented to each child and the examiner subsequently asked to detect the odd-one-out after hearing the rhymes in each set. More precisely, it was expected that children would detect the similarity of rhymes in [re] at the end of Livre and Feutre and then take out the non-
rhyming word, Rue. For the second set of words, both groups were to detect the odd-one-out of the following words: École- Prix- Élève. It was expected that children would detect the similarity of rhymes [É] at the beginning of École and Élève and then take out the non-rhyming word, Prix. For the third set of three French words, children needed to detect the odd-one-out among the following words: Enfant- Monsieur- Monde. It was expected that children would detect the similarity of rhymes [M] at the beginning of Monsieur and Monde and then take out the non-rhyming word, Enfant. It is worth pointing out that children were tested individually, and each of them was given a maximum of six minutes (2 minutes dedicated to each set of three words) to detect the odd-one-out after hearing the examiner read each set of words three times. One way for children to show their understanding of rhyme differences in each set of words was to repeat the non-rhyming word orally to the examiner. Another possibility for children was to record the non-rhyming word on a piece of paper in case they would prefer not to repeat it orally to the examiner. Although the examiner read the words slowly, children were allowed to ask the examiner to repeat words in case they were not paying attention to what was being read for the first time. In that respect, children were given sufficient time to think about the words and pay more attention to the rhyming sequences in each given set of words. The same testing procedure was repeated for each child and the set of words, as presented above, was presented in the same order to all children in the Qur’anic and Non-Qur’anic groups.

The rationale behind the choice of this instrument over a more familiar instrument known as Rapid Automatized Naming (RAN), for example, is that the odd-one-out instrument is a reliable tool to measure phonological awareness in children through an auditory matching (McBride-Chang, 2004). Unlike RAN used three decades ago for its clinical utility in distinguishing good from poor readers, especially with individuals who suffer from dyslexia, the
odd-one-out task is a force-choice response that typically taps children’s onset-rhyme awareness to test their overall phonological awareness. In that particular respect, the odd-one-out instrument was first used by Bryant and colleagues (1989) to measure children’s phonological awareness and sensitivity to rhymes. Since then, the odd-one-out instrument has increasingly been used in the SLA field (Adams, 1990; Bryant et al., 1989; Garton & Pratt; McBride-Chang, 2004). In using this instrument with Wolof children in my study, we also intended to test Wolof children’s general phonological awareness to find out how Wolof children’s early exposure to sound in Wolof or Arabic would affect their sensitivity to sounds and word-recognition in French (see Appendix A for a copy of the instrument).

4.3.2 Picture-word identification and association task

This instrument consisted of nine French words extracted from the reading comprehension test administered to both Qur’anic and Non-Qur’anic groups. These nine words were associated with an equal number of their nine corresponding colored visual referents. That is, five images of inanimate objects associated with their five referents (i.e., chaise, table, banc, règle and siflet) and four images of animate subjects associated with their four referents (i.e., institutrice, cheval, garçon and filles) were presented to children. The rationale behind organizing these images into inanimate objects and animate subjects was to present children with a task that allowed more choices. While the words were written in black and white on medium pieces of white paper (8.5×11 inches), their corresponding images were displayed on medium but colorful pieces of white papers (8.5×11 inches) as well. The words and their corresponding images were mixed together and then spread out on a wide table in a classroom where the examiner, using a list, invited children one by one to come to the table to pick any word from the table and associate it
with its corresponding visual referent randomly displayed on the same table where the words were. This process was repeated with each child from the Qur’anic and Non-Qur’anic group until all the eight words were identified and associated with their eight images. Each child was given exactly eight minutes to execute this task.

The French words used in the picture-word identification and association task was expected to be within children’s reach because, during the first year of their schooling, both Qur’anic and Non-Qur’anic children had the opportunity to be presented with decoding and reading activities in the classroom. In other words, by the time they finished their first year of schooling, they were expected to enhance their coding and decoding skills. In that regard, based on the decoding activities and assessment tests we had access to, there was clear evidence that both Qur’anic and Non-Qur’anic were well equipped to approach our picture-word identification and association task as MEN mandates elementary school teachers to prepare first grade children across Senegal to develop good reading comprehension skills, which entails a solid prior knowledge of decoding skills in the first place. Some of the tasksthat were used during the school year to enhance children’s decoding skills were word identification activities in which children were asked to distinguish pseudo French words from actual French words. During the school year, children were also presented with identification and association tasks in which they were presented with French words and asked to further visualize them through drawings.

We chose this instrument to test children’s decoding skills and abilities to represent written words in pictorial forms because research shows that there is an important link between visual and orthographic skills necessary in decoding and subsequent success in reading (Adams, 1990; Lavine, 1972; McBride-Chang, 2004). Moreover, in the pre-text literacy era, humans used pictures and symbols to communicate with other humans. Figures and pictures depicted on cave
walls and rocks across various continents around the world perhaps gave the most ample
evidence of the crucial importance of pictures. Therefore, pictures no doubt served as the
systems all evolved from pictorial representations called pictograms or picture writing [because]
each pictogram was an image or concept that it represented” (O’Grady & Archibald, 2000, p. 543).
In the current era, representations of words through pictures have never been more crucial
in our conceptualization of the world we live in. The presence of a written word activates its
corresponding image in our brain; and the presence of a picture activates its corresponding word
in our brain; therefore, pictures and words entertain a dialectical relationship in which more
meanings about the word that we decode and the object that we see are alternately provided.
Given the importance of the link between visual skills and decoding skills, a considerable
number of studies have been conducted to measure young children’s visual skills (Lavine, 1972,
as cited in McBride-Chang, 2004). For example, Lavine (1972) has found that young non-reader
children tend to distinguish print from pictures, while the goal is to proceed with an
understanding and awareness of the connection between visual and orthographic skills (see
Appendix B for a copy of the instrument).

4.3.3 Reading comprehension task

The text used to evaluate children’s reading comprehension was about the end of school
year in Senegal. The objective of this task was to test Qur’anic and Non-Qur’anic students’
reading comprehension skills by assessing if they were able to read a short French text,
understand it well and answer questions related to the topic. The reading comprehension task
consisted of three main sequences: a brief initial sequence of events in which the narrator
introduces the festivities planned for the end of the school year in an instructor’s classroom; a
second short sequence of events in which students, before leaving the classroom, should clean up their desks and put away their books, and a third sequence of events in which both students and parents are invited to a ceremony where the students are given gifts to mark the end of the school year. Each of those sequences described above was illustrated with a set of pictures that describe very accurately what each sequence was about. For example, with respect to the first sequence, colored images of a teacher surrounded by students in the classroom were inserted through the reading text. With respect to the second scene, colored images of students cleaning up their desks and putting them away were inserted through the text. With respect to the third sequence, colored images of the school principal distributing prizes to students and parents were inserted at the end of the reading passage as well to mark the end of the school year festivities. The use of images to further illustrate the central theme of reading comprehension was important in this task because it provided children with further contextual cues to understand the text better. Additionally, most of the key vocabulary concepts (i.e., balayer la classe [sweep the classroom]; installer [to set up], souhaiter [to wish], féliciter [to congratulate] we thought may be difficult for children to grasp were written on the board and explained by the examiner. Children were also allowed to get help from any of the volunteers who helped invigilate the reading comprehension test. Nevertheless, none of these invigilators was allowed to communicate the right answer to any child throughout the whole testing process.

The reading comprehension was measured by seven multiple choice questions generally asking children (1) to identify the narrator and other main characters in the text, (2) extract useful information on how the end of the year ceremony is held and (3) assess the outcomes of the ceremony of the end of the school year. In addition to these multiple choice questions, three open-ended questions were also given to the children to give them the opportunity to voice their
opinions and general impressions on the theme of the reading comprehension. It was expected that children in the Qur’anic and Non-Qur’anic groups would understand the reading comprehension test that we administered to them because during the first year of their schooling both Qur’anic and Non-Qur’anic children were presented with a range of reading materials in the classroom. In other words, by the time they finished their first year of schooling, they were expected to decode a short reading text and understand its general meaning and some of text’s specific meanings. In that regard, based on the reading materials that these children were exposed to throughout the school year, there was clear evidence that both Qur’anic and Non-Qur’anic were well equipped to approach our reading comprehension task. As explained earlier, MEN mandates all elementary school teachers, including those in Gaindé Fatma and Daroukhane B elementary schools, to prepare first grade children across Senegal to develop good reading comprehension skills. Some of the reading comprehension tasks that were used during the school year to enhance children’s decoding skills were short reading materials in which children were asked to read attentively and answer multiple choice questions of the following format (a, b, c, d) (more advanced readings would ask children to make inferences by expanding and applying their knowledge of the text to generalized contexts).

The rationale behind the use of these multiple-choice questions in our study was influenced by the information provided by most Senegalese elementary schools’ curriculum, in which it was explained that students are exposed to two forms of testing: multiple choice and true or false questions. We chose the multiple-choice because students were compelled to pay more attention to the selection process as each student was instructed to circle the correct answer among the four alternatives provided to them (a, b, c, d). With the true or false answers, students may not be motivated to engage their critical thinking skills in the selection process because they
only have to choose between a forced choice of two alternatives (true or false), and the choice of
one alternative over the other is more likely to be purely random. It is worth noting that the
reading comprehension text was chosen to ensure that students were exposed to a familiar
cultural theme. Parents and teachers in Senegal usually mark the end of the school year by giving
gifts to their students. Therefore, having the children read a passage that talks about classroom
items and the end of the school year—a happy and celebratory occasion—encourages
engagement. This text was chosen to fit first year Qur’anic and Non-Qur’anic children’s
comprehension level. All the verbs were conjugated in the present tense and the content and the
lexical vocabulary were within the students’ ability. According to the elementary school
curriculum where the children were tested, first year students should be able to read 300 words
and conjugate first group verbs and irregular verbs in the present tense (i.e., aller, être, avoir) by
the end of the school year. They should also know the definite and indefinite articles as these
concepts are taught in the first three weeks of the school year. The reading comprehension text
contained 128 words in total (see table 3 for more on the lexical content of reading
comprehension).

Table 3. Lexical content of French reading passage presented to participants.

<table>
<thead>
<tr>
<th>ER verbs</th>
<th>IR verbs</th>
<th>RE verbs</th>
<th>Irregular verbs</th>
<th>Articles/de/indefinis</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1</td>
<td>0</td>
<td>2(aller/être)</td>
<td>23 def/ 3 indefinites</td>
</tr>
</tbody>
</table>
We chose this reading comprehension instrument to test Qur’anic and Non-Qur’anic groups’ reading skills because children’s success in reading comprehension largely depends on how successful they were in both decoding skills and phonological awareness, two important aspects we investigated in this research. Reading comprehension is one of the most important tasks used across fields (e.g., psychology, sociolinguistics, neuro-linguistics) to assess a variety of skills in children and adults alike. In the field of Second Language Acquisition, and specifically in psycholinguistics, comprehension is thought to involve a complex web of interactions between different cognitive components such as word recognition, phonological awareness, and decoding skills (Adams, 1990). Difficulty in comprehension tasks may show early difficulty in phonological awareness and decoding skills; therefore, comprehension tasks have been extensively used in prior studies to measure both children’s and adults’ knowledge of a language and their cognitive development (Adams, 1990; Garton & Pratt, 1989; McBride-Chang, 2004). Although a total absence of comprehending a reading passage may be associated with dyslexia or cognitive reading impairment in both children and adults. Difficulties in early reading or comprehending are mostly attributed to early difficulties in decoding skills or word recognition (Adams, 1990; Gough & Tunmer, 1986; Garton & Pratt, 1989; McBride-Chang, 2004). Drawing from these perspectives on reading comprehension in relation to decoding skills and phonological awareness, our study was designed to measure Qur’anic and Non-Qur’anic children’s comprehension skills in the French language (see Appendices C and D for a copy of the instrument and reading passage).

4.3.4 Questionnaire

In addition to the odd-one-out, picture-identification and association and reading comprehension tasks described above, we used a questionnaire that was designed to extract the
maximum amount of information from children’s literacies (literacy experience of reading at home and literacy experience of reading with others). Most significantly, the amount of information that both the Qur’anic and Non-Qur’anic children provided us on the basis of this instrument could be used to explain some of the tendencies we would observe with respect to children’s levels of decoding skills and reading comprehension, as research outcomes will show later. The questionnaire presented to children through a Likert scale format consisted of four questions on the themes of (1) literacy experience of reading at home and (2) literacy experience of reading with others (e.g., friends, siblings, parents or teachers). The Likert scale enabled us to (1) grade the frequency with which children developed literacy experience of reading at home and reading with others and (2) quantify the answers children gave us from the questionnaire.

With respect to the first theme of literacy experience of reading at home, children were asked the following two questions: (1) How often do you play word or letter games at home? (2) How often do you use books at home? Regarding the second theme of literacy experience of reading with others, children were asked the following questions: (3) How often do your siblings or friends read to you? (4) How often do your parents read to you?

Both questions from theme one and questions from theme two were mixed together and presented in a Likert scale format in which each question was associated with five possible answers (NEVER being 1; SOMETIMES being 3; OFTEN being 4; ALWAYS being 5). Each question and its five possible answers were orally read to children three times in the Wolof language. Nevertheless, there was a limit on how much children could talk because (1) the five Likert scale categories forced children’s choices and (2) the questionnaire needed to be completed with each participant within ten minutes. It is worth noting that, although
these questions were presented in written form, examiners translated the questions into Wolof and communicated with participants in Wolof for the whole time. This interview process lasted approximately 600 minutes in total considering all participants in the Qur’anic and Non-Qur’anic groups. The children of both groups were presented with these questions in the same order but in different contexts. That is, while thirty Qur’anic children were presented with the questionnaire in classroom at Gaindé Elementary school in Touba, thirty Non-Qur’anic children were presented with the questionnaire in Daroukhane B in Dakar. In grading the frequency with which children develop literacy at home and with others, the examiner read the questionnaire to participants one by one orally and made sure that each one of them understood the questionnaire by making a few comprehension checks (i.e., do you understand the questions, do you want me to repeat the questions etc.) from participants. Due to the age group (e.g., 5-6), there were a few occasions in which the examiner spent additional time to ensure that participants clearly understood what was being asked of them. Moreover, children were also allowed to make clarification requests (e.g., say it again, I do not understand the question, etc.) from the examiner.

Although a questionnaire could be completed in different ways, we chose to present our questionnaire in a Likert scale format because this method has been widely used in the literature. Most significantly, a questionnaire presented in a format of Likert scale allows a research examiner to collect a definite choice answer rather than neutral or intermediate positions on a given scale. In that respect, most researchers (Dörnyei, 2003; Garland, 1991) have agreed upon the use of questionnaire in a Likert scale format. It is a reliable tool in providing categorical responses from a set of given possibilities. Garland (1991), in his article titled *Mid-Point on a Rating Scale: Is it Desirable*, argues favorably for the use of the Likert scale on the following terms: “A Likert scale was chosen because scales such as this, with labels [categories] attached
to each point on the scale, are widely used in market research and have been extensively tested in both the marketing and social science literature” (Garland, 1991, p. 4). Garland’s positive view on the Likert scale was later corroborated by Dörnyei (2003) who simply views this measurement method as “simple, versatile, and reliable” (Dörnyei, 2003, p.17) (see Appendix E for a copy of the instrument).

4.3.5 Semi-structured interviews

These semi-structured interviews were designed to seek additional knowledge from parents with respect to their general attitude toward the French language. The semi-structured interviews presented to parents were under one theme only (i.e., parents’ attitude toward the French language) and consisted of three questions: (1) What languages do you use at home? (2) What language do you prefer for the instruction of your child at school? (3) What is your overall attitude toward the French language? Although these parents were interviewed separately in different contexts, the same procedure was used to conduct the interview process for both Qur’anic and Non-Qur’anic parents. That is, Qur’anic parents, who were parents to the thirty Qur’anic children, were interviewed at Gaindé Fatma elementary school. Additionally, thirty Non-Qur’anic parents, who were parents to the thirty Non-Qur’anic children, were interviewed at Daroukhane B elementary school. All parents in both schools were interviewed individually in the Wolof language because they all expressed the desire to communicate with us in the Wolof language. It is worth mentioning that not a single parent interviewed in the district of Gaindé Fatma in Touba wanted to speak with us in the French language eventhough that possibility was given to all of them. This contrasts with parents interviewed in Dakar the majority of whom mixed French and Wolof to answer our interview questions. From the list of all parents, each parent was called upon to sit down with the examiner and answer three questions with respect to
the general theme of attitude toward the French language. There was no limit to what each parent could say, and how long he or she could say it, therefore the examiner kept a written diary and audio of what each parent said. Each parent’s name and identity were protected by assigning labels. More precisely, parents interviewed at Gaindé Fatma elementary school were labeled QFP (Qur’anic Female Parent) if female and QMP (Qur’anic Male Parent) if male. The same procedure was used in conducting the interview with the parents at Daroukhane B as well (i.e., N-QFP, Non-Qur’anic Female Parent and N-QMP, Non-Qur’anic Female Parent). All the semi-structured interviews were videotaped and transcribed by the same interviewer.

The rationale behind the choice of the semi-structured interview is that semi-structured interviews are widely used as an instrument of research in the social sciences and other fields of research as well. They have often been used in the SLA field to further comprehend results from forced choices (i.e., multiple choices, True/False). As far as this research was concerned, this instrument was designed to seek further background information that may help to explain the tendencies in the results observed in decoding skills and reading comprehension for both Qur’anic and Non-Qur’anic children in this research.

4.4 Procedure

4.4.1 Odd-one-out task

Both Qur’anic and Non-Qur’anic groups were given an odd-one-out task to measure their phonological awareness. On the testing day before the odd-one-out task began, both groups were informed of the nature and time needed for the task. Both groups were introduced to a pre-task to train them on the procedure of the task to come. For instance, in the pre-task each participating child was presented with a set of three French words that were not used in the task to come. As the researcher read the first set of words (i.e., Livre, Rue, Feutre) the participant was
expected to take out the word that did not belong to the set (i.e., Rue), and this process continued until the nine words in the three sets were all read. Like the nine target French words presented to students on the picture-word identification and association task, the target French words presented to the participants on the odd-one-out task were extracted from the same reading comprehension task administered to participants as well. After the research investigator was sure that the participant had understood what was expected of him or her in the pre-task, the examiner introduced the task. The time dedicated to this task was six minutes per participant, and this session was videotaped. While transcribing data afterward, we used a system of correct and incorrect responses score sheets (containing two possible responses — correct or incorrect — for each set of three words) made from Excel to report each participant’s correct and incorrect answers. That is, the number of correct and incorrect answers from each participant was recorded by circling either “I” as incorrect or “C” as correct from the six possible responses on the score sheet. After gathering and separating the correct answers from the incorrect answers with respect to each answer provided by a participant, each participant’s correct and incorrect answers were calculated in percentages using an Excel spreadsheet.

4.4.2 Picture-word identification and association task

A picture-word identification and association task of ten target words associated with their corresponding pictures was administered to the first year Qur’anic and Non-Qur’anic groups. Each group was expected to decode each of the target words (i.e., chaise, table, banc, règle, sifflet, institutrice, cheval, garçon and filles) and then match them with their corresponding visual referents. Before the task began, the students were introduced to a pre-task designed to train them for the procedure of the task to come. For instance, in the pre-task, each child was presented with ten words and their corresponding visual referents. After hearing the examiner
randomly selecting and reading a word aloud, each participant was expected to decode that word and associate it with its corresponding visual referent. Words of the pre-task consisted of pictures of animate subjects (i.e., chacal, lion, mouton, éléphant) and inanimate objects (i.e., fleur, montre, craie, ardoise). Both in the pre-task and the actual task, children were presented with a mixture of animate subjects and inanimate objects. The time dedicated to this task was ten minutes per participant, and this session was videotaped. While transcribing data afterward, we used the same system of correct and incorrect score sheets to report participants’ correct and incorrect answers containing two possible responses—correct or incorrect—for matching each word to its corresponding visual referent. Nevertheless, we increased the number of columns for this particular task because it involved eight pictures. That is, the number of correct and incorrect answers from each participant was recorded down by circling either “I” as incorrect or “C” as correct from the eight possible responses on the score sheet. After gathering and separating the correct answers from the incorrect answers with respect to each answer provided by a participant, each participant’s correct and incorrect answers were calculated in percentages using an Excel spreadsheet.

4.4.3 Reading comprehension task

A reading comprehension task was administered to children in the first year Qur’anic and Non-Qur’anic groups (i.e., sixty children). Each participant was expected individually to read a short French text on the theme of the end of the school year in Senegal and to answer seven multiple choice and three open-ended questions. Each group was given approximately fifty minutes to complete the reading comprehension task. The researcher invigilated the children together with five instructors in both districts in Daroukhane B and Gaindé Fatma. Participants were tested in the third hour of the day (i.e., 11:00-11:50 am) to avoid any physical
factors that might affect the testing (e.g., being too sleepy in the early morning or too tired in the afternoon). A sign was placed on the classroom door so that individuals would not disturb the students during the test administration. Two additional instructors were helping the researcher with the invigilation, with responding to students’ questions, or with other unplanned events that could have occurred during the testing process. Unlike the odd-one-out, picture-word identification and association tasks described above, this reading comprehension test was not videotaped because this task did not involve any dialogue with the examiner. Thus, there would not be any possible inconsistency between what the examiner may report on paper and what a participant said orally. This situation may occur with any testing or interview process in which oral speeches are reported on paper.

All children who participated in this research reported to the language lab at 10:45, and the examiner used fifteen minutes to explain instructions and ensured that all the testing materials (40 copies of the reading text along with their questions) were in place before the test began at exactly 11:00 am. Before administering this reading comprehension test, each Qur’anic and Non-Qur’anic child was required to have a pencil and a pen, and the investigator with two volunteers circulated around the entire classroom to ensure that children were seated on their tables (one student per table) and that there was no possibility for them to communicate with one another during the testing process. Before the test began participants were asked if they had questions or they wanted to use the restroom or sharpen their pencil among other things. Instructions for the reading comprehension test were thoroughly explained to participants both in French and Wolof. Participants were also allowed to ask questions either in their native language Wolof or French if there was anything that seemed unclear to them before and during
the testing period. Nevertheless, neither the examiner nor any of the volunteers were allowed to communicate the right answers to participants until after the examiner had collected all tests and put them away in a secure location.

After ensuring that all participants were present and everything was in place, each child was given a copy of the reading comprehension test and asked to read the test and answer the ten questions (seven multiple choice questions and three open-ended questions on the theme of end of the school year). With respect to the seven multiple choice questions, participants were required to circle, with their pencil, one of the four possible answers (a, b, c, d) that each question contained. With respect to the open-ended questions, participants were required to show their general understanding of the text by writing a short phrase in French on each open-ended question to express their opinions about the theme of the text and their general reactions to end of the school year.

Participants were encouraged to read the reading text attentively and numerous times before answering each question. They were also told not to rush to give the answer before thinking it through as thoroughly as possible, but most of the participants did not use the entire fifty minutes to complete the test. Specifically, most of the participants at Gaindé Fatma elementary school did not use the entire fifty minutes; fourteen participants finished it ten minutes before 11:50, ten participants finished at 11:45 and six participants finished exactly on time. This situation contrasted with what was observed with participants at Daroukhane B where a majority of participants (twenty-six) finished the test on time at 11:50 and a minority of the participants (four) finished five minutes before the time.
4.4.4 Questionnaire

While gathering more data from the Qur’anic and Non-Qur’anic children, we devised a questionnaire that was presented to children in a Likert scale format. It is worth reminding that the questionnaire in a format of a Likert scale allowed us to grade the frequency with which children developed literacy experience of reading at home and literacy experience of reading with others. Before the task began, all participants were given the information that the questionnaire contained. That is, the examiner first explained to each participant that the questionnaire contained two main themes (literacy experience with reading at home and literacy experience of reading with others) associated with two questions for each of them. The examiner also explained the five response possibilities that were available to each participant when dealing with each question among the four questions that were asked to each participant. The rationale behind explaining the content of the questionnaire to participants was to ensure that they understood the task well and what was expected of them before they engaged in the process. The questionnaire was explained to participants orally in their native language Wolof. Most importantly, each possible response among the list of five possible responses presented in a Likert scale format (NEVER being 1; SELDOM being 2; SOMETIMES being 3; OFTEN being 4; ALWAYS being 5) was translated into Wolof. Having the list of all children who were selected to complete the questionnaire in an alphabetical order, the examiner picked each participant one at a time and brought him or her to the language lab office where the interviews were held. While a participant completed this questionnaire, the rest of the group was sitting in a classroom next to the language lab office. Given the sensitive information a participant may give with respect to how much or how little their parents would be involved in their literacy at home, we conducted this questionnaire with participants with the maximum degree of privacy.
Therefore, in an effort to respect and protect participants’ identities, various codes were used across gender and groups throughout the process. As shown earlier in the preliminaries and guidelines section, while a participant male child from the Qur’anic group was labeled as B, a participant female child was labeled G. Each letter was also matched to a number according to the sequence of participation (e.g., B1 meant the first boy in the group B2 meant the second boy in the group and G2 meant the second girl in the group and G15 meant the fifteen girl in the group, etc.).

Before beginning the task, the investigator made sure that the participant was relaxed (lesser degree of nervousness) and comfortable enough to answer questions involved in the questionnaire. In that respect, the investigator introduced the task only when he was confident that participant was comfortable enough and ready to start the task. The amount of time given to each participant to complete the questionnaire was ten minutes. Each participant’s answer was directly recorded on the questionnaire sheet of paper that the examiner had in front of him. Each participant’s answer corresponding to each question was circled in a pencil before moving to the next question. This procedure went on until all the participants completed the questionnaire. After the completion of the procedure all participants’ answers involving each question from both the Qur’anic group and the Non-Qur’anic were recorded and calculated in percentages through an Excel spreadsheet.

4.4.5 Semi-structured interviews

Following a weekly interview schedule provided by the school administrators at Touba and Dakar school districts, sixty parents were interviewed in both districts of Gaindé Fatma elementary school and Daroukhane B. In each school, these interviews were conducted in a language lab where participants were very comfortable to work. It was a well maintained and
safe environment for participants to work and the investigator to keep data in. On the testing day, each parent had a one-on-one interview with the investigator individually under the supervision of a research volunteer who aided with the video recording. The whole interview was conducted orally in Wolof, and the videotape was subsequently transcribed into the English language by the research investigator. Due to the considerable number of parents involved, the time allocated to each interviewee was ten minutes.

4.5 Data analysis

4.5.1 Quantitative data analysis

In the quantitative data analysis, a (1) correct and incorrect scaling test, (2) a Likert-scale, and (3) an ANOVA statistical test were used. Each of the data analysis methods was accurately used with the smallest margin of error possible particularly when applying the ANOVA. In the following section, we will describe each method of statistical analysis in more detail.

4.5.1.1 Correct and incorrect scaling test

The data gathered through the odd-one-out task, picture-word identification and association tasks, reading comprehension task and questionnaire with children corresponded to quantitative data; therefore there was a numerical report of results. While gathering data from the odd-one-out, picture-word identification and association, and reading comprehension tests, we devised a system of indicating correct and incorrect responses in Excel format to report results quantitatively. The number of correct and incorrect answers was added up after carefully being recorded by circling either “I” as incorrect or “C” as correct. Both the correct and the incorrect scores were added up and divided by the number of total responses for this task to get the percentage for both correct and incorrect responses out of 100%. The mean score and standard deviation within groups (i.e., male and female) were calculated by adding up the total score for
each category and dividing the total score by the number of participants in each category (see Appendices G & H for further details). The same statistical method was used to calculate the mean and standard deviation for the Qur’anic and Non-Qur’anic groups.

4.5.1.2 Likert scale

While gathering data from children to quantify their answers from a questionnaire, we devised a Likert scale as described earlier. It is worth reminding that the Likert scale measurement method has been widely used in the literature, as it allows respondents subjected to a task using this format to make a definite choice answer rather than to choose neutral or intermediate positions on a given scale. In the case of this research, the Likert scale allowed us to ask each of our participants (Qur’anic and Non-Qur’anic children) to choose one of the five statements (i.e., always, often, sometimes, seldom, never) that best describes how frequently they are being read to at home by their parents and others such as teachers, friends or siblings. In other words, with respect to the theme of literacy experience through reading at home, each participant was asked to tell us how often he or she plays word or letter games or uses books at home. With respect to the theme of literacy experience through reading with others, each participant was asked to tell us how often his or her parents, teachers, friends or siblings read to him or her (see Appendix E for further details).

4.5.1.3 ANOVA test

Because our research involves a within-group comparison (i.e., mean scores between female and male in both the Qur’anic and Non-Qur’anic groups) and between group comparisons (i.e., mean scores between Qur’anic and Non-Qur’anic), we conducted a two-way Analysis of Variance (ANOVA) test as an inferential statistical method. ANOVA has been widely used in the field of Second Language Acquisition (SLA) as a tool for the analysis of a variety of types of
second language acquisition data (Cunnings, 2012). According to Cunnings, since the inception of the field of SLA, a range of surveys have reported that close to 90% of studies in applied linguistics were quantitative in nature, hence the widespread use of ANOVA in studies across disciplines. ANOVA can measure a range of differences in several means with respect to several groups. For example, ANOVA can examine variations within a group to further explore how this variation affects means between Qur’anic group and gender at the same time. Because of the double function that ANOVA can play in the statistical techniques to report results of the mean scores within groups (gender) and between groups (Qur’anic and Non-Qur’anic), we opted for ANOVA. We believe that ANOVA is the most effective method to provide differences between means of many variables (i.e., gender and group) in this research. Although there are two ways to report p-values (0, 01 or 0.05), we used an alpha level of 0.05 (i.e., a criterion for measuring the probability of supporting or rejecting the null hypothesis) and we reported the degrees of freedom (i.e., the F-value, and the p-value) associated with the alpha level of 0.05.

The statistical data analysis methods we described above are quantitative in that we could represent data results with quantifiable numbers. Nevertheless, the data analysis we will be discussing below are qualitative in that they follow a descriptive and narrative format. In that respect, we used a qualitative data analysis to represent the overall attitudes toward the French language for the parents of both the Qur’anic and Non-Qur’anic children.

4.5.2 Qualitative data analysis

In the qualitative data analysis, a semi-structured interview was used to collect information from children’s parents who participated in our study. The data collected through the semi-structured interviews were transferred into a database and organized by letter codes (i.e., M for male parent and F for female parent). It is worth reminding that this method of data analysis
was not quantifiable; therefore the analysis of results was descriptive. In the following section, we will briefly describe the semi-structured interviews.

4.5.2.1 Semi-structured interviews

The semi-structured interviews administered to parents were used to seek information about parents’ attitude toward the French language. This semi-structured interviews often give a depth of information through the use of a series of open-ended questions providing respondents the opportunity to talk freely without any restriction on what they could say or couldn’t. By collecting parents’ speeches and general views on the French language through open-ended questions in our own research, we hoped to determine if their views could perhaps affect the result tendencies in the tests of decoding and reading comprehension in French. We also believe that parents’ views on the French language could be complementary to the questionnaire administered to their children as well. That is, by knowing the language children mostly use with their parents at home, we could certainly determine if this language should be taught at school to avoid a literacy gap between home and school.

4.6 Summary

This chapter has outlined the methodology used to conduct the research in Senegal at Gaindé Fatma elementary school in Touba and Daroukhane B elementary school in Dakar. First, it has defined the scope of the research, articulated the research questions that this research strived to bring answers to, and presented the predictions to which the research aimed to bring further evidence. Secondly, this chapter has also provided a theoretical framework for the research by discussing the school population, curriculum and the socio-linguistic context from which the population sample was selected to participate in this research. Finally, it has presented the various instruments used to collect the data, and most significantly, described each
instrument in depth and discussed how each instrument was implemented during the process of data collection.

In chapter 5, we will report the results of the data through quantitative and qualitative analysis.
Chapter 5: Results

This chapter reports the quantitative and qualitative data gathered from Gaindé Fatma elementary school in Touba and Daroukhane B elementary school in Dakar. It begins with the quantitative data and presents the phonological awareness, decoding skills, reading comprehension skills and questionnaire results using both figures and images to illustrate possible discrepancies between genders and groups. It ends with the qualitative data by reporting on parents’ general attitude toward the French language. Although the semi-structured interviews for parents are mostly descriptive in nature (qualitative) and presented in a narrative format, they may help explain further the tendencies observed in the quantitative data reports. Thus, as mentioned earlier, quantitative data and qualitative data are far from being two distinct elements as some may suggest; instead they are two complementary components of our study (Brewer, 2000; Mackey & Gass, 2005).

5.1 Quantitative results

With respect to the quantitative results, we will first report Qur’anic and Non-Qur’anic groups’ scores on the odd-one-out, decoding and reading comprehension tasks. We will then report the questionnaire results we had from both groups.

5.1.1 Phonological awareness results

Phonological awareness, or the ability that one has to perceive and discriminate sounds of spoken words, was measured through the odd-one-out task administered to the Qur’anic group and the Non-Qur’anic group. The odd-one-out was used to test whether the Qur’anic group was more sensitive than the Non-Qur’anic group at discriminating sequences of French word sounds. It was hypothesized in this research that Qur’anic children would be more accurate than the Non-Qur’anic group at discriminating French words whose vowel and consonant sound structure
pattern them into similar rhyme sequences vis-a-vis words whose sound structure do not fit such rhyme sequences.

5.1.2 Qur’anic and Non-Qur’anic groups

Figure 3 below reports results from the odd-one-out task that was used to test whether the Qur’anic group would be more accurate than the Non-Qur’anic group at discriminating French words that had different rhyming sequences.

![Figure 3](image)

**Figure 3.** Mean difference in phonological awareness between Qur’anic & Non-Qur’anic groups.

Based on the odd-one-out task, Figure 3 shows a slight difference of means between the first year Qur’anic group and Non-Qur’anic group. While the Qur’anic group obtained a mean of
2.1(SD=1), the Non-Qur’anic group obtained a mean of 1.6(SD=1). Nevertheless, an ANOVA statistical test between groups revealed no significant statistical difference of means between Qur’anic and Non-Qur’anic group, $F(2, 58) =1.070, p>0.285$. Furthermore, a comparison of the mean difference between girls and boys within group showed no significant difference for the Qur’anic group, $F(2, 28)=3.302, p>0.384$ or the Non-Qur’anic group, $F(2,28)=1.670, p>1.395$). In other words, the Qur’anic group (or the Non-Qur’anic group) behaved as a fairly homogeneous group with no significant statistical differences by gender.

This finding between groups suggests that the Qur’anic group and the Non-Qur’anic group equally identified words that did not belong to the target set. In other words, despite their early experience with sound discrimination in Arabic, the Qur’anic group had no advantage over the Non-Qur’anic group when it came to discriminating French words accurately. Thus, this finding does not support our first hypothesis. That is, the Qur’anic children were not more accurate than the Non-Qur’anic children at discriminating actual French words that had different rhyming sequences.

In the following section, we will report Qur’anic and Non-Qur’anic groups’ decoding skills scores measured through a picture-word identification and association task.

5.1.3 Decoding skills results

Early decoding skills, one important component of home literacy, are thought to be indispensable for early success in decoding skills for children at school. Decoding skills, known as the “the ability to translate [map] written words into speech”(Stothard & Hulme, 1995, p.54) constitute a crucial component of reading comprehension as well. It was hypothesized in this research that having been presented with print materials at home through early Arabic schooling,
Qur’anic children would show higher levels of L2 French decoding skills compared to Non-Qur’anic children who had not been exposed to print materials.

5.1.4 Qur’anic and Non-Qur’anic groups

Figure 4 below reports results from the picture-word identification and association task that was used to test whether the Qur’anic group would be more accurate than the Non-Qur’anic group at decoding a set of French words and associating them with their referents shown in pictures.

![Graph showing mean difference in decoding skills between Qur’anic and Non-Qur’anic groups.](image)

**Figure 4.** Mean difference in decoding skills between Qur’anic and Non-Qur’anic groups.
Figure 4 shows a significant difference in mean scores between these two groups. While the Qur’anic group obtained a mean of 5.2 (SD=2.3), the Non-Qu’ranic group obtained a mean of 2.5 (SD=1.7). In other words, with a substantial difference in means between these two groups, there is an indication that the Qur’anic group outperformed the Non-Qur’anic group. An ANOVA statistical test to compare the scores of these two groups further confirmed the significant statistical difference between them, $F(2, 58)=10.9133$, $p<0.001$. Nevertheless, a comparison of the mean difference between girls and boys within each group showed no significant difference for the Qur’anic group, $F(2, 28)=8.63$, $p>0.185$ or the Non-Qur’anic group, $F(2, 28)=0.527$, $p>1.015$.

These results between groups suggest that the Qur’anic group who already attended Qur’anic schooling benefited from this acquired ability when associating words and their referents shown through pictures compared to the Non-Qur’anic group. That is, the Qur’anic group’s early decoding skills (i.e., memorizing and reciting sections from the Quran at the Qur’anic school) might have been transferred when decoding words in French and associating them with their referents shown in pictures. Thus, this finding supports our second research hypothesis that Qur’anic children with their early decoding skills and experiences in the Qur’anic text were more accurate than the Non-Qur’anic children at decoding a set of words in French and associating them with their referents shown through pictures. In other words, having been presented with print materials at home or through Arabic school, Qur’anic children showed higher levels of L2 French decoding skills compared to Non-Qur’anic children who had not been exposed to print materials.
5.1.5 Reading comprehension results

Reading, or the ability that one has to establish and master the correspondence between written words and spoken words in order to determine the meaning being conveyed is, thought to be an important cognitive activity (Adams, 1990). It was hypothesized in our research that the lack of reading skills in Wolof at home or in Arabic at the Qur’anic school may hinder the acquisition of reading comprehension in L2 French. Thus, when presented with reading materials in French at school, Non-Qur’anic children would show lower levels of L2 French reading comprehension compared to Qur’anic children.

5.1.6 Qur’anic and Non-Qur’anic groups

Figure 5 below reports results from the reading comprehension task that tested whether the Qur’anic group would be more able than the Non-Qur’anic group to read a short French reading text and understand its meaning.
Based on the reading comprehension task administered to both Qur’anic and Non-Qur’anic groups, Figure 5 shows a significant difference in mean scores between these two groups. While the Qur’anic group obtained a mean of 4.7 (SD= 2.6) the Non-Qur’anic group obtained a mean of 2.5 (SD=1.4). An ANOVA statistical test to compare scores of the two groups confirmed further the significant difference between them, $F(2, 58) = 10.9133, p < 0.001$.

The comparison of the mean difference between girls and boys within group still revealed no significant statistical difference for the Qur’anic group, $F(2, 28)=1.651, p>0.475$ or the Non-Qur’anic group, $F(2,28)=2.442, p>2.64$.
These results between groups suggest that the Qur’anic group, who already had access to print through the Quran at the Qur’anic school or at home, benefited from this acquired ability when reading a text in French compared to the Non-Qur’anic group. That is, the Qur’anic group’s early reading skills in the Arabic language (i.e., memorizing and rewriting scripts from the Quran text, working collaboratively with teachers and parents to recite the Quran) were transferred when presented with a reading comprehension test in French.

These findings support our third research hypothesis. That is, the lack of reading skills in Wolof at home or in Arabic at the Qur’anic school hindered the acquisition of reading comprehension in L2 French. In other words, when presented with the same reading comprehension test in French at school, Non-Qur’anic children showed lower levels of L2 French reading comprehension compared to Qur’anic children. Our research finding is also consistent with Cummins’ work on the interdependence between L1 literacy and L2. More specifically, our research supports Cummins’ cross-linguistic transfer hypothesis of L1 reading skills to L2 reading skills (Cummins, 1978, 1983, 1984).

In the following section, we will report results from the questionnaire from both the Qur’anic and Non-Qur’anic groups of children pertaining to their literacy experience at home (parents) and literacy experience with others (teachers, siblings, and friends). These results aimed to help us further understand the tendencies observed in the series of tasks that children completed.

5.1.7 Questionnaire results

The questionnaire conducted with children was designed to seek further information on the Qur’anic and Non-Qur’anic groups’ early literacy experience through reading at home and reading with others. The first theme of children’s early literacy experience through reading at
home included two major questions: (1) how often do you play word or letter games at home? and (2) how often do you use books at home? The second theme of children’s early literacy experience through reading with others included two major questions as well: (3) how often do your siblings, friends or teachers read to you? and (4) how often do your parents read to you? In responding to each of the questions outlined above, both Qur’anic and Non-Qur’anic children were provided a set of possible responses on the questionnaire presented on a Likert scale format from 1 to 5 (NEVER being 1; SELDOM being 2; SOMETIMES being 3; OFTEN being 4; ALWAYS being 5).

First, we will report results, illustrated later in Figure 6, of the questionnaire with the Qur’anic group of children with respect to their literacy experience of reading at home. Second, we will report results, shown later in Figure 7, of the questionnaire conducted with the Non-Qur’anic group. Third, we will report results, shown later in Figure 8, of the questionnaire with the Qur’anic group of children with respect to their literacy experience of reading with others (e.g., friends, and teachers). Lastly, we will report results, shown later in Figure 9, of the questionnaire with the Non-Qur’anic group as well.

5.1.7.1 Theme one: Children’s literacy experience of reading at home

As indicated in the literature review, the concept of home literacy has been an object of considerable study in the SLA literature (Adams, 1990; Feitelson & Goldstein, 1986; Li & Rao, 2000; McBride-Chang, 2004). Although home literacy is a generic term used to describe an informal learning environment, it is often used to describe an environment in which children are usually exposed to print (i.e., reading materials). Given the amount of reading materials that children could be exposed to in these types of homes, a number of researchers (Adams, 1990; McBride-Chang, 2004) have found a strong correlation between literacy experience of
reading at home, and decoding and reading success at school. For example, in his groundbreaking work, *Beginning to read: Thinking and Learning about Print*, Adams (1990) strongly suggests that the awareness of reading through exposure to print (i.e., word or letter games, using books) is one of the most important predictors of good decoding and reading comprehension at school. This view was corroborated by Feitelson and Goldstein (1986) whose research on pre-literacy children in Israel concluded that 60% of pre-school children from neighborhoods where children who do poorly in reading at school did not have a single book in their homes. In the context of our research, whereas the Non-Qur’anic group of children showed a lower tendency to play word or letter games, use books at home or even read to others (parents), the questionnaire results with the Qur’anic group showed a different tendency. That is, an overwhelming majority of children in the Qur’anic group declared being always exposed to the Qur’anic text at home and in the Qur’anic schooling. Most significantly, these children received a considerable amount of support from their parents at home as well as their Qur’anic teachers at school.

In the following section, we will report results, illustrated in Figure 6 below, of the questionnaire with Qur’anic children’s literacy experience of reading at home.

### 5.1.7.1.1 Qur’anic group

Figure 6 reports results from the questionnaire conducted with the Qur’anic group with respect to literacy experience of reading at home. In this test, each Qur’anic child was asked to tell us how often he or she plays word games or uses books at home.
Based on the two questions on literacy experience of reading at home, Figure 6 shows that 60% (N=18) of children in the Qur’anic group stated that they always play word games and use books at home. While 17% (N=5) of them declared they often play word games and use books at home, 14% (N=4) stated that they sometimes play word games and use books at home. 6% (N=2) of children confirmed that they seldom play word games and use books at home. Only 3% (N=1) maintained that they never play word games or use books at home.

These findings suggest that early exposure to print at home or at the Qur’anic school enhances L2 French decoding skills for the Qur’anic group. That is, Qur’anic children who had been exposed to print at home or at the Qur’anic school did well when presented with a decoding task in French. These findings are consistent with the ANOVA statistical test results on L2 French decoding that we reported earlier in Figure 4 on the Qur’anic and Non-Qur’anic groups. Those results confirmed a significant advantage for the Qur’anic group over the Non-Qur’anic
group with regard to L2 French decoding skills at school. Most significantly, these findings support our fourth and last hypothesis. That is, parental intervention to help children decode at home has significant positive impact on children’s decoding skills at school. In other words, the Qur’anic children who were helped with decoding at home outperformed the Non-Qur’anic children who did not receive any help with decoding at home.

In the following section, we will report results, illustrated in Figure 7 below, of the questionnaire with Non-Qur’anic children’s literacy experience of reading at home.

5.1.7.1.2 Non-Qur’anic group

Figure 7 reports results from the questionnaire conducted with the Non-Qur’anic group with respect to literacy experience of reading at home. Similarly to the Qur’anic group, in the questionnaire with the Non-Qur’anic group, each child was asked to tell us how often he or she plays word games or uses books at home.

![Figure 7](image)

**Figure 7.** Average literacy experience of reading at home for the Non-Qur’anic group
Based on the two questions with respect to literacy experience of reading at home, Figure 13 shows that 50% (N=15) of children in the Non-Qur’anic group stated that they never play word games or use books at home. While 17% (N=5) of them declared they seldom play word games or use books at home, 13% (N=4) stated that they sometimes play letter games and use books at home. Only 3% (N=1) of children confirmed that they often play letter games and use books at home, and 3% (N=1) declared that they always play letter games or use books at home.

These findings suggest that the lack of early exposure to print at home or at the Qur’anic school affects L2 French decoding skills for the Non-Qur’anic group. That is, Non-Qur’anic children who had not been exposed to print at home or at the Qur’anic school encountered difficulties when presented with a decoding task in French. Once again, these findings are consistent with the ANOVA statistical test results reported in Figure 4 between the Qur’anic and the Non-Qur’anic children. Those results confirmed a significant advantage for the Qur’anic children over the Non-Qur’anic children on the L2 French decoding skills test scores.

In the following section, we will report children’s literacy experience of reading with others (i.e. parents, friends, siblings or teachers). Under the theme of children’s literacy experience with others, children were asked the following questions (3) how often do your siblings or friends read to you? and (4) how often do your parents read to you?

5.1.7.2 Theme two: Children’s literacy experience of reading with others

The concept of scaffolding in reading discussed earlier in the literature review section, although it has been used for several purposes, has been thought to be an important step in helping children to read well (Vygostky, 1978; Whitehurst et al., 1988). This mechanism in which parents or teachers intervene to help children read printed materials is, in my opinion, another crucial element for subsequent success in reading for school children. In fact, during our
data collection, we witnessed Qur’anic children engaging in intensive one-on-one reading, reciting and transcribing scripts of the Qur’anic text with the help of Qur’anic instructors at the Qur’anic schools in Touba. In the section dedicated to the discussions of result outcomes, we will further discuss the fact that daily intervention of both parents and teachers to help the Qur’anic group to decode and read the Qur’anic text has benefited the Qur’anic children considerably when presented with the tasks of decoding and reading comprehension in French.

In the following section, we will report results, illustrated in Figure 8 below, of the questionnaire with the Qur’anic group with respect to their literacy experience of reading with others (i.e., parents, friends, siblings or teachers).

5.1.7.2.1 Qur’anic group

Figure 8 reports results from the questionnaire conducted with the Qur’anic group with respect to literacy experience of reading with others (i.e., parents, friends or siblings). In this test, each Qur’anic child was asked to tell us how often he or she read with others.
Figure 8. Average of literacy experience of reading with others for the Qur’anic group

Figure 8 shows that from the two questions collected in the questionnaire on the theme of children’s literacy experience reading with others, 83% (N=26) of children in the Qur’anic group confirmed that their Qur’anic teachers *always* read to them at the Qur’anic schooling and their parents read the Quran to them at home as well. While 10% (N=3) of them declared that their Qur’anic teachers and parents *often* read the Quran to them, 3% (N=1) stated that their Qur’anic teachers and parents *sometimes* read the Quran to them. Only 3% (N=1) of children confirmed that their Qur’anic teachers and parents *seldom* read to them. No child in the Qur’anic group confirmed to us that friends or parents *never* read to them.

These findings suggest that Qur’anic children who had been exposed to reading with parents at home or with Qur’anic teachers at the Qur’anic school did well in L2 French reading comprehension at school. Once again, these findings support our fourth and last hypothesis. That is, parental intervention to help children begin reading at home has significant positive impact on
children’s reading at school. In other words, the Qur’anic children who were helped with reading at home outperformed the Non-Qur’anic children who did not receive any help with reading at home. These findings are consistent with Vygotsky’s experimental intervention study (1978) reported earlier in chapter 3. That is, parental involvement through a scaffolding reading mechanism to help children read is perhaps one of the clearest pieces of evidence that, so far, establishes a correlation between early success in reading at home and later success in reading at school (McBride-Chang, 2004; Snow et al., 1998, Whitehurst and Lonigan, 1998).

In the following section, we will report results, shown in Figure 9, of the questionnaire conducted with the Non-Qur’anic group with respect to their literacy experience of reading with others as well.

**5.1.7.2.2 Non-Qur’anic group**

Figure 9 reports results from the questionnaire conducted with the Non-Qur’anic group with respect to literacy experience of reading with others. Similarly to the Qur’anic group, each child in the Non-Qur’anic group was asked to tell us how often he or she reads with parents at home or with friends, siblings or teachers.
Figure 9. Average literacy experience with others for the Non-Qur’anic group

Figure 9 shows that from the two questions collected in the questionnaire on the theme of children’s literacy experience of reading with others, a majority of the children in the Non-Qur’anic group, 67% (N=20) stated that their parents, friends or siblings never read to them. While 17% (N=5) of them declared that their parents, friends or siblings seldom read to them, 10% (N=3) stated that their parents, friends or siblings sometimes read to them. Only 3% (N=1) of children confirmed that their parents, friends or siblings often read to them. One child confirmed to us that his parents, siblings or friends always read to him.

These findings suggest that the absence of parental intervention to read to these Non-Qur’anic children at home greatly impacted their L2 French reading comprehension at school. That is, Non-Qur’anic children who never or seldom spent time reading with their parents at home encountered difficulties when presented with a short reading comprehension test in French. The findings are also consistent with findings in the ANOVA statistical test scores on L2 French
reading comprehension we reported earlier in Figure 5 between the Qur’anic and the Non-Qur’anic children. That is, Non-Qur’anic children who never got literacy in the Quran or read with parents at home did not do well when presented with a short reading comprehension text in French.

In the following section, we will report the results of the semi-structured interviews with parents through qualitative analysis.

5.2 Qualitative data

With respect to the qualitative results, we will first report answers from the semi-structured interviews with Qur’anic parents conducted at Gaindé Fatma elementary school in Touba, and then we will report answers from the semi-structured interviews with the Non-Qur’anic parents conducted at Daroukhane B elementary school in Dakar. Although we will use percentages to illustrate the different tendencies we observed between Qur’anic and Non-Qur’anic parents with respect to the general attitude toward the French language, this report will be descriptive.

5.2.1 Theme 3: Parents’ attitude toward the French language

Attitudes toward the French language in Senegal are largely influenced by the geographical area of residence, the religious affiliation and, to a lesser extent, the ethnic background one identifies with. Whereas the overwhelming majority of parents (90%) interviewed in Touba had a very negative attitude toward the French language, 54% of parents interviewed in Dakar had a somewhat negative attitude toward the French language (Semi-structured interviews Touba& Dakar, 2012a and 2012b). Although there could be several other factors that could account for these negative attitudes, the most often cited reasons from these Touba parents were historical and religious. With regard to parents in Dakar, we found that the
main reasons behind their negative attitudes were varied (i.e., cultural, historical). On the other hand, those parents in Dakar who have a positive attitude toward the French language justified it with economic and socio-professional rather than religious or cultural reasons. We will further discuss these in the following sections and in chapter 6 dedicated to the thesis discussion.

To collect the data, we designed a semi-structured interview questionnaire to allow parents to voice their opinions on their attitudes toward French and add comments if they so wished. Some of them have provided us with a few comments on why they had positive or negative attitudes toward the French language. We asked each parent in the Qur’anic and Non-Qur’anic groups the following questions: (1) what language do you use at home? (2) what language(s) do you prefer for your child’s instruction at school?, and (3) what is your overall attitude toward the French language? Additionally, we recorded some of the Qur’anic and Non-Qur’anic parents’ remarks on their overall attitudes toward the French language (some of their comments and remarks are reported at the end of each section dedicated to each group).

In the following section, we will first report the Qur’anic parents’ overall attitude toward the French language, and we will then report on the Non-Qur’anic parents with respect to their overall attitude toward the French language.

5.2.1.1 Qur’anic parents’ attitude toward French in Gaindé Fatma, Touba.

In the following section, we will first analyze answers we gathered from the Qur’anic parents in Touba with respect to (1) the language used at home, (2) the language of instruction at school and (3) the overall attitudes toward the French language.

5.2.1.1.1 What language do you use at home?

When asked (1) what language do you use at home, a significant cohort of Qur’anic parents, 83% (N=25) of the thirty parents who participated in the interviews responded
that they used (i.e., talked to children in) Wolof at home. Only 16% (N=5) of those Qur’anic parents declared that they mixed Wolof with other languages such as Serere or Pulaar. Most significantly in this research, many Qur’anic parents, 93% (N=28) in Touba, acknowledged that they worked with children reciting the Qur’anic text to them three to five times a day. A few Qur’anic parents, 7% (N=2) abstained from answering our question with respect to the use of Arabic at home.

The numbers show that the great majority (83%) use their national language (Wolof) to communicate with their children even when talking to their children about the Quran or helping them read the Quran. This suggests that the Arabic language, although the language of the Quran, is mixed with Wolof at home. Most importantly, the Arabic language carries the same linguistic weight in the eyes of the Qur’anic parents because it serves as the language in which God speaks and continues to speak to them through the Quran. This has been reflected in the questions we posed to parents with regard to the language of instruction they prefer for their children. Over 62% of the Qur’anic parents would like their native language be taught in conjunction with a foreign language, Arabic. Perhaps this is where the religious dimension would explain more why a foreign language would carry the same weight as the native language for these Qur’anic parents in Touba. In chapter 2, we briefly discussed the cohabitation between Arabic and Wolof and the role that the Qur’anic parents’ spiritual leader, Bamba, played in spreading the Arabic language to the detriment of French. Bamba fought against the establishment of the French schools in Senegal, particularly in Saint-Louis where he was summoned to respond to charges and allegations against him for spreading Islam and banning the use of the French language in his surroundings. For several years he was confined to solitary confinement as he categorically refused to answer questions posed to him in French by his
colonial accusers. In that particular respect, this religious dimension could not be overlooked when dealing with the language situation in the geographical area of Touba. We believe that this confrontation that Bamba had with the French authorities over many decades from 1895 until his passing in 1927 in Touba still has implications for the strong negative attitude toward the French language. That is why when asked about their language of preference for the instruction of their child at school, only 3 Qur’anic parents said the French language should be taught provided that their children first knew the Arabic language through the Quran.

5.2.1.1.2 What language(s) do you prefer for your child’s instruction?

When asked (2) what language(s) do you prefer for your child’s instruction at school, a majority of Qur’anic parents in Touba wanted the Arabic language to be taught in conjunction with Wolof in school. For example, while 63 % (N=19) of Qur’anic parents declared that the Arabic language should be taught in conjunction with Wolof, 27 % (N=8) of Qur’anic parents wanted Wolof to be taught solely. 10% (N=3) of Qur’anic parents thought French should be taught after their children had mastered the Arabic language and Wolof. Although the teaching of the Quran is at the heart of most Qur’anic parents in Touba, these numbers suggest that Qur’anic parents in Touba still overwhelmingly support the use of a vernacular language (Wolof) for the instruction of their children as well. Based on the percentages reported above, we can conclude that the overwhelming majority of Qur’anic parents rejected an instruction engrained in the French language for the same historical reasons we outlined above about Bamba. Instead, Qur’anic parents wanted a bilingual education that takes into consideration Wolof and the Arabic language at the same time. This is not to suggest that all Qur’anic parents would like their children to be expert at speaking the Arabic language fluently but at least they wanted their children to be taught how to read and write the Quran well. As we can see in the next section, the
Qur’anic group’s rejection of the education grounded in French has been reflected in their overall attitude toward the French language as well.

5.2.1.1.3 What is your overall attitude toward the French language?

When asked what is your overall attitude toward the French language, the majority of Qur’anic parents said they had negative attitudes toward the French language because of what it represented to them in the past. For example, a great majority of Qur’anic parents, 90% (N=27), declared that they had a negative attitude toward the French language. Only two Qur’anic parents (6%) thought that they had a positive attitude toward the French language, while one Qur’anic parent, 4%, abstained from commenting on his attitude. Some of the statements below extracted from my 2012 semi-structured interviews shed some light on the Qur’anic parents’ attitude toward the French language.

Parent M: “My attitude toward French is negative because they make us lose our culture.”

Parent M: “I don’t like French because the French authorities deported Cheikh Ahmadou Bamba.”

Parent M: “I have a negative attitude toward French because I can’t help my child with the language at home, I always speak Wolof to my children, and they need to know their roots.”

Parent F: “My attitude toward French is negative because here in Senegal our values are no longer respected, the new generation does not follow Islam anymore.”

Parent F: “Because of what they did to Cheikh Ahmadou Bamba, I hate the French.”

Parent F: “French has caused us to lose our Islamic values… my children spend hours listening to French music and watching French movies.”

It clearly transpires from these statements above that there is certainly a desire for some Qur’anic parents to associate their negative views of the French language with what was done to their spiritual leader, Bamba. It is worth reminding that earlier in chapter 2, discussing Bamba’s
involvement in the colonial fight to protect his town, Touba, from any colonial foreign infiltration, we briefly discussed how Bamba, through the teaching of the Quran and the Arabic language, contributed to forging an overall negative attitude toward the French language because of what it symbolized at that time. This may perhaps explain some of these negative views of the French language. These opinions, although they may not be representative of the opinions of the general population of Touba, give us at least a glimpse of what the French colonialism means for these Qur’anic parents. Beyond the linguistic implications, the historical dimension also is very present as indicated earlier in the introduction.

In the following section, we will lastly report on the Non-Qur’anic parents with respect to their overall attitudes toward the French language.

5.2.1.2 Parents’ attitude toward French in Daroukhane B in Dakar

In the following section, we will first analyze answers we gathered from the Non-Qur’anic parents in Daroukhane B with respect to (1) the language used at home, (2) language instruction at school and (3) overall attitudes toward the French language.

5.2.1.2.1 What language do you use at home?

When asked (1) what language do you use at home, several Non-Qur’anic parents declared that they used Wolof to communicate with their children on a daily basis. For instance, while a majority of Non-Qur’anic parents, 65% (N=19) said they used Wolof during informal conversations, a few Non-Qur’anic parents, 21% (N=7) confirmed using other national languages (e.g., Jola, Mandinka, Soniké) and four Non-Qur’anic parents, 14% (N=4) preferred to speak to their children in French while mixing it with Wolof.

Like the Qur’anic parents we discussed earlier, the Non-Qur’anic parents, to a lesser degree, expressed a major preference for the use of their native language, Wolof, at home. As the
numbers show, however, Non-Qur’anic parents are more open to the use of the other national languages (e.g., Jola, Mandinka) than the Qur’anic group. This is consistent with what we said earlier in the description of our population sample (chapter 4) about Dakar being a heterogeneous community of people where different languages interact on a daily basis. Nevertheless, what remains constant for both the Qur’anic and Non-Qur’anic parents is the sense of bonding around their native language, Wolof. More than 60% of Non-Qur’anic parents, compared to 83% of the Qur’anic parents, were still favorable to the use of Wolof at home even though Qur’anic parents gave the same priority to the Arabic language. This common bonding around the native language Wolof is a clear indication that there is a strong need for the establishment of literacy education grounded in the mother tongue Wolof. In the next section, we will find out that more than 50% of the Non-Qur’anic parents supported an education in the mother tongue, Wolof, as well.

5.2.1.2.2 What language(s) do you prefer for your child’s instruction?

When asked (2) what language(s) do you prefer for your child’s instruction at school, a majority of Non-Qur’anic parents, 57% (N=17), supported the use of Wolof for the instruction of their children at school. While Non-Qur’anic parents, 27% (N=8) preferred French to be used at school for the instruction of their children, three Non-Qur’anic parents, 10% (N=3), wanted the Arabic language to be taught to their children first, followed by Wolof and French. Two Non-Qur’anic parents, 6% (N=2) abstained from voicing their opinions. Unlike what we saw in the case of Qur’anic parents, the Non-Qur’anic groups were more flexible concerning the introduction of French into the elementary school system. In other words, as the numbers above indicate, 27% of the Non-Qur’anic group compared to 3% for the Qur’anic group would want French to be taught to their children after they learn the Quran. This stark discrepancy between these two groups may reflect the amount of religious education that these groups received during
their life experiences. Most importantly, the context of educational backgrounds these parents had would also help to explain the difference. In other words, most Non-Qur’anic parents were raised in a multilingual and multicultural context in which they had the opportunity to be exposed to a variety of languages and religious backgrounds.

In the next section, we will find out that these Non-Qur’anic parents were more open to the idea of learning and using the French language as well.

5.2.1.2.3 What is your overall attitude toward the French language?

When asked what is your overall attitude toward French, the Non-Qur’anic parents had a mixed feeling toward the French language. Whereas sixteen Non-Qur’anic parents, 54%, expressed a somewhat negative attitude toward French, fourteen Non-Qur’anic parents, 46%, maintained that they have a positive attitude toward the French language.

Compared to what we observed with the Qur’anic parents, the Non-Qur’anic parents were less negative toward the French language. For instance, as the numbers above indicate, 54% of Non-Qur’anic parents expressed a negative attitude toward the French language. Nevertheless, when we compared this percentage with the Qur’anic parents we see that the Qur’anic parents expressed more negative attitudes by far with a 90% disapproval rate of the French language. This difference in attitude between the Qur’anic parents and the Non-Qur’anic parents, in our opinion, lies in the different experiences these people had with respect to their context of education and experience with the French language. Whereas Qur’anic parents held a grudge against the French language, a significant number of Non-Qur’anic parents thought knowing the French language would open doors to professional success, as we can see in the statements below.
Parent F: “I don’t like French but I have no choice because if my children want a job they need French.”

Parent M: “I like French because it is a language that opens up a lot of opportunities.”

Parent F: “I guess French is good for jobs.”

Parent M: “I am a teacher; my attitude toward French is that French is a means that allows us to get where we want to be professionally, but we need to know our own local languages.”

Parent F: “I like French but I like Arabic better because Arabic is the language of the Quran.”

Parent M: “If you do not speak French you cannot travel anywhere in the world.”

5.3 Conclusion

This chapter has reported the results obtained from the phonological awareness, decoding and reading comprehension tasks for both the Qur’anic and Non-Qur’anic groups of Wolof children. Although the results obtained within each group when comparing girls and boys remain statistically insignificant in all tasks (i.e., phonological awareness, decoding and reading comprehension) between the Qur’anic and Non-Qur’anic group as well, there is a significant difference between Qur’anic and Non-Qur’anic groups in the test scores of decoding skills as $F(2, 58)=10.9133, p<0.001$ and reading comprehension as $F(2, 58)=10.9133, p<0.001$. Nevertheless, there was no significant difference between the Qur’anic and Non-Qur’anic groups in the test score of phonological awareness as $F(2, 58)=1.070, p>0.285$.

In addition, the questionnaire we conducted with both Qur’anic and Non-Qur’anic groups of children provided useful pieces of information to validate results on the Qur’anic group’s higher score on the decoding and reading comprehension tasks. The semi-structured interviews we conducted with parents in both Touba and Dakar provided further evidence on the
performance gap between Qur’anic and Non-Qur’anic groups. While a great majority of Qur’anic children (83%) in Touba daily read the Qur’anic text at the Qur’anic school and received help from their parents who read the Quran to them at home, very few children in the Non-Qur’anic group in Daroukhane Bhad that opportunity. Therefore, both the questionnaire conducted with children and the semi-structured interviews conducted with parents gave advantage to the Qur’anic children over the Non-Qur’anic children. In other words, the Qur’anic children whose parents intervened to help them with decoding and reading the Qur’anic text at home significantly outperformed some of the Non-Qur’anic children who did not have that opportunity.

In the following Chapter 6 dedicated to the discussion of results, we will further discuss these result outcomes.
Chapter 6: Discussion

The present research on the relationship between L1 literacy in Wolof and L2 French learning has revealed several interesting findings among the Wolof Qur’anic and Non-Qur’anic groups of children in Senegal with respect to phonological awareness, decoding skills and reading comprehension. Moreover, based on the questionnaire conducted with these groups of children, we found a correlation between experience of decoding and reading at home and success at L2 French decoding and reading comprehension skills at school. Further investigation of their parents’ overall attitude toward the French language measured through semi-structured interviews further confirmed that correlation.

This chapter provides further detailed accounts of the overall findings. A review of the quantitative results, starting with phonological awareness, decoding skills, reading comprehension and questionnaire with the Qur’anic and the Non-Qur’anic children will precede a consideration of the qualitative results based on the semi-structured interviews administered to parents. It is worth reminding that both quantitative and qualitative results are always presented together throughout this research because they are the complementary pieces of information needed to understand the research outcomes.

6.1 General discussion of the quantitative results

6.1.1 Phonological awareness

Phonological awareness and other subcomponents of reading, (i.e., decoding skills, metalinguistic awareness) were considered in this research as the foundational basis for successful reading comprehension. There is a wide consensus among researchers (Adams, 1990; Garton & Pratt, 1989; McBride-Chang, 2004) that both phonological awareness and decoding skills are the fundamental building blocks of reading comprehension. The first
prerequisite for mastery of reading comprehension is embedded in understanding that different letter combinations or patterns in the language convey differences in meaning. The second prerequisite is embedded in knowing how to decode the different words, sentences and phrases that constitute a text. This view is corroborated by Adams who convincingly suggests in his reading-readiness concept that phonological awareness and decoding skills are some of the steps toward to mastering reading comprehension (Adams, 1990).

The research predicted that Qur’anic learners of L2 French who had early experience enhancing their auditory system or had been fully exposed to sounds and print through Qur’anic schooling would score higher on L2 French phonological awareness, decoding skills and reading comprehension compared to Non-Qur’anic learners of L2 French. Although the research findings validated these hypothesizes with respect to decoding skills and reading comprehension skills, the first hypothesis with regard to phonological awareness was not supported by the findings.

For the first research question—how do Wolof children’s early experiences with sound discrimination in the Arabic through the Quran reflect on their L2 French phonological skills in French (i.e., phonological awareness) at school?—it was found that early experiences with sound discrimination in the Arabic language did not indicate a major advantage for the Qur’anic group over the Non-Qur’anic group who lacked those early experiences—children in both groups showed no significant difference in scores in L2 French phonological awareness at school. And yet, it was expected that the Qur’anic group, who had a prior knowledge of the correspondence between graphemes and phonemes in the Arabic language, would have an advantage over the Non-Qur’anic group who did not have that exposure to the Arabic language. On the contrary, phonological awareness results showed that, despite their early exposure to sounds in the Arabic
language, the Qur’anic group was not statistically at any significant advantage over the Non-Qur’anic group.

This finding suggests that, because phonological awareness primarily involves the ability to discriminate between sounds before mapping them into letters, both the Qur’anic group and the Non-Qur’anic group had already developed sound discriminating skills in their mother tongue, Wolof. They both primarily draw from the same auditory mechanism that they had already internalized during the acquisition of their mother tongue. Thus, it is likely that when asked to discriminate words from the target set, there appeared to be no statistically significant difference among children regardless of their language backgrounds. It is worth noting that the development of a written form of the Wolof language is very recent in Senegal. Until the 1980s, there was no written form of Wolof available for preschool children in Senegal; and even though there currently exists a Wolof written form, only a very small fraction of the Senegalese population (writers, poets and university professors, etc.) could identify the correspondence between spoken and written words in Wolof. Therefore, an overwhelming majority of Wolof parents and educators still communicate orally with their children in the Wolof language. The lack of early exposure to the written form of the Wolof language for many Wolof children certainly had major implications for the L2 oral language development for both the Qur’anic and Non-Qur’anic groups observed in this research.

Because Wolof learners do not benefit from the letter-sound correspondence knowledge that many L1 literate children possess, they may develop and cement an early phonological sensitivity. In contrast with phonological awareness, phonological sensitivity is understood in the SLA literature as an all-inclusive term for individual sensitivities to speech sounds (Stanovich, 1986). Phonological sensitivity is a sub-component of phonological awareness because being
aware of the relationship between sounds and words (i.e., phonological awareness) can be one component and being sensitive to sounds (i.e., phonological sensitivity) another.

The differentiation of these two concepts (i.e., phonological awareness and phonological sensitivity) is of paramount importance in explaining the tendency observed between the Qur’anic and Non-Qur’anic groups in the context of Senegal. Unlike L1 literate children in many Western communities, lack of early exposure to written forms in the Wolof language might have led many Wolof child learners of L2 French to rely heavily on discriminating sounds rather than trying to understand the written correspondence of those sounds. In fact, it has been observed in the literature that within communities with oral traditions such as the Wolof community people develop a stronger mechanism of listening and speaking skills (Wagner, 1994). Most significantly, they have a wider memory capacity to retain information (this is the case of many griots in Senegal who have a high reputation for their memory retention and public speaking skills) and strong hearing mechanism in which the ear pays more attention to what is being said than what is being seen, as this is not the case in most Western communities that place a stronger emphasis on writing. This is not to argue that in most Western communities the ear does not play the role of active listening, but to simply suggest that active listening is more pronounced in many oral communities (Wagner, 1994).

Given this information, it can be assumed that both the Qur’anic and Non-Qur’anic groups might have transferred their auditory skills from Wolof when presented with a set of sounds in the French language. Although the notion of cross-linguistic transfer of phonology has received considerable attention in the SLA literature, what is being transferred from the native language to the second language is not solely the phonology, but also a whole system of attention and hearing sensitivity associated with sound discrimination. The development of phonological
awareness for many of these oral communities is not the sole ability to map sounds they hear into letters (i.e., phonological awareness), but it does also require strong sensitivity to sounds (i.e., phonological sensitivity).

With respect to this notion of sensitivity to sound, Garton and Pratt (1989) have supported the view that there is more to phonological awareness than simply learning how to mechanically map sounds onto letters in a listening comprehension activity. The sensitivity to sounds and the capacity to direct a great deal of attention to differentiating separate sounds are perhaps some of the most important strategies in discriminating sounds from spoken words. The early development of phonological sensitivity to sounds is an indicator of success for Wolof children who participated in the L2 French phonological awareness task. Despite the orthographic difference between Wolof, Arabic and French, both Qur’anic and Non-Qur’anic groups might have managed to transfer their phonological sensitivity from Wolof to French. It is worth mentioning here that the odd-one-out task administered to both Qur’anic and Non-Qur’anic groups was focused on sound discrimination among a set of words in French. It is plausible that participants’ sensitivity to different sounds in the Wolof language may have been transferred to the task of identifying a sound that does not belong to the rest of the set of French words orally presented to them. The fact that the Non-Qur’anic group scored equally to the Qur’anic group could be an indication that neither group was required to establish the correspondence between oral French words (i.e., phonemes) and their corresponding letters (i.e., graphemes). This further demonstrates that L1 Wolof sound discrimination knowledge was only useful for the Non-Qur’anic group when it came to applying their phonological sensitivity to sounds in the L2 French. Arguably L1 Wolof sound sensitivity would not be so useful to a task requiring the decoding of written words. This is not a surprising finding because other
researchers likewise demonstrated a rather weak association between oral vocabulary knowledge in English and success in foreign languages (e.g., French, Hebrew) decoding skills (Geva et al., 2000).

In fact, further discussion of the results from decoding skills and reading comprehension provided below in this research will support the aforementioned studies. The discrepancies in scores between the Qur’anic and Non-Qur’anic groups became more and more pronounced in tasks requiring the combination of both components of phonological awareness (i.e., correspondence between phonemes and graphemes) to decode and extract meaning from a reading comprehension text; therefore, the Non-Qur’anic group scored significantly lower than the Qur’anic group on decoding skills and more significantly lower on reading comprehension.

6.1.2 Decoding skills

As indicated earlier, decoding skills are one of themost important subcomponents of reading comprehension. A solid body of SLA research has overwhelmingly supported the positive correlation between decoding skills and reading comprehension (Adams, 1990; Feitelson & Goldstein, 1986; Gough & Tunner, 1986; McBride-Chang, 2004; Snow et al., 1998). At the onset, the research conducted for this study was expected to reveal that early exposure to print at home (i.e., playing letter or word games, learning the alphabet,) or through informal Qur’anic schooling (i.e., transcribing the Qur’anic verses on tablets, learning the Arabic alphabet,) enhances decoding skills at school. In fact, the research indicated that Qur’anic Wolof children showed a higher level of decoding skills in French compared to Non-Qur’anic Wolof children at school. In that regard, the research findings validated the above hypothesis because when presented with a decoding skills task in French, it was observed that the Qur’anic children
were more accurate than the Non-Qur’anic group of children at identifying French words and associating them with their referents shown in French.

The second research question presented (To what extent does Wolof children’s early exposure to print at home or Qur’anic school (Qur’anic group) affect their decoding skills at school?) revealed another set of outcomes.

Early exposure to pre-literacy at home or in informal Qur’anic schooling (i.e., playing letter or word games, learning the alphabet) constituted a major factor in decoding skills in the French language at school. In the context of Touba, where the Qur’anic group mostly originated from, literacy is understood as the ability to read and write the Qur’anic text. Although the understanding of the implicit meaning of the Quran is not taught, children in this group are required to read, write and memorize the Quran. They are only exposed to the explicit meaning of the Qur’anic text (i.e., rhymes, word recognition). A primary reason for the lack of instruction on the meaning of the Quran is the belief that the text was derived from God’s mouth and, therefore, human beings are incapable of teaching the meaning of the Quran. This belief translates into the children’s daily recording and memorization of the Qur’anic text without contextual guidance.

The very process of memorization of the Quran has an important implication for this research. An explicit emphasis on reading, writing and memorizing the Qur’anic text highly enhanced children’s coding and decoding skills. While reading the Quran, these children primarily concentrate on understanding the explicit meaning of the text by writing out the Arabic alphabet and reading letter sounds aloud. In line with what was observed from the Qur’anic schooling in Touba, therefore, the quantitative data reported that the Qur’anic group scored
highly in the decoding skills test compared to the Non-Qur’anic group even when presented with decoding a skills task in the French language.

Our findings suggest that the Qur’anic group may have drawn their linguistic knowledge from their daily readings and recording of the Qur’anic text. Most importantly, these literacy experiences gained in the daily readings and transcription of the Quran might have been transferred to the task of decoding skills in French.

Conversely, the Non-Qur’anic group showed a lower level of decoding skills in French. This finding suggests that, because of the lack of early exposure to L1 literacy knowledge of alphabet, letters and words could transfer to L2 learning (Cook, 2002; Cummins, 2000); the Non-Qur’anic group was rather at a disadvantage. In other words, Non-Qur’anic children who had no access to early decoding skills in the Arabic language could not transfer those skills to L2 French. Given this situation, the findings support Cummins’ Developmental Interdependence Hypothesis stating that first literacy provides an important underlying structure on which second language literacy learning is built (Cummins, 1979). The notion that children who perform better in first literacy tend to do better in second language learning is firmly established in the SLA literature (Cummins, 2000; Wagner, 1993). In line with Cummins’ hypothesis, Wagner (1993), after studying first year preschool Moroccan children who learned French after developing literacy in the Arabic language, found that Year 1 Arabic-decoding skills was by far the best predictor of French decoding skills despite a difference in form and reading direction between these two languages (left-to-right for French vs. right-to-left for Arabic)(Verhoeven, 1998).

Wagner’s findings appear to support best the notion of transfer of alphabetic decoding skills across highly contrasting orthographies, as shown in our research. Although the Arabic language greatly differs from French in terms of form and reading direction, the Qur’anic
children had previous experience parsing phonemes and graphemes in Arabic whereas the Non-Qur’anic children did not benefit either from the alphabetic decoding skills in their mother tongue Wolof at home or their third language, Arabic. Thus, it is more likely that the Non-Qur’anic children could not score higher in decoding skills than the Qur’anic children. In other words, the lack of early experience parsing phonemes and graphemes in either Wolof or Arabic had likely worked against them when compared to the Qur’anic children who benefited from those early experiences.

Beyond the linguistic implication discussed above, however, the findings have religious implications as well. Due in part to the pedagogical style of memorization involved in oral reciting and calligraphic writing of the Quran, children in the Qur’anic group had developed a habitual reliance on preciseness in the recitation and writing of the Arabic language. To a considerable number of Senegalese Qur’anic teachers (i.e., Serigne and Sheikh) or religious community leaders (i.e., imams), the Quran is the word of God, therefore its recitation and transcription must obey very strict rules. By being taught early on to recite and transcribe the Qur’anic words accurately, the Qur’anic group children not only internalized a set of alphabetic decoding skills and word-decoding skills but they developed a built-in sense of automaticity and letter-word recognition that they would transfer to decoding words in the French language. Laboratory research indicates that the most critical factor beneath decoding skills is the ability to recognize letters and spelling patterns both automatically and visually (Adams, 1990). Those pre-literacy skills that Adams referred to were likely those that the Qur’anic groups developed early on before being presented with French, despite the absence of literacy in their mother tongue, Wolof.
Overall, success in decoding skills at school is mostly linked to pre-literacy experience at home or at the Qur’anic school as research findings with the Wolof Qur’anic and Non-Qur’anic groupssuggest. In that respect, Qur’anic children who miss the opportunity to develop pre-literacy skills at home could still develop these pre-literacy skills through Qur’anic schooling early on. Although there appears to be no research available in the SLA literature to investigate to what degree pre-literacy experience at Qur’anic schoolcould compensate for the absence of literacy in Wolof at home for the Qur’anic group, these findings have established that pre-literacy experiences in decoding skills acquired by the Qur’anic group through the Arabic language transferred to the French decoding skills task.

These findings are consistent with what has been widely advocated in the SLA literature; home literacy and exposure to environmental print are key to the development of successful decoding skills and, later, reading comprehension at school (Adams, 1990; McBride-Chang, 2004; Snow et al., 1998;). This view of literacy as the product of the successful implementation of pre-literacy building blocks (i.e., phonological awareness, decoding skills) seems to align with the research results observed within the Qur’anic group.

As the discussions about the reading comprehension task will show, children in the Qur’anic group who developed strong pre-literacy skills through decoding in the Arabic language significantly outperformed the Non-Qur’anic group who had no pre-literacy skills in Wolof or Arabic.

6.1.3 Reading comprehension

Reading comprehension is viewed in the SLA literature as a complex cognitive activity. Not only is it a vehicle for knowledge, but it is also often associated with various cognitive components such as phonological awareness, word recognition and decoding
skills. Research evidence supports the view that reading is not an isolated cognitive process; rather it requires other cognitive prerequisites for its mastery (Adams, 1990; Goswami & Bryant, 1990; Shankweiler et al., 1999).

At the outset, it was expected in my research that a lack of reading skills in the mother-tongue (Wolof) at home (i.e., book sharing, story-telling, parents reading to children) would hinder the acquisition of reading comprehension in L2 French at school. Thus, Non-Qur’anic Wolof learners would show lower levels of reading comprehension compared to Qur’anic Wolof children who already benefited from an informal exposure to the Arabic language. This research hypothesis was validated by my findings.

With regard to the third question (What levels of reading comprehension do Non-Qur’anic Wolof children achieve in L2 French reading comprehension by the end of their first year of school compared to Qur’anic Wolof children at school?), it was found that the Qur’anic group scored higher in the reading comprehension test than the Non-Qur’anic group. In the context of Touba where most children of the Qur’anic group originated, the reading and transcribing of the Quran are still emphasized in many Qur’anic schools across the city. As well, beyond what is taught in Qur’anic schooling, the parents (97%) of the children interviewed in this research identified themselves as Muslims who regularly assisted their children in reciting the text at home during prayer times (Touba Semi-structured Interviews, 2012a).

In addition to the explicit learning of the Quran in the Qur’anic school, children in the Qur’anic group benefited from their parents in understanding further what they studied at school. The intervention of parents in this process had important implications for the reading habit and literacy experience developed both at the Qur’anic school and at home (Questionnaire, 2012a).
Because it is a religious requirement and obligation for any able Muslim to teach their children the Quran, most children in the Qur’anic group will have benefited from working with parents in reading the Quran during the five daily prayer times at home.

The importance of parental intervention in children reading at home has received important attention in the literature. In his Zone of Proximal Development (ZPD), which was initially designed to show the amount of help that L2 learners can get from their native peers, Vygotsky (1987) describes a scaffolding mechanism in which parents intervene in the child’s development of literacy skills (Cazden, 1983; Vygotsky, 1987). Through question-answer, reading and rewriting exercises, parents are more inclined to give direct assistance to their children in developing reading skills. This parental intervention is also known as “dialogical reading”—a process in which parent and child dialogue through question-and-answer reading sessions (McBride-Chang, 2004).

In the context of the Qur’anic group, according to the semi-structured interviews, most parents declared that they read, recited and explained some of the coded meaning behind the Qur’anic text. This is consistent with the information we reported earlier from the questionnaire in which 83% of the Qur’anic children declared that their parents read the Quran to them at home and their Qur’anic teachers read to them as well at school. This exposure to the explicit learning of the Qur’anic text at school and further reading at home had provided the children in the Qur’anic group the linguistic reading repertoire from which they might have drawn when presented with a reading comprehension text in French. As indicated earlier with respect to phonological awareness and decoding skills, the issue of linguistic transfer of L1 reading skills to L2 reading skills has been widely advocated in the SLA literature (Cummins, 1979; Gonzalez,
1986, 1989; Modiano, 1968). For example both Modiano (1968) and Gonzalez (1986) found that children who develop a strong literacy in their mother tongue (Spanish) would score higher in English compared to children who developed weak reading skills in their mother tongue (Gonzalez, 1986, 1989; Modiano, 1968).

These findings are consistent with what was observed from the Non-Qur’anic group and Qur’anic group in Senegal. The Non-Qur’anic group’s lack of a foundational base in decoding and reading in their mother tongue affected how they approached a decoding and a reading comprehension test in French. It was indicated earlier that reading comprehension is not an isolated cognitive process: readers bring their own literacy experiences to what they read. The absence of pre-literacy experiences in decoding skills and reading in their L1 Wolof left the Non-Qur’anic children ill-equipped in approaching the task of reading comprehension in French. Further evidence was provided in comparison to these Non-Qur’anic groups of children. Although the Qur’anic group did not learn how to read in their mother tongue Wolof, their exposure to the Qur’anic reading and recitation could explain why they scored higher in the L2 French reading comprehension test. The Qur’anic group’s exposure to intensive reading of the Qur’anic text coded in the Arabic language would provide them with the necessary tools to approach a reading comprehension test in French.

The alphabetic decoding skills gained in the Arabic language would transfer to the reading comprehension test in French. Although the Qur’anic children may find the French reading comprehension test difficult, they were equipped enough to know that a text was made of words, phrases and sentences. Koda (2005) in his interaction text-reader model found that at the first level of this model (i.e., decoding; text-information building level; situation-model
construction level) readers are required to have word attack skills whereby information is extracted from the text.

The last two models that Koda advocates here can be beyond what children were expected to do in this research; the first level in his model was an important indicator for the Qur’anic group to score higher than the Non-Qur’anic group. The implications for this research showed a sequential linguistic journey shown below in Figure 10 and Figure 11 to further illustrate my research’s central thesis. This linguistic journey began from a phonological awareness where both Qur’anic and Non-Qur’anic groups had begun equally, but as they moved from the decoding skills toward the reading comprehension the gap between these two groups widened. This sequential linguistic journey simply suggests that both groups started from the same point on an equal footing, tapping into their rich phonological awareness and phonological sensitivity in Wolof. And yet the Qur’anic group’s deviation to acquire literacy though the Daara (Qur’anic schooling) changes the dynamic of this linguistic progression from Wolof to French for both Qur’anic and Non-Qur’anic groups. For instance, Figure 10 below shows that the Non-Qur’anic children do not develop literacy skills in their mother tongue, Wolof, prior to learning the French language at school.

**Figure 10** Non-Qur’anic Wolof children's linguistic journey from home to school

<table>
<thead>
<tr>
<th>GAP</th>
<th>Speaking</th>
<th>Wolof L1</th>
<th>Listening</th>
</tr>
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<td></td>
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</table>

<table>
<thead>
<tr>
<th>French L2</th>
<th>Reading</th>
<th>Listening</th>
<th>Speaking</th>
<th>Writing</th>
</tr>
</thead>
</table>
Conversely, Figure 11 below shows a different tendency because the Qur’anic groups of children do not develop any literacy skills in their mother tongue Wolof, but unlike the Non-Qur’anic children, they bridge over to the Qur’anic school before learning the French language. This literacy gap between home literacy and school literacy implies that the Qur’anic group who bridged over this literacy gap by going to the Qur’anic school before learning the French language were more likely to succeed in the task of decoding and reading comprehension tasks in French.

**Figure 11. Qur’anic children’s linguistic journey from home to school**
With our third research question—what levels of reading comprehension do Non-Qur’anic Wolof children achieve in L2 French reading comprehension throughout life or just by the end of their first year school compared to Qur’anic Wolof children at school? —it was found that the Wolof Qur’anic learners who had an informal exposure to the Arabic language through Qur’anic learning significantly outperformed the Wolof Non-Qur’anic learners. This finding supports the hypothesis that first literacy may provide an important underlying structure on which to build second language literacy acquisition (see Cummins’s Developmental Interdependence Hypothesis, 2000; McBride-Chang, 2004; Wagner, 1993). Although there is a substantial difference between the Arabic language and French in terms of orthography, lexicon and syntax, as indicated earlier, research has indicated that children who have any competence in a first literacy will transfer that competency to the learning of a second language (Wagner, 1993). Qur’anic children who were enrolled in informal Qur’anic schooling where children were given the opportunity to learn how to read the alphabet, and how to code and decode the Arabic letters transfer these literacy skills in the process of learning the French language. This tendency aligns with the findings already seen in other studies that established the notion of linguistic transfer of reading skills across languages (Cook, 2002; Ellis, 1994; Odlin, 2005).

In the following sections, we will discuss our fourth research question that we strived to answer from the Questionnaire conducted with children.

6.1.4 Questionnaire with children

The questionnaire was conducted with both Qur’anic and Non-Qur’anic children to seek further information about the different tendencies we observed with these groups of children. In fact, with respect to the four questions we posed to each Qur’anic and Non-Qur’anic child about their literacy experience of reading at home and their literacy experience ofreading with
others, we found huge differences between these two groups. More precisely, with the first two questions posed to each group of children on the first theme of literacy reading at home—(1) how often do you play word or letter games at home? and (2) how often do you use books at home—the Qur’anic children overwhelmingly (60%, N=18) declared always having played word games and using the Qur’anic text at home. This is the opposite finding from what we observed from the Non-Qur’anic children, only 3.3% (N=1) of whom maintained always playing words games or using books at home. These findings were reflected in the decoding and reading comprehension results we obtained from Qur’anic and Non-Qur’anic children. In other words, the Qur’anic children who played word games or used books at home outperformed the Non-Qur’anic children on the tasks of L2 French decoding skills measured through the picture-word identification task and L2 French reading comprehension skills measured through a reading comprehension test in French.

With our fourth question—To what extent does parental intervention to help children decode and read at home affect children’s decoding and reading skills at school?—it was found that parental intervention to help their children decode and read at home has significant positive impact on children. Thus, the Qur’anic children who combined a home literacy (being helped in decoding and reading the Qur’anic text at home) and a preschool literacy (being helped in decoding and reciting the Quran at the Qur’anic school) developed a sense of automaticity and accuracy in decoding and reading that they transferred when presented with decoding and reading tasks in the French language.

This research major finding suggests that the development of early literacy skills at home enhance literacy skills at school. Most importantly, these early literacy skills make those who possess them ready to engage in tasks that require pre-knowledge of the correspondence between
graphemes and phonemes. As indicated earlier in the literature review, a considerable number of studies have conceived homeliteracy as the building block of reading-readiness and decoding skills for children at school (McBride-Chang, 2004; Santonich, 2000).

In that particular respect, what emerged from our own research findings is that, because of the early decoding skills that they brought with them to school, the Qur’anic children were more ready than the Non-Qur’anic children to decode L2 French words. In other words, the Qur’anic children were more accurate and quicker at decoding French words and associating them with their referents shown through pictures. The daily memorization and transcription of the Qur’anic text on tablets benefited the Qur’anic group when they engaged in decoding skills tasks in the French language. This correlation between early exposure to print (i.e., playing letter or word games) and decoding skills is perhaps the most widely discussed topic within the field.

Durkin’s (1966) research of early readers pointed out the many success stories of the blossoming of print awareness in preschool children and later decoding skills (Durkin, 1966 as cited in Adams, 1990). Both parents’ and Qur’anic teachers’ involvement in the processes of decoding the Qur’anic text at school and at home through recitation and rewriting was one of the foundational bases for the success observed in the Qur’anic group involved in this research. Not only did the Qur’anic children outperform the Non-Qur’anic children on the task of decoding skills but they also outperformed them in the task of reading comprehension as well, as we will see later. Although there has been disagreement over whether teaching the meaning should be emphasized in reading text more than simply decoding it, one never forgets that one of the prerequisite for knowing how to read at school largely depends on how well one is able to decode a text.
With the second two questions posed to each group of children on the second theme of literacy experience of reading with others — (3) how often do your siblings or friends read to you? and (4) how often do your parents read to you? —, one can find out why the Qur’anic children significantly outperformed the Non-Qur’anic children in the task of L2 reading comprehension once again. That is, whereas 83% (N=26) of Qur’anic children confirmed having always read the Qur’anic text with their parents at home or with their Qur’anic teachers at the Qur’anic school, the majority of Non-Qur’anic children (67%, N=20) declared that they never read with parents at home. In other words, the Qur’anic children who had literacy experience reading with their parents at home or their Qur’anic teachers at the Qur’anic school significantly outperformed the Non-Qur’anic children who did not have those literacy experience opportunities. This research finding suggests that the development of early L1 reading comprehension skills at home (i.e., knowledge of grapheme-phoneme correspondence) transfers to L2 reading comprehension skills at school. As indicated in my literature review, a number of researchers on the issue of home literacy experience and second language learning have demonstrated that a reading-ready child is someone who has a substantial base of proof-reading skills, a wealth of reading experience and knowledge about the pleasures and functions of texts (Adams, 1990; Clay, 1998; Feitelson & Goldstein, 1986; Goodman et al., 1979; McBride-Chang, 2004; Snow et al., 1998; Stanovich, 2000). In that regard, what we observed with the Qur’anic children in this research was that they brought a wealth of reading experience and decoding skills from the Arabic language. In that respect, Wagner’s (1993) findings with respect to the principle of alphabetic decoding are of great importance for our research findings when it comes to reading comprehension as well. Although Arabic greatly differs from French in terms of form and reading direction, the Qur’anic children nonetheless might have transferred the Arabic
alphabetic decoding principle to the task of L2 French reading comprehension. That is, written language is learnt by understanding the principle of correspondence between graphemes and phonemes (Garton & Pratt, 1989). Therefore, Qur’anic children must have established the correspondence between written words and spoken words in Arabic in order to determine the meaning being conveyed. We believe that the Qur’anic group applied the same reading principle when asked to read a short text in the French language. Thus, being exposed to early reading through the Quran at home or at the Qur’anic school enhanced Qur’anic children’s reading comprehension skills at school as these first literacy skills acquired in Arabic transferred to the acquisition of reading skills in French at school. This finding is consistent with Cummins’ cross-linguistic transfer of L1 reading skills hypothesis (Cummins, 1978, 1983, 1984).

Before we proceed to the general discussions on the qualitative results of the semi-structured interviews conducted with Qur’anic and Non-Qur’anic parents, we will provide a short summary of the general discussions of the quantitative results below.

6.2 Summary of quantitative results discussion

The general discussion of the quantitative results has shown that the Qur’anic children approached the tasks of L2 French decoding and reading skills differently from the Non-Qur’anic children. Because of their early bridging over to the Qur’anic schooling to acquire literacy skills in Arabic, the Qur’anic children were likely to outperform the Non-Qur’anic children in the tasks of L2 French decoding and reading comprehension. In other words, the early decoding and reading skills they acquired in the Arabic language through the Quran might have been transferred when performing decoding and reading tasks in French. As indicated earlier, this finding seems to align with Cummins’ cross-linguistic transfer of reading skills from L1 to L2 (Cummins, 1978, 1983, 1984) and several other studies on the relationship between
mother tongue literacy and second language learning (Clay, 1998; Feitelson & Goldstein, 1986; Goodman et al., 1979; McBride-Chang, 2004; Snow et al., 1998; Stanovich, 2000).

Nevertheless, it was interesting to find out that the Qur’anic group did not outperform the Non-Qur’anic group when it came to the phonological awareness as measured through the odd-one-out task. Coming from oral traditional communities such as the Wolof communities, both the Qur’anic and the Non-Qur’anic children had already developed a strong aural mechanism in Wolof that would allow them to pay more attention to a task that required sensitivity to oral sounds. This sensitivity to sound, known as phonological sensitivity, is what both the Qur’anic and Non-Qur’anic group seem to have internalized during the acquisition of their mother tongue, Wolof. Thus, this phonological sensitivity helped both groups to discriminate sequences of sounds from French words that did not belong to the target set. Will this phonological sensitivity diminish overtime for these groups of Wolof children? That is a question that needs further research in the SLA literature as well.

Although the general research discussions above may have suggested that the development of early literacy skills in decoding and reading comprehension in the Arabic language, along with parental involvement in the learning process, might explain the different tendencies we observed between the Qur’anic children and Non-Qur’anic children, their parents’ overall attitudes toward the French language have also revealed interesting narrative discourses that could not be overlooked in this research to further understand these groups of children. Most significantly, these narratives confirmed the results we collected from the Questionnaire with children. That is, the importance given to the language in which literacy is acquired at home (Arabic) most likely has a considerable impact on the language (French) being
learned at school as we could observe it with our Qur’anic group throughout this research. We do believe that the general attitudes parents had toward the French language could not have been overlooked in our research as they might have been among other factors that could impact children’s overall learning of the French language.

In the following section, we will first discuss the qualitative results reported with respect to the semi-structured interviews on the general attitudes toward the French language with the Qur’anic parents and then we will discuss the Non-Qur’anic parents.

6.3 General discussion on the qualitative results

6.3.1 Semi-structured interviews with parents in Touba and Dakar

6.3.1.1 Parents’ attitude toward the French language in Gaindé Fatma, Touba

As indicated in several cases throughout this research (e.g., religious communities and language cohabitations in Senegal), the negative attitudes toward the French language mostly derived from earlier French colonialists’ battle against their spiritual leader, Cheikh Ahmadou Bamba, who was forced into exile from his homeland to the neighboring countries of Gabon and Guinea. This negative attitude toward French may have caused an overwhelming number of parents (63%) in Touba to send their children to Qur’anic schools prior to learning any other languages. Thus, the negative attitude (90%) Qur’anic parents showed toward the French language was channeled through a stronger desire for helping and enhancing their children’s early literacy skills in the Arabic language that would have benefited their children when they learned the French language at school. This constant focus on reading the Quran to and with children at home, and the daily efforts to carefully and accurately decode the Qur’anic text set the scene for a stimulating and successful academic future in decoding skills and reading comprehension skills for the Qur’anic children from Gaindé Fatma school district in Touba. It
must be noted, however, that this zealous motivation we observed from the Touba parents to first enroll their children in the Qur’anic school is not always linguistically motivated. There is also a strong religious desire associated with a strong moral obligation to break away and cut off themselves from a gloomy past of colonialism in which their supreme leader, Ahmadou Bamba, was one of the targets. The Quran was the one and only “weapon” Bamba used against the French colonialists. More specifically, against burgeoning secular French schools in Saint-Louis, Bamba promoted the Qur’anic schools by encouraging his communities to learn the Quran and the Arabic language.

While following in his footsteps a century later, these Qur’anic parents in Touba not only followed Bamba’s advice and massively sent their children to the Qur’anic schools, but they also paid high regard to the Arabic language for its sacredness as a language in which God communicated with mankind in the seventh century in the Arabic peninsula. Thus, many of them saw the early Qur’anic schooling of their children as a religious duty and spiritual obligation to fulfill toward God. However, beyond the religious duty to fulfill this spiritual obligation, literacy in Arabic through Qur’anic schooling has well served these Qur’anic children who still cannot read and write in their mother tongue, Wolof. It is worth pointing out that beyond the religious dimension that is present in my research, the linguistic element is what has been a matter of concern for me when studying these particular groups of Wolof children in Senegal. Although we do not know to what extent this linguistic knowledge developed in Arabic could compensate for the lack of literacy in Wolof, what was clear here is that pre-literacy skills in the Arabic language enormously facilitated the Qur’anic children’s decoding and reading comprehension in French. It is worth noting as well that the very tiny minority of parents (10%, N=3) from Touba who, after fulfilling their moral obligation to teach their children the Quran
first, would like to send their children to the French school. That is, the learning of the French language could help professionally their children in the future.

In our semi-structured interviews with parents in Touba, we observed that most Qur’anic parents’ overall attitudes toward the French language were negative. However, this is not the cases of most Non-Qur’anic parents we interviewed in Daroukhane B. In the following section, we will discuss the Non-Qur’anic parents’ overall attitudes toward the French language in the context of Daroukhane B elementary school.

6.3.1.2 Parents’ attitude toward the French language in Daroukhane B, Dakar

The negative attitude toward the French language was less noticeable when interviewing parents from the Daroukhane school district population. Unlike Touba, parents interviewed in Dakar at the Daroukhane B school district had a mixed attitude toward the French language. That is, although 46% (N=14) of Non-Qur’anic parents interviewed saw in the French language a language of their former colonial powers, they still considered the French language to be a linguistic instrument allowing them more access to the job market and to the external world (Daroukhane B Semi-structured Interviews, 2012b). Although other reasons were mentioned by Qur’anic parents when asked about their attitudes toward the French language, the most often-cited views toward the French language were mostly grounded in French being a simple instrument for job opportunities and professional success. As reported earlier in our semi-structured qualitative results in chapter 4, the expressions “job opportunities” and “professional” success came out occasionally in the speeches of the Non-Qur’anic parents.

Unlike Bamba’s crusade against the use of the French language in Touba, the spread and love for the French language became a widespread phenomenon after the independence of Senegal. Successive governments have contributed to shaping the positive or negative sentiment
and attitudes toward the French language especially for the population of Dakar. The impacts of Senghor’s post-colonial language policy to continue to elevate the French language to the detriment of other national languages created a generation of young Senegalese who had a high regard for the French language and its status in Senegal.

Part of the relatively positive attitude toward the French language we observed in the Non-Qur’anic parents, although this may not represent the general population of parents in Dakar, may have been the result of Senghor’s language policy to promote the French language to the detriment of the Senegalese national languages. As a result, the majority of Muslim parents interviewed in Dakar still see the lucrative and professional benefit associated with learning and mastering the French language early on. The few parents who still weigh the moral and religious obligation toward God send their children to Qur’anic school on Saturday or Sunday to fulfill that duty. This minimum amount of exposure to the Quran gives no time for children to fully immerse themselves in the Arabic language, and therefore, parents’ reluctance to develop their children’s early pre-literacy skills certainly had negative impacts on the Non-Qur’anic children’s acquisition of the French language in the areas of decoding skills and reading comprehension.

6.4 Summary of quantitative and qualitative results discussion

The general discussions on the quantitative results of this research have shown that there is an intrinsic relationship between phonological awareness, decoding skills and reading comprehension. Although the phonological awareness score showed a different outcome from the research predictions, the results obtained from both decoding and reading comprehension skills were consistent with research predictions. In other words, with respect to phonological awareness, this chapter has shown that there was no significant discrepancy between the Qur’anic and Non-Qur’anic groups as both groups seem to have developed strong phonological
sensitivity in Wolof that each group might have transferred when presented with an L2 French phonological task. In that respect, the first hypothesis, about the possible difference between the Qur’anic and the Non-Qur’anic groups in the phonological awareness score in French, was not supported by the findings. Nevertheless, there was a very significant difference between the Qur’anic group and the Non-Qur’anic group with respect to both decoding skills and reading comprehension skills. That is, the Qur’anic group, who had an exposure to the Quran through Qur’anic schooling, utilized this pre-literacy skill when decoding and reading a French text. Based on these findings, this chapter has clearly demonstrated that pre-literacy skills acquired at home or through Qur’anic school by the Qur’anic children helped them succeed in the L2 French decoding and reading comprehension tasks. Moreover, the general discussions on the qualitative results have further supported the idea that the attitude parents had towards the French language or the Quran partly determined children’s success in decoding and reading comprehension in French at school.

The narrative discourse parents developed with respect to their attitude toward French, although unrepresentative of the general Senegalese views or attitudes toward French, gave a glimpse of the complex nature of the relationship between Wolof, Arabic and French in Senegal. Whereas Non-Qur’anic Wolof children who began the learning journey from Wolof to French showed linguistic deficiency in decoding French words or reading a French text, Qur’anic Wolof children who began their learning journey from Wolof via Arabic to French showed success in decoding and reading a French text. However, to what extent this deviation for the Qur’anic group to learn the Quran prior to learning French could compensate for their lack of literacy in Wolof still remains an area for further research in the future.
Beyond the linguistic element, there are also other several factors (i.e., colonial, socio-professional) that could perhaps explain the different attitudes these Qur’anic and Non-Qur’anic parents have toward the French language. For example, we believe that one of the most important reasons behind the negative attitudes toward the French language we observed particularly with the Qur’anic parents was Bamba’s early struggle with the French during the colonial time. That is, his fight against the colonial establishment and major opposition to the spread of the French language and civilization still remain in the memories of many inhabitants of Touba who have since turned those colonial days into a huge Bamba commemoration day (Magal) that brings millions of disciples to the city of Touba each year. This might partly explain Qur’anic parents’ massively negative attitudes toward the French language (90%) as these attitudes were reflected in the amount of literacy skills these parents exposed their children to through the Quran.

Although we could not overlook the fact that there is a growing negative attitude (54%) towards the French language from the Non-Qur’anic parents, the positive attitudes that the Non-Qur’anic parents (46%) had as well were mostly motivated by socio-professional reasons (i.e., job opportunities), partly because of Senghor’s strong advocacy for the French language. Unlike Bamba, Senghor’s language policy to elevate French to the detriment of other national languages in Senegal has forged stronger sentiments of bonding towards and affiliation with the French language to the detriment of the Senegalese national languages. Despite major efforts from several Senegalese national language advocates (e.g., Cheikh Anta Diop, Abdou Diouf and Abdoulaye Wade) to reposition Wolof at the heart of Senegalese language policy and planning, our interviews with the Non-Qur’anic parents in Dakar still show a sort of language alienation. That is, most Non-Qur’anic parents in Dakar still remain alienated as they view the French
language to be superior to their own national languages because French is the language of job opportunities and businesses. As a Non-Qur’anic parent simply puts it, “I like French because it is a language that opens up a lot of opportunities” (Semi-structured interview, 2012b).

In the following chapter that concludes my research, we will discuss the research’s strengths, limitations and potential applications of my findings.
Chapter 7: Conclusion

In this doctoral research, we investigated the L2 French phonological awareness, decoding and comprehension skills of two groups of sixty L1 Wolof childlearners of L2 French in Senegal. Whereas the first group of thirty children (Qur’anic children) we investigated developed early literacy skills in Arabic but not in their mother tongue Wolof, the second group of thirty children (Non-Qur’anic) developed no literacy skills in Wolof or Arabic. With regard to phonological awareness, it was revealed that early experiences with sound discrimination in Arabic did not affect the L2 French phonological awareness of either group at school. In other words, Qur’anic children, despite their early listening skills in Arabic, showed no significantly higher level of L2 French phonological awareness compared to the Non-Qur’anic group at school. With respect to decoding skills, it was found that early exposure to print at home or through informal Qur’anic schooling (i.e., playing letter or word games, learning the alphabet) enhanced decoding skills at school for the Qur’anic group. The Non-Qur’anic group showed a lower level of decoding skills compared to the Qur’anic group. Likewise, tests regarding reading comprehension found that a lack of reading skills in the mother tongue (Wolof) at home (i.e., book sharing, story-telling, parents reading to children) hindered the acquisition of reading comprehension in L2 French at school for the Non-Qur’anic group. The Non-Qur’anic group showed lower levels of reading comprehension compared to the Qur’anic group who had pre-literacy experience with the Arabic language through the Quran. The questionnaire we conducted with both the Qur’anic children and Non-Qur’anic children further confirmed those results discussed above. That is, the questionnaire results obtained from the Qur’anic group of children showed a correlation between home literacy and success in decoding and reading comprehension at school, which suggested that the Qur’anic children, who mostly used the Qur’anic book and
played word games at home or at the Qur’anic school, significantly outperformed the Non-Qur’anic children in the tasks of L2 French decoding and reading comprehension. Our findings are consistent with what Cummins (1979) earlier found in his Linguistic Developmental Hypothesis that there is a relationship between L1 literacy and L2 second language learning, and that literacy skills acquired in L1 would transfer to L2 learning (Cummins, 1978, 1979).

In the light of these findings, we could perhaps suggest that the absence of literacy in the mother tongue Wolof, unless bridged through Qur’anic schooling, may affect L2 literacy skills precisely in the acquisition of L2 French decoding and reading comprehension. Therefore we suggest that major language changes need to be made in Senegal to address the absence of literacy in the mother tongue Wolof for these children at the elementary school level. For that, Senegal needs to first depart from its colonial language policy to implement a rigorous language education policy grounded in the mother tongue. Throughout the semi-structured interviews with parents, we learnt that beneath the linguistic element, there are more underlying colonial reasons influencing parents to motivate their children to develop early literacy skills in the Arabic language or to go directly to learning French. In contrast with parents we interviewed in Touba, who overwhelmingly (90%) rejected an education based on the French language parents we interviewed in Dakar did not completely reject the French language. We believe that this attitude observed with this particular group of parents in Dakar reveals traces of the colonial language policy in which colonial subjects had a high regard for the prestige of the French language as it remained a major force and an indispensable instrument for economic success and socio-professional integration. Although this colonial language policy itself is beyond the scope of this doctoral research, the decision to carry out this doctoral research was primarily informed by the desire to underscore the shortsightedness (on the part of the former colonial authorities and
current Senegalese political leaders) of making a minority language, French (used by less than 20% of the Senegalese population), the only MOI in schools across Senegal while the majority language, Wolof (used by 80%), is taught as a subject only at university (Diallo, 2010).

Before discussing this research’s major contributions, potential application of findings and suggestions for future research, the next section first reviews conclusions based on the results and discussions presented previously, and then outlines the strengths and limitations of the research.

7.1 Review of conclusions

The research aims were primarily to find out, with sixty L1 Wolof child learners of L2 French, if the absence of literacy in Wolof affects literacy in L2 French, specifically in the areas of phonological awareness, decoding skills and reading comprehension. The research outcomes have demonstrated that the L1 Wolof Qur’anic group, who, primarily, developed early literacy skills in the Arabic language prior to learning French, outperformed the L1 Wolof Non-Qur’anic group in decoding skills and reading comprehension except in the area of phonological awareness. We interpreted the difference in performance between the Qur’anic and Non-Qur’anic groups as a reflection of the effect that the Arabic language may have on the former. More precisely, the use of the Arabic language to learn about the Quran could enhance children’s abilities to process sounds from a language system other than the L1 Wolof. The activities that children needed to complete every day at the Qur’anic school involve close observation of the Arabic grapheme system and corresponding associations between sound patterns and lexical categories. This systematic linguistic processing in Arabic likely made the Qur’anic children aware not just of the existence of a linguistic code that is not Wolof but also the fact that they can perform linguistically in this additional linguistic code. Therefore, at the time of completing the
tasks in my research, the Qur’anic group (more so than the Non-Qur’anic group) reproduced some of the cognitive and linguistic patterns they had already implemented when studying the Quran. That is, they paid a close attention to the sound combinations that made up words.

Conversely, with respect to the phonological awareness skills that were measured through the odd-one-out task in which they were asked to discriminate sequences of sounds from French words that did not belong to the target set, the Qur’anic children did not outperform the Non-Qur’anic children. We interpreted this result in line with what Wagner (1994) has found with people in oral communities whose listening skills are more enhanced than their visual skills. That is, people in most oral communities tend to work the ear more frequently than the eye because the activities they are daily involved in require them to pay close attention to the phonemes more than to the graphemes. Because phonological awareness primarily involves the ability to be sensitive to sounds (phonological sensitivity), the Qur’anic and Non-Qur’anic children had already developed strong sensitivity to sounds that helped them when asked to discriminate sequences of sounds in French without necessarily knowing their corresponding graphemes.

Some of the research findings enumerated above have contributed to making this doctoral research strong. The next section discusses the strengths of these research outcomes in more detail.

7.1.1 Strengths of research outcomes

One of the first major strengths of this research is finding out that the early literacy skills the Qur’anic children acquired in the Arabic language served them well when presented with a decoding and reading comprehension tasks in French. These early skills in Arabic helped them at least temporarily bridge over the literacy gap in their mother tongue Wolof before learning the L2 French. In addition to the daily decoding of the Qur’anic text at home and at the Qur’anic
school, reading and recitation of the Quran with parents at home and with Qur’anic teachers at school clearly helped them more so than the Non-Qur’anic children when reading a text in French.

The second major strength of this research is finding out that there is a correlation between home literacy and success in L2 French decoding and reading comprehension. The Qur’anic children who spent more time using books or playing word games with others at home or at Qur’anic school were more likely to succeed in the tasks of L2 French decoding and reading comprehension. Research has shown that parents who always read to their children help foster an environment of literacy and a reading-ready child who gradually grasps what would be involved in the task of decoding and reading comprehension in general (McBride-Chang, 2004; Snow et al., 1998; Whitehurst & Lonigan, 1998).

The third major strength of this research is finding out that the spoken language that both the Qur’anic and Non-Qur’anic groups developed in the mother tongue, Wolof, helped them when processing sounds from a language system (L2 French) other than the L1 Wolof. Both groups have developed strong listening skills in Wolof, which would perhaps advantage them when asked to segment sound patterns from a set of lexical categories.

In the following section, we will list and discuss some of the limitations of the research.

7.1.2 Limitations

1. The sample of research participants could not represent the overall population of Senegal; therefore, research outcomes could not be generalized.

2. The different socio-linguistic contexts of education between school districts in Dakar and Touba may contribute to shaping views of what education represents for individuals. This research could not demonstrate with certainty if success for the Qur’anic group over the
Non-Qur’anic group was purely linguistic. There were other external factors (i.e., religious views of learning, parents’ level of education, socio-economic status of children and parents) that the research could not address indepth.

3. Most of what we knew about playing word games and reading to children at home was collected from the interviews (questionnaire and Semi-structured interviews) administered to both parents and children. Future research should find other ways to document what parents and children are doing and not what they are saying with respect to reading and playing word games with children at home. Perhaps visiting parents at home for a number of hours during the day and video-taping them when they engaged in daily reading activities with their children at home could have yielded more empirical evidence on the nature of the literacy environment addressed in this research. In fact, as I visited several Qur’anic schools in Touba, we know with certainty that the Qur’anic children engage in transcribing the Qur’anic text with the help of parents at home and teachers at the Qur’anic school. We do not know much about the Non-Qur’anic children and what form of reading activities they engage in with their parents at home. In that respect, future research could document these daily reading activities with these children (Qur’anic and Non-Qur’anic) to find out if there is a strong correlation between home literacy and success at decoding and reading at school. Although based on the questionnaire results we were able to show the tendency of a correlation between home literacy and school literacy among the Qur’anic group, a more physical presence in each child’s home to collect data on daily reading activities would have captured more strongly this correlation. Indeed this will surely require considerable time and attention.
4. There were three open-ended questions in the reading comprehension that were problematic for several participants, even though a few participants were able to answer them correctly. For example, questions 1, 2 and 3 could not have been answered in detail and with accuracy because they required higher order thinking and years of exposure to the French language. That is, these groups of children had only a year of full exposure to the French language; therefore, we assumed that they could not yet carry out a reading task that required them to draw inferences after reading a text. Future research should pay more attention to the nature of open-ended questions when dealing with a certain age group. For instance, we propose that these open-ended questions be used with children who have at least three or four years of exposure to French.

5. The presence of an external researcher with a video camera might have changed the psychological environment of testing and affected participants’ performance on the tasks at hand. This may have affected more the semi-structured interviews in which both parents and children were video-taped. When it comes to parents, it is possible that they gave inaccurate answers to the interviewer to please him or to avoid being seen as indifferent or uncooperative.

Although the limitations outlined above were acknowledged while conducting this research, it is important to recognize that they were not major obstacles in carrying out the research clearly and reaching successfully the objectives sought at the conclusion of the research.

In the following section, we will discuss some of the research’s major contributions and suggestions for research in the future.
7.1.3 Research contributions and potential applications

Until recently (2010) empirical research has never addressed the issue of literacy education in the mother tongue in Senegal. Diallo’s (2010) work on the Politics of National Languages in Postcolonial Senegal is currently the only available empirical study that goes into depth on language education policy and planning in Senegal during and “after” colonialism in 1960. Building on this work, my research went further to investigate the absence of literacy in L1 Wolof and its effects on L2 French phonological awareness, decoding and reading comprehension. In that respect, Qur’anic children who had exposure to Arabic before learning French did better in the L2 French decoding and reading comprehension tasks compared to the Non-Qur’anic children. Based on this finding, the potential applications of this research should subsequently lead to the following actions:

1. Convince Senegalese authorities, linguists, policy makers and planners to follow the model of other African countries (e.g., Nigeria, Zimbabwe) in implementing early literacy education programs in Wolof in all elementary school curricula across all elementary schools in Senegal.

2. Encourage a massive literacy campaign to foster home literacy in the Senegalese national languages, primarily in Wolof, and produce reading materials (e.g., textbooks, short stories, fiction) in Wolof and in other national languages.

3. Make it mandatory for all elementary schools to implement recommendations of the École Nouvelle proposed by the CNREF in 1984 in its attempts to make Wolof the only Medium Of Instruction from preschool to age 9, and introduce French as a school subject later.
4. Create independent agencies to oversee the success of these literacy education programs across Senegal and report on areas where improvements are needed for the rigorous implementation of these programs.

The contribution of this research on the four fronts outlined above may tremendously benefit many school children in Senegal; it can also contribute significantly to the literature, allowing for more research into understanding the complex nature and significance of the relationship between mother tongue literacy and second language learning. It can serve as a blueprint for other hesitant African nations to start harnessing their linguistic potential and developing new language policies that give priority to their national languages in their education systems.

7.1.4 Suggestions for further research

We found out in this research that access to literacy in an additional language or experience with an additional language before French appears to benefit at least two aspects of language learning: (1) the capacity to discriminate sounds from sounds patterns that are linked to lexical items; (2) and comprehension of written texts in French. Other areas such as oral production or written production (productive skills) remained unresearched. In other words, we ignored the effect of early Arabic exposure on the development of speaking and writing in French among the Qur’anic and Non-Qur’anic groups of children we investigated. If it is indeed true that early literacy in Arabic benefits at least some receptive skills in children, one could argue for the need of having a written language presented to children before their enrollment in French lessons. The question that arises then has to do with the possibility that early literacy could be delivered in Wolof (i.e., children’s L1) instead of Arabic or any other foreign languages. Even more so, what effect could this idea have on the educational system as a whole
and in particular among children and parents? Since there is a system of writing form for the Wolof language, it should be made available extensively at the elementary level. Drawing on the evidence from my research, we could hypothesize that children who learn to encode and decode semantic information (oral and written) in Wolof might be better prepared to discriminate and comprehend French. There is the additional cultural component that only the L1 Wolof can convey; thus, literacy in Wolof should be implemented to allow all Senegalese parents to contribute to the development of their children’s literacy skills.

In addition to suggesting further research on speaking and writing with these two groups, my research has also identified two major questions that this thesis was not able to address.

1. To what extent could the absence of literacy in the mother tongue (Wolof) be compensated for by early literacy in a third language (Arabic)?

2. To what extent could further exposure to L2 French bridge the literacy gap between mother tongue literacy and second language learning forever?

With respect to the first question, when comparing the Qur’anic group with the Non-Qur’anic group, this research could not verify to what extent the Qur’anic group’s early literacy development in Arabic could compensate for the lack of literacy in their mother tongue (Wolof) when learning French. We suggest that it is necessary to conduct empirical research to further explore if developing early literacy skills in Arabic through the Quran could compensate for the lack of literacy in Wolof.

With respect to the second question, in comparing the Qur’anic group and the Non-Qur’anic group, this research could not verify either if further exposure to the French language could bridge or narrow the gap between the groups. It then becomes necessary to continue to conduct further empirical research to find out if the Non-Qur’anic group will catch up later with
the Qur’anic group in their third year of exposure to the French language. Because finding the answer to the second question would require longitudinal research following the same groups of children from their first year to their third year, our future academic plan is to continue this research with these groups of children when they have completed their third year of French on June 30, 2015. It would be then interesting to find out if the gap between the Wolof Qur’anic group and the Wolof Non-Qur’anic group would bridge itself forever with further exposure to the French language or continue to widen as the groups continue to learn French.
Louis Faidherbe was born on June 3, 1818 and died on September 29, 1889. He was an architect of and a key player in France’s colonial empires across Africa. Faidherbe served as a governor of French Senegal from 1854 to 1865. He created a lot of buildings, schools and bridges that still bear his name across Senegal. However, he was a fierce defender of France and its civilizing mission. One could argue that thanks to Faidherbe’s unyielding will to apply the plan of French colonization, France was not defeated in Senegal despite harsh hostilities. His idea to expand the mission of the French colonial schools, in part, summarizes the man’s steely dedication to the mission: “the French colonial school create every year among students a nursery of young subjects ready to become the elite of their fellow countrymen, to enlighten them in return and propagate insidiously the first elements of European civilization among the people living in the interior” (Gaucher, 1968, as cited in Diallo, 2010). From every angle you look at the man, Faidherbe was a clever figure who managed to leave his imprint on the annals of Senegal’s colonial history.

Jean Dard was a French instructor during the colonial times; he was the first one in the history of colonial black Africa to open a French school. He is also the author of the first French-Wolof dictionary and a grammar in Wolof because he held the firm belief that education in the French colony must be conducted in the language of the learners. In that regard, Dard argued “people must be able to use the necessary tools (i.e.; own language) in order to reach their full potential, liberate their mind and genius, and transform their environment and their lives according to their needs and interests” (Dard, 1818, as cited in Diallo, 2010). Although his pioneering attempt to
fully use Wolof in elementary schools in Senegal failed, the thought of doing so profoundly laid the foundations for subsequent research and interest in the African languages. Most significantly, in raising awareness on the issues related to educating a child in his or her own mother tongue, Dard’s ideas have contributed in paving the way for using national languages in most-post-independent African states.

ii Cheikh Anta Diop is one of the most influential African scientists and linguists of the twentieth century. He was born in Senegal in December 1923 and died of a heart attack in February 1986. Diop dedicated most of his lifetime to placing African history and civilization at the heart of history. He studied a range of disciplines from mathematics, anthropology, linguistics, hieroglyphs, and nuclear physics to sociology. He actively participated in Senegalese political life and was consequently held in house arrest by the Leopold Sedar Senghor regime (Amaduame, 1989). One of the areas where Diop engaged in major political rivalries with Senghor was the domain of linguistics. Diop published one of his most controversial works in 1954: Nations, Nègres et Culture (Presence Africaine, 1954).

iv Senegalese pre-colonial empires. This period was marked by a widespread presence of kingdoms such as Baol, Cayor and Jolof within Senegal. Before colonialism these kingdoms waged wars against each other to expand their territory and have more control on lands and people.

v Marabout is an Arabic word (murabit) which means monk or hermit (it should not be confused with the name of a white bird, “Marabout”, in the French language). In the early 17th century, the term was widely used among the Moors and Berbers in North Africa (i.e., Mohammedan
hermit or monk) (The Oxford English Dictionary, 1933, p.1510). Over time the word has been
loosely used to designate religious figures that lead a Muslim congregation. In Senegal, the term
Marabout is oftentimes associated with spirituality and holiness. The Marabouts are those holy
religious leaders who serve as spiritual bridges between God and men. They boast of millions of
Talibés who pledge allegiance to them and devote their time and money to the advancement of
their spiritual and temporal causes. Today a large segment of the Senegalese population is very
loyal to these Marabouts and have been known to name their children after them give them
money and provide them with whatever they need. In return, they expect a blessed life crowned
with worldly success and success in the hereafter. Examples of the best known Marabouts in
Senegal were the late Cheikh Ahmadou Mbamba, leader of Muridiya, and Elhadji Malick Sy,
leader of the Tijaninya. Their grandsons are currently assuming the roles of Marabouts.

VI Direct Rule was coined in the early nineteen century by the French colonial authorities to rule
vast French colonial territories across the continent of Africa. This method of ruling consisted of
associating with the indigenous people in the conduct of social, economic and military affairs in
the French colonies. The initial idea was to “frenchify” the African elites, directly assimilating
them into the French language and culture, so they could later become keyplayers in the spread
of French civilization across the world. However, this “politique d’association” has been much
criticized for serving as a pretext upheld by the French colonial authorities to lure the indigenous
African into believing in their grand design of the civilizing mission. This concept of French
Direct Rule, which was ingrained in a policy of association with the colonies, sharply differed
from the British Indirect Rule, which was grounded on the idea of “separate development” for
their African territories. Crowder (1994) provides a thorough account of the nature of these two distinct systems of rules in his classic work on the indirect rule-French and British Style. It must be noted that these two systems of rule dictated many of the subsequent education policies put in place by post-independence African governments. A pertinent example is that, while several French West African states continue to struggle to introduce their indigenous languages in their education programmes, many English-speaking African states have already established education programmes that prioritize their mother tongue. Perhaps this phenomenon is explained by the fact that France’s assimilation policy imposed the French language on all its French colonies, while the British were more open to the use of the African indigenous languages.

Decentralization Law was the result of a vast migration from the rural areas to the urban areas (Dakar) in search of work and better opportunities. This rapid urbanization has led to the Senegalese government engaging in vast decentralization campaigns since March 2004. The Decentralization Law was to transfer competencies to sub-national governments so they could be responsible for planning and management. But most importantly, it anticipated the transfer of responsibilities to help improve efficiency in infrastructure delivery, and promote accountability. Since its enactment in 2004, the application of the decentralization law has faced many challenges including weak institutional capacity, insufficient and under-skilled staff (Barro, 2006). Most significantly a large segment of the rural population continues to migrate toward Dakar to conduct business, and establish commercial links with other foreign companies which are heavily present there. In an effort to reinforce the decentralization law, the newly elected government has extended the monthly presidential cabinet meetings to other regions across
Senegal. This is a new initiative taken by the current president Macky Sall to “decongest” the capital.

African Renaissance: this theory was coined by Cheikh Anta Diop in the early 1950s. In his work Toward the African Renaissance: Essays in culture and Development, Diop (1946) provides a blueprint with clearly spelled-out fundamental and radical changes that need to be made for the “rebirth” and advancement of Africa. Among these changes are the development of national languages (this is the prerequisite for African Renaissance), the development of African science and technology and the restructuring of African economies.

Sunni school is one of the four schools of Islam (Imam Maliki, Imam Hanbali, Imam Shafi‘i and Imam Hanafi). The Sunni branch was formed in 632 BCE, immediately after the death of the prophet Muhammad led to disagreement over who was entitled to become his successor to the caliphate. Ali, the cousin of the prophet and husband of his daughter Fatima, was presumed to be the direct successor of the prophet based on the bloodline. The choice of the Prophet Muhammad’s friend, Abu Bakar, as the first rightly guided caliph (leader) divided the early Muslim congregation into schools. Today the Muslim world is mainly divided between Sunni Muslim and Shia Muslim. Although these two groups do not disagree over the fundamental principle and tenets of Islam, they differ sharply in the way they perform their worship.

Taruq is the plural word for Tariqa, which means a religious order or brotherhood. This term has been also used to designate an itinerary, a path to something.
Daaras: in the context of Senegal, Daaras have been known as Qur’anic schools. In truth, however, the term is a shortcut for the Arabic word Madrassa, which means religious. In these schools, children are exposed to the study of the Arabic language and culture at an early age of about three years old. Additionally, they are taught to memorize the Quran and are required to rewrite all the Qur’anic verses without saying them. The purpose for doing so is to make these children to become “hafis” or scholars of the Quran, but most importantly to be able to teach them to their forthcoming generations. Nevertheless these Daaras oftentimes constitute lucrative enterprises for religious teachers (Serigne) who send their ragged-clothed talibés (Arabic word for students) out in the streets of Dakar to seek alms, food and money. Although one of the main doctrines behind the establishment of these Daaras is to teach discipline and humility to young learners, the methods put in place to reach these objectives are oftentimes inhumane and debilitating. There has been a controversial ongoing debate over whether these Daaras should be simply banned to promote more religious boarding schools.

LIFE: This Literacy Initiative For Empowerment is one of the most important literacy campaigns held in Dakar to improve adult literacy by the year 2015. It set various goals. One of the most important goals was to provide equitable access to basic education to both men and women (Aggio & Ravens, 2005; Haneman, 2008).
**Functional Literacy:** This concept was developed in M'Bow’s 1953 study in Louga, in the northern part of Senegal. It was meant to teach the basic concept of land farming and computer use to young children in the rural areas.

**Wolofal:** The concept derives from the Wolof language; it emphasizes the literary and poetic use of the Wolof language to convey messages in love, friendship and worship. Most importantly this concept has been used by religious leaders whose deep expertise in the Wolof language allows them to express their thoughts in a very poetic manner. For more information on Wolofal, please see Camara and Mitsch on A’jami literature(1997), or Cheikh Ahmadou NDao’s *Cheikh Anta Diop et la literature Wolof modern* (Ndao, 2002).

**The French Revolution** began in 1789 and lasted until 1799. It was a rocky period marked by a series of events that shook the very foundational bases of France’s monarchy, aristocracy and religious authority. Although there has been controversy over what really brought about the French Revolution, many believe that the death of the king, Louis XVI, intensified it. The French monarchy who ruled France for the longest time collapsed, and was replaced by a Republic in 1792 corresponding to the decapitation of King Louis XVI. Out of the French Revolution, were born new ways of thinking, an individual freedom of speech, and a new generation of people endowed with rights, liberty and the pursuit of happiness.

**Reading corners** are learning contexts that provide children with reading opportunities that prepare them for subsequent reading readiness at school. Li and Rao(2000) show that 60 percent
of parents surveyed had in Beijing, Hong Kong, and Singapore had developed “reading corners” at home (Li & Rao, 2000, as cited in Catherine McBride-Chang, 2004,p.50).

Daaras (Qur’anic Reciting Corners) are informal schools in which children are initiated into the Qur’an and the Arabic language. For example, in these Daaras, children first learn the Arabic alphabet and sound system. In that respect, under the supervision of a religious Sheik, children practice massive decoding and encoding using the Arabic alphabet.

Qur’ran is the Muslim holy book divinely inspired to the Prophet Muhammad through the Angel, Gabrielle. The book is composed of verses known as “Ayat” in the Arabic language, and these “Ayat” are made of 114 chapters also referred as “Suras” in the Arabic language. The Muslim communities worldwide abide by the Qur’anic rules and legislations. It used to preach in many Islamic gatherings, it is used to legislate conflict between different parties, and to bless marriages and other social events.

Sheik is a spiritual and religious leader in Islam. He is oftentimes entrusted with the spiritual education of young children, and he is also a well-revered figure in various Muslim communities as he provides them with legal opinions on issues related to Islamic jurisprudence and legislation. He oftentimes names new-born children, and leads Friday prayers, and community-based events.
**Zone of Proximal Development (ZPD)** was developed by the Russian social cognitive theorist and psychologist, Lev Vygotsky, in 1962. The ZPD was replicated in many studies on reading to indicate that children are often capable of better learning at a higher level of engagement when they are learning with capable others compared to when they are alone; parents can support their children in the learning experience.

**Speech perception** is a linguistic task in which children are presented with a yes or no listening comprehension questionnaire, and asked to press one of two buttons to indicate their answer.

**Phonological sensitivity is defined by** Burgess, et al. as “the sensitivity to and the ability to manipulate the sound structure of oral language. It encompasses both phonemic awareness (i.e., the ability to manipulate phonemes) and more rudimentary phonological skills such as rhyme detection” (Burgess et al., 1998).

**Dyslexia** refers to a reading disorder resulting from the brain’s incapacity to recognize and process certain linguistic features or symbols. In the recent years, the term has been loosely used to designate all forms of reading disabilities (Aaron, 1994).

**Hyperlexia** is a syndrome phenomenon in which children display an intense fascination with words and letters. In contrast to children who have dyslexia, hyperlexic children develop a high reading ability to the detriment of the oral skill abilities.
Bibliography


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Appendices

Appendix A  Odd-one-out-task

Instructions

A set of three words are being presented to you. Please read each set orally and detect the odd one out by circling it in each set. Your decisions of odding a word out can be based either on the first sound of the letters or words, middle sound of the letters or words or the final sound of the letters or words. This activity will take about five minutes, so complete the task as quickly as possible.

<table>
<thead>
<tr>
<th>LIVRE</th>
<th>RUE</th>
<th>FEUTRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ÉCOLE</td>
<td>PRIX</td>
<td>ÉLEVE</td>
</tr>
<tr>
<td>MONSIEUR</td>
<td>ENFANT</td>
<td>MONDE</td>
</tr>
</tbody>
</table>

Odd-one-out task, replicated from Bryant et.al (1989)’s oddity task, Fall, 2012
Appendix B  Picture-word identification and association task

Instructions

Listen *carefully* to your examiner as he reads each word orally. Each word corresponds to a picture. When your examiner reads a word, quickly point to or raise the picture that corresponds to the word read. This activity will take about 5 minutes, so complete the task as quickly as possible.

<table>
<thead>
<tr>
<th>Words</th>
<th>Images</th>
<th>Words</th>
<th>Images</th>
<th>Words</th>
<th>Images</th>
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</thead>
<tbody>
<tr>
<td>Table</td>
<td><img src="image-url" alt="Table Image" /></td>
<td>Filles</td>
<td><img src="image-url" alt="Filles Image" /></td>
<td>Cheval</td>
<td><img src="image-url" alt="Cheval Image" /></td>
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<tr>
<td>Garçon</td>
<td><img src="image-url" alt="Garçon Image" /></td>
<td>Banc</td>
<td><img src="image-url" alt="Banc Image" /></td>
<td>Sifflet</td>
<td><img src="image-url" alt="Sifflet Image" /></td>
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<tr>
<td>Chaise</td>
<td><img src="image-url" alt="Chaise Image" /></td>
<td>Règle</td>
<td><img src="image-url" alt="Règle Image" /></td>
<td>Institutrice</td>
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</tbody>
</table>

Picture Source: [www.hurrucutting.com](http://www.hurrucutting.com)

Picture-word-identification & association task, Fall, 2012
Appendix C  Reading comprehension text

Instructions

Lisez silencieusement et attentivement le passage suivant et répondez aux 10 questions qui portent sur le passage.

La fin de l’année scholaire

C’est la fin de l’année, monsieur Sall rassemble les élèves dans sa classe pour ramasser les livres. Il est content, il félicite tout le monde parce que les livres sont propres.

Le lendemain, les enfants balaient la cour de l’école. Ils placent les chaises autour d’une grande table. Monsieur Sall a reçu beaucoup de livres neufs pour les prix. L’école de darou va récompenser ses élèves.

Adapted from *Sidi et Rama* (1990) edited by Moussa Diop et al.

Reading comprehension text, Fall, 2012
Appendix D  Reading comprehension questions

Instructions

Après avoir attentivement lu le passage sur la fin de l’année scolaire, choisissez et encerclez la bonne réponse parmi ces quatre possibilités de réponses données ci-dessous :

1. Monsieur Sall est un
   a. un élève
   b. un instituteur
   c. une institutrice
   d. un lutteur

2. Monsieur Sall est content parce que
   a. c’est la fin de l’année
   b. les élèves ont de bonnes notes
   c. les enfants balaient la cour de l’école
   d. les livres sont propres

3. L’école de darou récompense ses élèves parce que
   a. certains élèves ont bien travaillé
   b. monsieur Sall a reçu de livres neufs
   c. le directeur est content
   d. c’est le début de l’année
4. Les invités arrivent à
   a. 10 heures
   b. 11 heures
   c. 1 heure
   d. 9 heures

5. Les maîtres installent
   a. les livres
   b. les cahiers
   c. les instituteurs
   d. les invités

6. Les prix sont remis par
   a. un parent
   b. Sidi et Rama
   c. les parents
   d. un instituteur

7. Après la cérémonie, le directeur
   a. chante
   b. souhaite aux invités de bonnes vacances
   c. danse avec tout le monde
   d. disperse les invités
8. Selon vous, pourquoi Monsieur s'assemble-t-il ses élèves dans sa classe?

9. Que pensez-vous de cette cérémonie de fin d’année?


Reading Comprehension Questionnaire, Fall, 2012
Appendix E  Children’s questionnaire about literacy experience and reading

Instructions

The following questionnaire has been designed to inquire about your experience with reading. There are five questions and five possible responses. After hearing a question, please choose *ONE* of the five responses that you think best answers the question.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALWAYS</td>
<td>OFTEN</td>
<td>SOMETIMES</td>
<td>SELDOM</td>
<td>NEVER</td>
</tr>
</tbody>
</table>

1. How often do you play word or letter games at home?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
</table>

2. How often do you use books at home?

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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3. How often does someone read to you?

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
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</table>

4. How often do your parents read to you?

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</table>

Semi-structured Interviews with Children, Fall, 2012
Appendix F  Parents’ interview about their overall attitude toward French

Instructions

The following questionnaire has been designed to gather background information from you on your overall attitude toward the French language. The information collected will be used to discuss data at the conclusion of our study. Your information will be a crucial piece in the data analysis. Please be as accurate as possible and answer all questions.

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Comments</th>
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<tbody>
<tr>
<td>1. What language(s) do you use at home?</td>
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<tr>
<td>2. What language(s) do you prefer for instruction for your child at school?</td>
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<tr>
<td>French? Wolof? Arabic?</td>
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<td>3. What is your overall attitude toward French? Positive? Negative?</td>
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<tr>
<td>Please explain and be as detailed as you can.</td>
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</tbody>
</table>

Semi-structured Interviews with Parents, Fall, 2012
Appendix G  Correct and incorrect scale for the picture-word identification task

The range of score is from 0-8 (0 being the lowest score and 8 being the highest score). Students score 1 point for each picture associated correctly with a word read by the examiner. If the student gives an incorrect response by raising or pointing to the wrong picture, he or she will get a 0 as a score. The total score will be calculated by adding the number of correct answers.

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<tr>
<th>STUDENTS</th>
<th>STUDENTS’ RESPONSES</th>
<th>SCORE 0-8</th>
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<tbody>
<tr>
<td></td>
<td>CORRECT RESPONSES=C</td>
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<td>INCORRECT RESPONSES=I</td>
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<td>Word -pic 1</td>
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<tr>
<td>Word-pic1</td>
<td>C     I       C     I</td>
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<tr>
<td>Word-pic2</td>
<td>C     I       C     I</td>
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<tr>
<td>Word-pic3</td>
<td>C     I       C     I</td>
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<tr>
<td>Word-pic4</td>
<td>C     I       C     I</td>
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<td>Word-pic5</td>
<td>C     I       C     I</td>
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<td>Word-pic6</td>
<td>C     I       C     I</td>
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<td>Word-picture7</td>
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<td>Word-picture8</td>
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Appendix H  Correct and incorrect scale for the odd-one-out task

The range of score is from 0-3 (0 being the lowest score and 3 being the highest score). Students score 1 point for each word correctly with a word read by the examiner. If the student gives an incorrect response by pointing to the wrong word, he or she will get a 0 as a score. The total score will be calculated by adding the number of correct answers.

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<td>Word 3</td>
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Appendix I  Parents’ consent form (English version)

Parents’ consent form

Dear parent:

This form is to seek consent from you to allow your child to participate in a doctoral research conducted by Moustapha Fall at the Touba Elementary School. His doctoral research is titled: From home to school: Bridging the literacy gap in L1 Wolof children learners of L2 French in Senegal.

Your child will participate in this study by doing the following tasks:

1. He will be interviewed and videotaped in order to inquire about his experiences with print.

2. He will be asked to do an odd-word-out task in order to measure his early phonological awareness.

3. He will be asked to identify and associate words with pictures to see if he is able to identify concepts from visual images and establish associations with printed words in a short period of time.

4. He will be asked to read a text and answer questions in order to examine his abilities to extract meaning from a story written in French.

______________________________________
Signature                  Date

______________________________________
Printed name

Fall, June 2011-2012
Appendix J  Parents’ consent form (French version)

Formulaire pour le consentement des parents

Cher (e) parent(e):

Ce formulaire a comme but de vous demander la permission de faire participer votre enfant à une étude doctorale menée par Moustapha Fall à l’école élémentaire de Touba. Cette étude s’intitule : From home to school: Bridging the literacy gap in L1 Wolof children learners of L2 French in Senegal

Votre enfant va participer à cette étude en faisant les activités suivantes:

1. Une interview avec questionnaire pour avoir des informations sur ses expériences avec la lecture.

2. Une identification de mots associés à des images pour mesurer son éveil phonologique.

3. Une activité d’intrus pour déterminer son aptitude de déchiffrement (i.e., identifiez les graphèmes et phonèmes).

4. Un test de lecture pour déterminer si il est capable de lire un texte court, le comprendre bien en un temps raisonnable.

_______________  _______________
Signature               Date

______________________
Nom imprimé

Fall, June 2011-1212
Appendix K  Research participants’ assent form

Consent Form

From home to school: Bridging the literacy gap in L1 Wolof children learners of L2 French in Senegal.

Dear participant:

Purpose: This is an invitation to participate in a research study on literacy in a second language (L2) in the absence of literacy in the first language (L1).

More specifically, this research project aims to explore the acquisition of Wolof children’s reading comprehension skills in L2 French in the absence of literacy in their mother tongue, Wolof. As participants in this study, you will be required to complete a pre-reading interview task, a reading comprehension task, a picture-word identification and association task and an odd- word-out task. Findings will be subsequently analyzed for a possible practical application of the most recurrent procedures and strategies to improve the L2 reading comprehension skills of Wolof language learners.

Principal Investigator: The Principal Investigator (PI) is Dr. Samuel Navarro, Assistant Professor in Spanish and Second Language Acquisition in the Department of French, Spanish and Italian at UBC.

Co-Investigator: The co-investigator is Moustapha Fall, Doctoral student in the Department of French, Hispanic & Italian Studies at UBC.

Study Procedures: The study will be carried out only once and will require a maximum of 50 minutes of your time. During the testing session, you will complete the following instruments: (1) An interview questionnaire to learn about your experiences with reading (e.g., books you own, reading with parents or friends at home, talking to people about reading etc.); (2) A picture-word identification and association task (e.g., hearing words and associating them with pictures) to assess whether you are able to use your metalinguistic awareness and strategies while listening to an L2 oral word; (3) The odd-word-out task (Broady & Bryant, 1978) to determine your decoding skills (i.e., identifying the graphemes and phonemes); (4) A reading comprehension task to determine whether you are able to read a short text, understand it well and extract meaning from it within a reasonable timeframe. Please note that the reading comprehension text will take into consideration the cultural context of Senegal.

Fall & Navarro, September 2011
Potential Risks: There are no known or anticipated risks associated with your participation in this study.

Potential Benefits: It is important to mention that little is known about the process of achieving effective reading skills in a second language (French) when no prior literacy is achieved in the mother tongue (Wolof). This research project offers a unique opportunity to explore how well do Wolof children learn to read in a second language when their own mother tongue is unwritten. Your reports in the picture-word identification and association task, odd-word-out task and the reading comprehension task will be organized in a database. Afterward, we will use this information to prepare pedagogical activities to improve the reading comprehension skills of Wolof children learners of L2 French if the need to do so arises.

Confidentiality: A code number will identify all the information you provide. Videotapes will only be seen by the researchers and research assistants. You should also be sure that your name will never appear in any report of the completed study. The data collected will be kept in a locked filing cabinet.

Contact for information about the study: If you have any questions or desire further information with respect to this study, you may contact the Principal Investigator at [contact information] or the co-investigator at [contact information].

Contact for concerns about the rights of research subjects: If you have any concerns about your treatment or rights as a research subject, you may contact the Research Subject Information Line in the UBC Office of Research Services at [contact information] or, if long distance, you can e-mail [contact information].

Parents' consent form: I would like to seek your consent from you to allow your child to participate in a doctoral research conducted by Moustapha Fall at the Touba Elementary School.

Your child will participate in this research by doing the following tasks:

1. S/he will be interviewed and videotaped in order to inquire about his or her experiences with print.

2. S/he will be asked to do an odd-word-out task in order to measure his or her early metalinguistic awareness.

Fall & Navarro, September 2011
3. S/he will be asked to identify and associate words with pictures to see if he or she is able to identify concepts from visual images and establish associations with printed words in a short period of time.

4. S/he will be asked to read a text and answer questions in order to examine his or her abilities to extract meaning from a story written in French.

Your child’s participation is completely voluntary and anonymous. At any time during the study, you have the right to withdraw your child without jeopardizing his or her standing. Moreover, the researchers will remove and eliminate his or her data immediately.

Your signature below indicates that you consent your child to participate and have received a copy of this consent form for your own records.

________________________________________  __________________________
Signature                                      Date

Printed name

In addition, we would also like the opportunity to use some video clips in presentations of the results of this research. As a separate consent, would you be willing to allow us to use video footage of your child in conferences? By signing below you are giving separate consent from above to use your child’s video footage. If you do not consent to the use of the video footage, then his or her video recording will be used for data analysis only and never shared with anyone beyond the researchers and research assistants.

________________________________________  __________________________
Signature                                      Date

Printed name

Fall & Navarro, September 2011
Appendix L  Data collection authorization form from Gaindé Fatma Elementary School

IA: Diourbel
IDEN: Mbock
ECOLE: École Élémentaire Serigne Cheikh
Tel: [redacted]
BP: 03 Touba

Objective: Authorization to collect data

Lassana SARR, acting director at Touba Elementary School authorize Mr. Moustapha Fall born on July 8, 1977 in Touba to conduct his data collection for first and third year students from June 30th to July 31st 2011.

If you request additional information with regard to his data collection, please do not hesitate to contact me.

Touba june 25th 2011

Le Directeur Responsable:

Lassana SARR