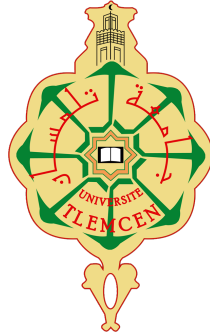


People's Democratic Republic of Algeria Ministry of Higher
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Aboubekr Belkaid University - TLEMCEEN Faculty of Letters and
Languages Department of English

The Linguistic and Cognitive Development of Bilingual Children: A Study on the Algerian Bilingual Children Living in the Netherlands

Dissertation submitted to the Department of English as a partial fulfillment of the
requirements for the degree of 'Master' in Language Studies.

Presented by:

Mrs. Zahera CHAOUI BOUDGHAN

Supervised by:

Dr. Khadidja HAMMOUDI

BOARD OF EXAMINERS

Dr. Fatma KHERBACHE

President

Tlemcen university

Dr. Khadidja HAMMOUDI

Supervisor

Tlemcen university

Dr. Adder

Examiner

Tlemcen university

Academic Year: 2023/2024

DECLARATION

I hereby declare that this dissertation represents my own work, and that it contains neither material previously published or written by another person nor material which has been accepted for the qualification of any other degree or diploma of a university or other institution. I also certify that the current work contains no plagiarism and is the result of my own investigation, except where otherwise stated.

Zahera CHAOUI BOUDGHAN

Date:05/06/2024

Signature

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ALL MISTAKES REMAIN OF COURSE MY OWN

Dedication

To my dearest mother

To my beloved husband

To my beautiful sisters and best friend

To all my family and relatives

And to all my dear teachers

Abstract

The present research investigated the cognitive development in bilingual Algerian children living in the Netherlands. It also established how these particular children used their languages in a multicultural setting. This research also sought to determine how these children learned and acquired different languages in addition to the cognitive and social impact of bilingualism. Data collection in this research was done through a non-participant observation and note-taking and also with the aid of a questionnaire provided to these children's parents. These methods gave an in-depth view of the language behavior of these children both in their homes and outside public areas and also of the parents' attitude towards bilingualism. In general, according to the findings that has been reached through this research, most of the children used AA with French borrowings at home, but changed to Dutch outside. Dutch was most dominant, while Arabic was the main language of more than half of the sample. Parents gave a big value to speaking both languages by their kids for cognitive, cultural, and future purposes but encountered some challenges and difficulties, such as how to balance exposure to the languages and how to maintain Arabic. The conclusion obtained by this study is that bilingualism had a positive impact on cognitive development and social integration.

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List of Acronyms

AA: Algerian Arabic

CM: Code Mixing

CS: Code Switching

MSA: Modern Standard Arabic

Table of Arabic Phonetic Symbols

Arabic Letters	Transcription (IPA)
ء	[ʔ]
ب	[b]
ت	[t]
ث	[θ]
ج	[dʒ]
ح	[h]
خ	[x]
د	[d]
ذ	[ð]
ر	[r]
ز	[z]
س	[s]
ش	[ʃ]
ص	[sʰ]
ض	[dʒʰ]
ط	[tʰ]
ظ	[ðʰ]
ع	[ʕ]
غ	[ɣ]
ف	[f]
ق	[q]
ك	[k]
ل	[l]
م	[m]
ن	[n]
هـ	[h]
و	[w]
ي	[j]

General Introduction

General Introduction

The language acquisition and the cognitive skills in the early first years of childhood is a crucial part of the critical phase of development that determines how an individual is going to relate to the world around them. This development becomes even more complex and enhanced when located in bilingual environments. Accordingly, the linguistic and cognitive development of children brought up in bilingual settings is a rich field to be studied, teeming with complexities and nuances. This dissertation is concerned with the phenomenon of diverse linguistic environments with different cultural backgrounds. The study of how Algerian bilingual children living in the Netherlands develop language and cognitive skills within a bilingual environment has implications for the acquisition of languages. This is an important research since it goes beyond the narrow language acquisition aspects to highlight the broader cognitive implications of growing up as a bilingual.

This sample is therefore a matter of interest because it represents a special mixture of the influence of languages, with the potentials for flows from Arabic, Berber, Dutch, English, and most often French languages in their interactions. It is important to understand how these children master their bilingual environment and develop language proficiency, processing their multilingual experiences cognitively. Thus, this paper is meant to determine the specific linguistic and cognitive developmental pathways for such children. This is motivated, in essence, by the fact that there is a wide information gap regarding the specific experiences of the Algerian people living in the Netherlands, who are relatively understudied.

This research will therefore be useful for linguistic studies. Theoretically, it is anticipated that the study will make very significant contributions to the theoretical body of knowledge in bilingual language development and cognitive processing. Besides, such insights gained can inform educators, parents, and policymakers about the unique needs and potentials of bilingual Algerian children. This then can facilitate

more effective educational strategies with support systems that will allow them to reach their full potential.

The main goal of the research is to study the linguistic and cognitive development of bilingual Algerian children in the Netherlands and to identify the most important variables determining their language acquisition and cognitive skills. Specifically, the present paper tries to explore whether their exposure to two or more languages substantially impacts their linguistic competencies, cognitive abilities, and academic achievement.

The speech of these children has been closely observed, and several questions have been raised :

1. How do the bilingual Algerian children in the Netherlands acquire and use their languages?
2. What are the cognitive implications of bilingualism in this particular sample?
3. How is the bilingual environment influencing the academic and social integration of these children?

Throughout the present research work, an attempt to answer each of these three questions shall be made with consideration to the following hypotheses:

- Bilingual Algerian children use and acquire language in a unique way which is influenced by their multicultural environment.
- The implication of bilingualism may hold different patterns of cognitive development in executive functions in the case of these children.
- The bilingual environment influences their academic and social integration.

To examine these hypotheses, a number of research tools was employed and that include a non-participant observation, note-taking, and a questionnaire that is administered to the parents of the children under study. The data collected were

analyzed both qualitatively and quantitatively to give a vivid understanding of the linguistic and cognitive development in these children.

Accordingly, the dissertation is divided into two major chapters, which serve different purposes in the research. In the first chapter, some general theoretical backgrounds are introduced with the cognitive development in bilingual children. It discusses some of the leading theories and empirical research regarding these practices to elucidate the influence of bilingualism on a child's cognitive processes with special attention to Algerian children living in the Netherlands. This chapter is also dedicated to the linguistic landscape of Algeria as well as the one of the Netherlands, investigating their diversity and dynamics. Only by understanding this sociolinguistic context can the bilingual experiences of Algerian children abroad be placed into appropriate perspective and provide a background for what eventually shapes their cognitive development.

The second chapter presents the methodology applied, including procedures for data collection, analysis, and interpretation. Empirical data were comprehensively gained through an appropriate methodology to investigate the cognitive development of Algerian bilingual children raised in the Netherlands. This chapter presents an overview of the methodology employed: the selection of the participants, the methods used to collect the data, and the tools for the analysis, which allowed for examining the mental processes within bilingualism. The results of the study are then presented in detail in the ensuing sections, accompanied by a thorough analysis and interpretation. It will contribute to the literature available on bilingualism and cognitive psychology by attempting to explain intricate details of cognitive development in Algerian bilingual children.

CHAPTER ONE:

Theoretical Framework and Algerian Linguistic Situation

1.1 Introduction

1.2 Definition of Bilingualism

1.3 Types of Bilingualism

1.3.1 Coordinate vs. Compound bilingualism

1.3.2 Early vs. Late bilingualism

1.3.3 Passive vs. Active bilingualism

1.3.4 Subtractive vs. Additive bilingualism

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1.4 Outcomes of Bilingualism

1.4.1 Code switching

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1.5 Cognitive Development

1.5.1 Psycholinguistic studies of bilingualism

1.6 Theoretical Perspectives on Bilingual Cognitive Development

1.6.1 Cognitive advantages and disadvantages of bilingualism

1.7 Linguistic Diversity and Dynamics in Algeria

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1.7.2 Major languages spoken in Algeria

1.7.3 Sociolinguistic factors influencing language use and maintenance

1.8 Linguistic diversity and Dynamic in the Netherlands

1.8.1 Bilingualism in the Netherlands

1.8.2 Challenges and opportunities for language maintenance and development of Algerian Children in the Netherlands

1.9 Conclusion

1.1 Introduction

The phenomenon of fluent speaking and understanding of two languages named bilingualism has gained increased attention in developmental psychology and linguistics. To state it in another way, it provides one of the most exciting lenses that could be used with regard to the intricacies of cognitive development in a child. This chapter tries to cover all the complex relationships linking bilingualism with cognitive development, together with its theoretical framework and both the Algerian linguistic situation and the Dutch one, with children from Algeria living in the Netherlands.

Such investigation into bilingualism and cognitive development involves complicated theoretical frameworks, rich empirical studies, and practical implications that give insight into the complex interplay between language, culture, and cognition. This exploration puts forward a contribution to the rapidly expanding investigation in this field with a case study of Algerian children in the Netherlands, specifying how such experiences and developmental ways that individual bilinguals can take throughout sociolinguistic contexts.

1.2 Definition of Bilingualism

The complexity and centrality of bilingualism to understanding language variation and change have resulted in its being looked at by scholars in many ways. Inevitably, definitions of the term bilingualism are many and range greatly depending on the approach. Indeed, Baetens Beardsmore went to the extent of claiming that "Bilingualism as a term, has open-ended semantics" demonstrating the catch-all nature of the concept.

Traditionally, bilingualism is referred to as the ability to master two languages. Even so, linguists' definition of bilingualism has diverged and consensus has not been reached since the study begun in the 20th century. Scholars such as Bloomfield and Grosjean indicate that bilingualism is referred to the fluency in two languages.

Bloomfield (1935:56) suggests that a bilingual person possesses "native-like control of two languages," implying not only mastery but also usage similar to that of a native speaker.

In this respect Grosjean (2008:10-11) states: The "real" bilingual has long been seen as the one who is equally and fully fluent in two languages. He or she is the "ideal", the "true", the "balanced", the "perfect" bilingual. All the other (in fact, the vast majority of people who use two languages in their everyday life) are "not really" bilingual or are "special types" of bilinguals; hence the numerous qualifiers found in the literature: "dominant", "unbalanced", "semilingual", "alingual", etc.

However, certain sociolinguists deviate from this definition and disclaim the notion of native-like control as one of the criteria to define bilingualism. They believe that bilingualism could be defined by having only minimal competence in at least one of the four language skills: listening comprehension, speaking, reading, or writing, besides the native language. For example, Myers-Scotton writes, " 'Being bilingual' doesn't mean native-like ability in two languages," and a bit later she says, "speakers are rarely equally fluent in two languages." Could-mean that, even if speakers attain equal mastery in both languages, still, one is likely to prefer one over the other for use. Additionally, linguists like Mohanty (1994a) focus on individual-level evaluation of bilingual competence within specific communities and contexts. Mohanty (ibid: 13) claims that: [...] bilingual person or communities are those with an ability to meet the communicative demands of the self and society in their normal functioning in two or more languages in their interaction with the other speakers of any or all of these languages.

In short, a quick definition would be that bilingualism involves proficient communication in two languages. Bilinguals vary in their fluent use of a second language, from balanced bilingualism, where both languages are equal, to dominant bilingualism, where one language comes into play more than the other. The linguistic phenomenon even surpasses this dynamic and changing process brought about

socio-culturally by the systems of exposure to the language and by individual experiences

1.3 Types of bilingualism

The psychological dimensions of bilinguality indicate complex cognitive, affective, and social relations associated with the bilingual experience. First; Cognitively, bilinguality entails management and switching between two mental languages, conceptualising skills that shape abilities in cognitive flexibility and executive functioning. On the dimension of affect, there are personal emotional responses and attitudes toward the languages spoken, these are shaped by individual experiences and cultural associations. Second; Socially, bilinguality affects identity and social relations in terms of various cultural contexts of social contacts and communication norms. The given dimensions prove all variables of bilinguality, which reflect its influence on mental development, emotional comfort, and social integration.

Table 1.1 Summary table of psychological dimensions of bilinguality(Adapted from Hamers & Blanc, 1983:26)

Dimension	Types of Bilingualism
1. according to competence in both Languages	(a) balanced bilinguality (b) dominant bilinguality
2. according to cognitive Organization	(a) compound bilinguality (b) coordinate bilinguality
3. according to age of acquisition	(a) childhood bilinguality i. simultaneous ii. Consecutive (b) adolescent bilinguality (c) adult bilinguality
4. according to presence of L2 community in environment	(a) endogenous bilinguality (b) exogenous bilinguality
5. according to the relative status of the two languages	(a) additive bilinguality (b) subtractive bilinguality
6. according to group membership and cultural identity	(a) bicultural bilinguality (b) L1 monocultural bilinguality (c) L2 acculturated bilinguality (d) deculturated bilinguality

Bilingualism is a phenomenon with multi faces that manifests in various forms, reflecting the diverse linguistic experiences and contexts of individuals. There are different types of bilingualism, hence, a brief explanation of each is provided below.

1.3.1 Coordinate vs. Compound Bilingualism

Coordinate bilingualism refers to the coexistence of two independent and separated language systems in an individual. In the course of learning, there are usually different surroundings for each language, for instance, one at home and another in school. Compound bilingualism refers to the state where the two languages involved are interdependents. One of the languages, often the first one, acts as the base or the primary language while the other acts as a secondary system. According to Weinreich, in 1953, while coordinate bilingualism gives place to separate language compartments, compound bilingualism is linguistically interdependent, which eventually leads to code-switching.

1.3.2 Early vs. Late Bilingualism:

Early bilingualism is the situation in which a child learns two languages right from birth or very early in his or her life, typically because he or she exposes him- or herself to both languages in his or her home environment. On the other hand, late bilingualism refers to the situation where a person learns a second language late in his or her life, usually through classroom instructions or immersion programs. Grosjean explains in his research in 2010 that the former results in higher language proficiency and cognitive benefits than the latter.

1.3.3 Passive vs. Active Bilingualism:

Passive bilingualism occurs when someone understands and comprehends two languages but has little speaking or writing ability in one or both languages. Active bilingualism would involve being able to speak and write both languages. As Baker 2006 indicated, probably a fairly typical characteristic of many people exposed to a second language but with little or no chance of active use is passive bilingualism.

1.3.4 Subtractive vs. Additive Bilingualism:

Subtractive bilingualism refers to a situation whereby a person acquires a second language, which leads to corresponding deterioration in proficiency in the native language. On the other hand, additive bilingualism refers essentially to the process whereby the second language is acquired without waste in the mother tongue. According to Cummins, 1979, additive bilingualism benefits from cognitive and academic abilities, while on the other hand, subtractive bilingualism produces language loss, and problems of identity.

1.3.5 Balanced vs. Unbalanced Bilingualism:

Balanced bilinguals are those who perform equally well in both languages and who can operate linguistic features of one language just as well as in the other language, making them efficient in both languages. However, unbalanced bilingualism means that a speaker, in most instances, will prefer one language over the other. According to research done by Genesee et al. (2004), cognitive advantages are noticed in balanced bilingualism, while in unbalanced bilingualism there is usually a problem in the maintenance of the language and identity.

1.3.6 Equilingual vs. Subordinate Bilingualism:

Equilingual bilinguals involve those that have equal absolute proficiency and use of two languages, hence freely switching languages. On the other, subordinate bilingualism is when one language is subordinate to the other either in proficiency or usability. According to Edwards, 2014, equilingual bilingualism enhances cognitive flexibility, cultural identity, and subordinate bilingualism that may lead to hierarchy of language and thus power dynamics.

1.4 Outcomes of bilingualism

Bilingualism emerges as a significant sociolinguistic consequence of language contact. It has multiple outcomes which are represented in code switching, code mixing, and borrowing.

1.4.1 Code-switching

Different scholars have cited different explanations for what is termed code-switching, which is a fascinating outcome of bilingualism where speakers shift from one language or language variety to another effortlessly. It is an interesting phenomenon that has attracted in-depth research on the issue from many disciplines. Sociolinguists define code-switching as the use of two or more languages or codes in the same conversation.

However, on the exact definition of code-switching, there is a surprising division between linguists and sociolinguists, to which one researcher offers unique insight. For example, Poplack defines code-switching as “the alternation of two languages within a single discourse, sentence, or constituent, which, in balanced bilinguals, is governed by both extralinguistic and linguistic factors” (1980 : 224). Gumperz, another very influential sociolinguist, defines code-switching as "the juxtaposition, within the same speech, of speech passages belonging to two different grammatical systems or subsystems", drawing attention to the fact that change takes place not only between different languages, but also between different languages. between dialects of the same language.

Similarly, Myers Scotton (1993:VII) uses code-switching as a cover term, which she defines as "alternations of linguistic varieties within the same conversation." She holds the view that "...all code choices can ultimately be explained in terms of such speaker motivations" (ibid: 113). Milroy and Muysken define code-switching as "the alternative use by bilinguals of two or more languages in the same conversation" in 1995:07; it means one can switch from a language to another either between different speakers' turns or within a speaker's turn. However, they mention that code-switching is just part of bilingual behavior.

Hudson (1996:52) states that "The switches between languages always coincide with changes from one external situation to another." He clarifies that bilingual speakers choose their language according to the situation, primarily based on which language the listener will comprehend. Romaine (1995:121) refers to it in more general terms as being 'code' representing not only two separate languages but also

varieties and styles within a language. Thus, it can include all sorts of situations in which bilingual individuals use more than one language or language variety other than their mother tongue.

In other words, code-switching is described as the act of switching between two or more languages or dialects in conversation or speech. This occurs very frequently in the speech of bilingual speakers but also in that of multilingual speakers, when they move from one linguistic variety to another in their linguistic repertoire. Code-switching serves several communicative functions that identify a person with a particular social group and deliver subtle meanings.

1.4.1.1 Types of code-switching

Various forms of code-switching exist, each distinguished by specific characteristics, and scholars employ diverse terminology to delineate these variations. According to Poplack (1980) and Romaine (1995), these types encompass tag-switching, inter-sentential, and intra-sentential switching.

1.4.1.1.1 Tag-switching

Also known as label switching, it is the switch from one language to the other in phrases, words, or both in discourse. This kind of code-switching goes beyond being tags like discourse markers "well," "right," or "so"; those interjections like "ah," "oops," "oh";

According to Poplack 1980, p. 605

Tag switching involves the interjections, fillers, tags, and idiomatic expressions, all of which can be produced in L2 and require only minimal knowledge of the grammar of that language. Consequently, this type, when produced, will not break the grammar rule of the language L2.

1.4.1.1.2 Inter-sentential Switching

In this case, inter-sentence switching occurs when a speaker moves from one language to another at the sentence, phrase, or clause level, whether at the beginning or at the end. We sometimes speak of the phenomenon of “mechanical switching”, which tends to occur very strongly in an unconscious manner. According to Poplack, 1980, intertextual code switching requires greater mastery of both languages used compared to tag switching. Additionally, Jendra (2010, p. 76) argues that inter-sentence code-switching involves the placement of a complete sentence in a foreign language between two sentences in the base language.

1.4.1.1.3 Intra-sentential Switching

Intra-sentential switching, also referred to as code-changing, occurs within the confines of a single sentence or sentence fragment. Myers, 1997, p. 04 explains that "Intra-sentential switches are tightly integrated into the structure of the sentence and are not preceded or followed by any pause or hesitation". Since this form of code-switching takes place in the middle of a sentence, it is more syntactically risky due to the lack of indicators of transition. High-fluency bilinguals will not violate the grammatical constraints of either language in the course of intra-sentential code-switching.

1.4.1.2 Patterns of code switching

According to Blom and Gumperz, there are two models of code-switching: situational CS and metaphorical CS. Situational code-switching refers to speakers changing their language use depending on the context or situation a particular speaker finds themselves in. This model means that there is one language used in one context and another in one other context. According to Hudson, 1996: 52, “changes in language always coincide with changes from one external situation to another.” Following this argument, situational CS includes both topic and conversation parameter changes.

Metaphorical code-switching refers to the strategic use of two languages in a social context through participants' choices to switch at certain points in a conversation. According to Hudson, "it is the choice of language that determines the situation" (1996: 23). Metaphorical CS highlights points or attracts attention to the extent that speakers change language in an effort to create communicative effects.

Moreover, Gumperz (1982) explains metaphorical CS and comes up with conversational CS. Conversational CS comprises a lot of features which involve, among others, quotations, addressee specification, interjections, reiteration, message qualification, and personalization versus objectivization according to Gumperz, 1982:75-84, cited in Yleyinen, 2004:17. Conversational CS is different from situational CS because it is not triggered by any kind of contextual or situational change; to the contrary, it is quick and resonates with certain goals of communication.

1.4.2 Code mixing

One of the most common linguistic phenomena in multilingual communities is code mixing, which has attracted the attention of scholars arguing and struggling to understand its nature, mechanisms, and implications.

The complexity of this linguistic phenomenon may explain why different scholars interpret what CM is. According to Muysken, code mixing simply refers to the "juxtaposition of elements from different languages within a single utterance or discourse." Emphasis would be on the fluid or hybrid characteristic apparent in code mixing since speakers combine elements from various language systems in what appears to be a fluid manner.

They approach CM from different theoretical frameworks, helping thereby to bring out dimensions of the cognitive, sociolinguistic, and structural of CM. Myers-Scotton proposes the Matrix Language Frame model, according to which code mixing takes place within a grammatical dominant framework called the matrix language, within which elements from other languages are inserted as "embedded"

language islands. Dominance and proficiency in language use define this model of code mixing.

There are diverse structural patterns of CM, which reflect individual bilinguals' linguistic repertoires and communicative goals. According to Poplack, there exist three main types of CM : insertion, alternation, and congruent lexicalization. Insertion is a process whereby isolated words or phrases from one language are incorporated into another. In alternation, switching takes place at morphosyntactic boundaries. Congruent lexicalization involves the creation of hybrid lexical items from elements of several languages.

This means that code mixing is not only a linguistic phenomenon but also has pronounced sociolinguistic functions as a marker of identity, social affiliation and communicative competence. Auer explains the social motivations of CM in the context of stakeholders' negotiations on issues of identity and solidarity in multilingual communities. It emphasizes how social norms and interactional dynamics define the context for code-mixing practices.

For instance, from the cognitive perspective, code mixing refers to a real linguistic processing and control structure for a bilingual speaker. According to Green, the cognitive process underlying CM theorizes that bilingual speakers resort to picking a language and inhibiting another to alternate between language systems. It is this flexibility in cognition that could explain how bilinguals can move between languages with such apparent ease, guided all the while by communicative need and contextual cue.

1.4.3 Borrowing

The views of scholars on borrowing differ as well, this proves the complexity of this linguistic process. Thomason and Kaufman define it as "incorporation of various words or expressions from one language into another, typically along with phonological and morphological and semantic adaptation to structure of the borrowing

language." One can see how this definition demonstrates an active relevance of linguistic exchange and enrichment that is brought into repertoires of languages.

The structure of borrowing is quite diverse and depends on the linguistic interactions and situations of language contact between communities. Matras differentiates between different types of borrowing, like loanwords, loan translations, and calques. The loanwords at one extreme, are words that directly taken from one language to another; at another extreme, there is a process known as "loan translation," which means that the expression in a foreign language is literally translated into the native equivalent. Calques involve the literal translation of foreign phrases or idioms into the structure of the borrowing language.

That is not only a matter of linguistics, but it is a fact with important sociolinguistic implications: the mark for contact, prestige, and identity. Mufwene (2008) investigates the sociolinguistic motivations behind borrowing and locates the motivation in its playing the role of an indicator of social affiliation and group identities. In that sense, according to him, it is indicative of power dynamics and social hierarchies within multilingual communities, evidencing the subtle playing of linguistics with social factors.

1.5 Cognitive Development

Cognitive development is referred to how a person comes to think, learn, reason, and understand his surroundings, and it also describes the growth of his intellectual capabilities; for example, memory, art of problem-solving and logical thinking, learning language, and appreciation of complicated ideas and concepts. Cognitive development refers to qualitative changes in how children perceive, relate to, and make sense of their environment as they progress from one stage of growth to the other. According to Jean Piaget, cognitive development refers to clear distinctions in thinking patterns at every stage of growth. These modes of thinking with which individuals understand develop distinctively from one particular stage of growth to the other, from concrete to abstract thinking. Lev Vygotsky placed

greater emphasis on the role of social interactions and cultural contexts in which children's cognitive development occurred, arguing that learning was essentially a social process mediated by the use of language communication. According to such contemporary theories as the information processing approach, mechanisms of cognitive processes are emphasized, and development seems to be working with a computer: the mind receives, stores, and retrieves information whenever necessary. But from these differing perspectives, it will soon become easy to appreciate just how dynamic and multi-faceted the nature of cognitive development might turn out causes having their roots in both innate factors and influences from the environment.

The cognitive development of a bilingual child has a wide implications for educational, psychological, and linguistic research. First, bilingualism uniquely permits examining plasticity and flexibility in the human mind in regard to linguistic diversity. In that respect, by investigating how a bilingual moves from one system to the other, one gets insight into the neural base underpinning cognitive flexibility, executive functions, and metalinguistic awareness. This involves better awareness of the cognitive advantages of bilingualism, enhanced problem-solving and metacognitive skills that can provide a more informed basis for educational pedagogies and language policies in order to further promote linguistic diversity and guarantee inclusiveness in multicultural societies.

Young children are inclined to mimic the words they hear frequently, yet the context holds equal importance. Prior to adopting commonplace terms like "the" or "and," infants prioritize words that are emphasized by their caregivers, those that describe their surroundings, and subjects that align with their personal interests. Cultural factors also exert influence: in certain regions, a child's initial vocabulary leans towards more verbs, while in others, terms relating to familial relationships take precedence. In the United States, where identifying and naming objects is a typical part of infantile play, babies tend to grasp words such as "dog," "cat," "duck," and "kitty" more readily. Nevertheless, broad cross-cultural studies have uncovered a

handful of universal words, including "mommy," "daddy," "hello," "bye," "uh-oh," and "woof-woof."

Metacognition is an important phase of cognitive development. It is also known as "thinking about thinking," involves being conscious of one's own cognitive processes. Fogarty and Pete give a very relatable example: "imagine reading the end of a page and having the sudden feeling, 'There's uncertainty about what was just read.' The response to that awareness might be to read the last sentence again or to go back to several paragraphs before to read in order to 'catch up.' That fleeting sense of comprehension, or metacognition, is important.

When people talk to themselves about how they think, reflecting on how they learn or solve problems, the concept of metacognition is in use. It is the skill that refines thinking, decision-making, and problem solving. Research has demonstrated that, as children mature metacognitive capacities, their school performance is enhanced.

Fogarty and Pete identified three main features of metacognition that children should possess: plan, monitor, and evaluate. They believe that teaching metacognition per se is not as effective as infusing metacognitive development into approaches to teaching. It aims at persuading pupils to engage themselves in questioning their own metacognitive strategies in such a way that it becomes quite spontaneous and instinctive.

Metacognitive skills underlie more general self-awareness, including psychological insight into oneself and the world around. This helps the child obtaining more insight into himself or herself and the environment.

Exposure to talk, language, and different stories from a very early age is highly productive. But suggesting that all that a child knows is determined in her first 3 years goes much too far against what is now known about the brain and its plasticity. The early years are important, but the seeds of neither amazing gifts nor negative traits are set for life.

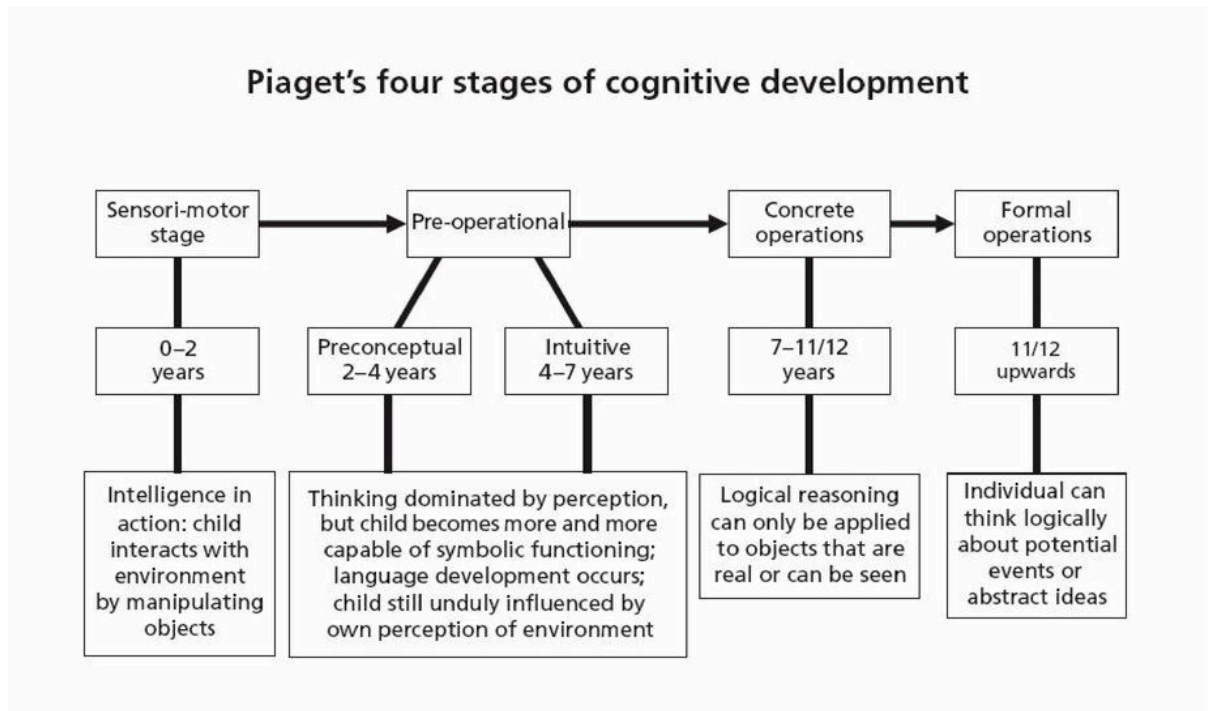


Figure 1.1. Piaget's four stages of cognitive development adapted from Cohan (2002, p37)

1.5.1 Psycholinguistic studies of bilingualism

Psycholinguistic research of bilingualism mainly focuses on the study of relationships between both linguistic systems in a bilingual, structural and processing mechanisms inside them, their neural representation, and relationships with psychological phenomena and more general cognitive processes. Some of the important questions in this area of research is related to how bilingual persons store memory and the language one uses to store it, the ease with which children below a certain age grasp and acquire languages as compared to adults, whether there is any differences between the intelligence of bilingual and monolingual persons and information processing methods adopted by these two sets of people, and how their cognitive abilities are different.

Myers-Scotton has delineated five major themes encompassing the issues addressed in psycholinguistics of bilingualism:

- 1) **The type of the bilingual lexicon**, distinguishing between whether bilinguals maintain separate lexicons for each language or possess a common lexicon for both.
- 2) **The levels of activation**, i.e., examining the simultaneous activation of both languages and their mutual influence during communication.
- 3) **‘Comprehension tasks’ and ‘production tasks’**, which are referred to as word recognition and lexical access tasks, which entail investigating bilingual language production and perception patterns through comprehension and production tasks like translation and word naming.
- 4) **Studies of memories of events**, that is the exploration of memory formation regarding events and the correlation between the language of event occurrence and the language predominant.
- 5) **Bilingual aphasia**, i.e., loss or trouble getting access to one or the other language, telling one about brain areas involved in language processing.

Moreover, psycholinguistics study additional issues that pertain to language learners, specifically bilinguals and their age of acquisition, which further distinguish between early and late bilingualism. It will show whether there is a real difference in language learning ease among people from different ages.

1.6 Theoretical Perspectives on Bilingual Cognitive Development

This is presented in a study that analyzes how bilingualism affects these cognitive processes in people who can speak more than one language, i.e, those who are bilinguals. One of the main questions posed by the researchers in this field is whether bilingualism has positive or negative effects on cognition as compared to monolingualism. Supporters of the Bilingual Advantage Hypothesis claim that the constant need to control and switch between two languages boosts cognitive control processes, such as attention, inhibition, and cognitive flexibility. The hypothesis states that the participants of the bilingual groups are the ones that bilinguals perform better

than monolinguals in executive function tasks because they are used to managing the two languages.

Overall, the theoretical concept of bilingualism cognitive development is closely tied to bilingual cognitive functioning, hence, the study of this topic has provided the researchers with the knowledge of cognitive benefits and drawbacks that people speaking more than one language face. By clarifying the mechanisms and processes that are the base of bilingual cognitive development, researchers seek to contribute to the knowledge of the cognitive consequences of bilingualism and to the improvement of bilingual education and language policies in the context of multicultural societies.

Numerous theoretical frameworks have been put forward to clarify the cognitive mechanisms that lie behind bilingual cognitive development. One of the most popular theories is the Bilingual Advantage Hypothesis, which claims that the constant demand to manage and switch between two languages causes cognitive improvements in bilingual people (Bialystok, 2015). As per this hypothesis, bilingualism is a kind of cognitive exercise, which reinforces the neural networks that are involved in executive function and cognitive control.

In contrast, the Weaker Links Hypothesis states that cognitive disadvantages may be experienced by bilinguals (Kroll & Bialystok, 2013). The principle is that cognitive resources shared over two languages cause shallower lexical representations and the weaker association between cognition, which in turn can lead to likely cognitive and language processing difficulties than monolinguals.

Empirical research reveals that both the Bilingual Advantage and Weaker Links hypotheses are supported, and this shows that bilingualism is more related to cognitive development than people realize. The studies on the cognitive advantages of bilingualism have continually discussed the findings of improved executive function and cognitive control in bilingual individuals of all ages (Bialystok, 2015). For example, as part of his meta-analysis, Adesope et al. (2010) found that bilinguals

scored better on tasks that demanded attentional control, inhibition, and cognitive flexibility.

On the other hand, the research that examined the possible disadvantages of bilingualism has also not left its treasures – “no man is an island”. For example, studies on the vocabulary size and lexical retrieval in bilingual children reported various results, with some stating that bilinguals exhibit smaller vocabularies in their respective languages than monolinguals (Kroll & Bialystok, 2013). Furthermore, studies that followed the language development of bilingual children have reported incidents of code-switching and language mixing, which may reflect the difficulties they face in organizing and processing the languages (Genesee et al., 2013).

1.6.1 Cognitive Advantages and Disadvantages of Bilingualism

Numerous studies have showed that bilingualism contributes to the development of executive function, cognitive flexibility, and metalinguistic awareness (Bialystok, 2007). Bilingual individuals often demonstrate higher efficacy in the activities that require the control of attention, inhibition, and task-switching, which are the basic parts of executive function (Adesope et al., 2010). Over and above that, the cognitive flexibility that bilinguals afford is very beneficial, as it is the characteristic that makes them the adaptive and expectant individuals who can change perspectives and cope with different environmental demands and perspectives (Costa et al., 2009).

Recent research, therefore, has shifted its focus from IQ tests towards the different measures that evaluate bilingual people’s cognitive styles, strategies, and competencies. Conducted in 1962, the study by Peal and Lambert was the landmark one that altered the wave of research on bilingualism by indicating that bilinguals were more flexible and intellectual than monolinguals. The subsequent positive conclusions about the benefits of bilingualism challenge the negative perceptions of it.

Despite the lack of empirical research that demonstrates the negative effects of bilingualism on cognition, there are people who remain convinced that acquiring or the usage of a second language would reduce proficiency in the first language, a

phenomenon researchers call the "balance" of the languages (Baker, 2001: 135). Others argue that bilingualism can negatively affect the thinking and thus, may lead to smaller storage spaces for other information in the brain. Among communities where bilingualism is frowned upon are those that regard it as a threat to safety, viewing it as a "Trojan horse" that holds hidden dangers.

According to Peal and Lambert (1962), they also emphasized that the bilingual children's social and cultural environment has a great impact on their development. Families who value and encourage the use of both languages tend to raise bilingual children with a higher IQ. In contrast, current evidence strongly supports the benefits of early bilingualism for both majority and minority language speakers. Bialystok (2001) argues that the simultaneous exposure to bilingualism is more advantageous than sequential exposure. The benefits of bilingualism are cognitive, social, and psychological.

Bilingual individuals are better at thinking, speaking, and being culturally sensitive than monolinguals. Bilingual education helps language groups to understand each other and can be a tool to fight racism and inequality. Furthermore, bilingualism helps to dissolve the psychological obstacle of inferiority for the language minorities and contributes to their academic success when their home language and culture are a part of the education process.

Nevertheless, along with these benefits, bilingualism may also cause some cognitive difficulties. Some studies have suggested that bilingual people may face greater difficulties with retrieving words and possess smaller vocabularies in each of their languages in comparison with monolinguals (Bialystok, 2015). The "weaker links" or "vocabulary attrition" phenomenon occurs when bilinguals allocate their linguistic resources between two languages, which may result in less proficiency in each language (Kroll & Bialystok, 2013).

The initial research that has been carried out coherently indicated that bilingualism has harmful effects on the intellectual and spiritual development of

people which eventually led to the so-called "delayed development" and mental retardation. This negative view was not yet prevalent only among parents who were advised not to bring their bilingual children up, but also among psychologists, speech therapists, educators, and professionals as well.

This point of view, which is the most common and one that was prevalent especially in monolingual-only US and UK in the late 18th and early 19th centuries, was reinforced by the findings from verbal IQ tests that were designed to compare monolinguals and bilinguals. An influential early cognitive study of bilingualism was made by Welsh scholar D.J. Saer (1923), who compared IQ scores of 1400 bilingual and monolingual children aged seven to fourteen in rural Wales. The findings showed that bilinguals performed worse than monolinguals, which suggested that bilingualism was mentally disadvantageous rather than advantageous.

Through this study, Saer et al. (1924) assessed the language skills of college students and once again proved that monolingual students had higher grades. Besides, the prominent research of Macnamara in the comparison of the years between 1918 and 1962 was carried out with the 77 pieces of research that involved the comparison between bilingual and monolingual students in the sense of vocabulary, reading, and grammar proficiency of both languages. In this regard, bilinguals have demonstrated lower levels of language perception skills. Therefore, Macnamara (1966) rightly came to the conclusion that this will be the case in the future.

1.7 Linguistic Diversity and Dynamics in Algeria

Algeria is currently in a sociolinguistic state, which is mainly represented by its rich multilingualism, where three distinct languages, namely, Arabic, French, and Berber, thrive in blissful coexistence. Though all three languages come from diverse origins, they are all important aspects of Algerian culture. The linguistic diversity of Algeria serves as a basis for the emergence of various sociolinguistic phenomena, which include diglossia, bilingualism, and code-switching that are observable throughout the country's linguistic spectrum. Thus, Algeria is a bilingual and diglossic

society wherein the citizens can converse fluently in both Arabic and French, owing to the fact that the various dialects coexist in the linguistic milieu.

1.7.1 Overview of Algeria's linguistic landscape

The linguistic scenario of Algeria in 1830, prior to the French colonization of the region, was convoluted. The Berber population had the native Berber (Tamazight) language as the dominant language, which was frequently used to communicate with the other groups, like Phoenicians and Hebrew speakers (Fodil, 2016). Over centuries, Berbers were drawn into Roman battles against Carthage and this led to Latin being the dominating language for more than five centuries (Fodil, 2016). At the seventh century mark, as a result of the successful Arab-Islamic conquests, majorities of Berbers changed religious allegiance to Islam and therefore Berber was progressively replaced by classical Arabic (Benrabah, 1999).

Algeria went through the process of colonization by the Portuguese, Spaniards, and Turks as well. This linguistic closeness among different languages generated a new Arabic variety dubbed Arabic Dialectal Arabic (Ed-Derja), which was substantially influenced by Berber Language and notably distinct from the Arabic spoken in the Middle East (Benrabah, 1999; Berger, 2002).

The French colonization's effect on the population was the policy of subtle Frenchification, through the inclusion of French into the Algerian educational system (Benrabeh, 1999). However, the Algerian independence from french language colonization in 1962 failed in removing fully the impact of French language which can be seen in the manner of Algerian Arabic and Berber languages today.

Being liberated from colonialism, Algeria turned into a land of the Arabization campaign which brought forth adopting Arabic as the sole official language of the country in 1963 (Ager, 2001, p.20). The Algerian officials tried to build on Arab identity by encouraging the usage of Classical Arabic instead of French and Berber in various institutions, from education to administration. Nevertheless, as pointed out by Benrabah, by focusing on a single language it was incompletely implemented which

provoked the government to recognize the importance of bilingual education in early 2000s (2007b, p.29). This is why Algerian Arabic, Berber, and even French remain popular in Algerian speech. Nowadays, both “Standard Arabic” and, more recently, “Berber” have obtained the official status, while French due to the 130-year-long colonial rule of France, still remains the most popular foreign language among the people. Even though it has been fifty-five years since the Francophone period, French still remains in use in state offices, agencies, mass media, and the educational sphere, starting at the elementary level. In 2000, some Algerian young students even speak French as a first language and it became a de facto language alongside Arabic.

1.7.2 Major languages spoken in Algeria

- **Arabic:** Arabic is the language of Algeria as the official language. Modern Standard Arabic (MSA) is used in formal contexts, but Algerian Arabic (Darja) is the language that is spoken in everyday interactions.
- **Berber Languages:** Berber languages are the second-largest minority group in Algeria after Arabs. Among the Berber languages, Kabyle is the most widely spoken one. Other Berber languages, such as Chaoui, Tamazight, and Tashelhit, are also prevalent in particular regions, where each has its own cultural nuances and dialectal variations.
- **French:** French was introduced during the colonial period and is still a significant language in Algeria. The use of French is particularly widespread in urban centers and among the educated elite. It is also used in education, administration, media, and business, thus, it is a symbol of social status and a means of gaining access to opportunities both domestically and internationally.

1.7.3 Sociolinguistic factors influencing language use and maintenance

The dynamics of language use in Algeria are intricately intertwined with sociolinguistic factors that reflect the country's complex sociopolitical landscape:

- **Colonial Legacy:** Algeria was once a French colony and mostly used for social change and economic development. still carries the scar of colonization.

Libya became an independent state in 1962, but the linguistics scene in Algeria is still, French because it has been a language

- **Language Policy:** The language policy in Algeria has undergone various transformations since independence to modernization, which has allowed the promotion of Arabic as a national language and the adoption of Berber languages as cultural heritage. It was in 2002 that Tamazight was granted the status of a national language. This is a positive move by the government towards ensuring the linguistic rights of Berbers.
- **Urban-Rural Divide:** The situation in terms of language preference and competency is different here and there. The languages spoken in urban settings can be divided into French, Arabic, and Berber dialects, whereas Berber languages dominate rural areas. Hence, the identity is different for each of the two languages, as well as being associated with the role of socioeconomic factors and geographic locations.
- **Language Contact and Code-switching:** The multilingual practice in Algeria can be classified as flexible in nature, and whose idea of multiple language usage is most times mixed with code-switching and language borrowing across borders. This is an indication of the active pragmatic usage of language to meet the demands of the different social contexts and intercultural interactions.

1.8 Linguistic diversity and Dynamic in the Netherlands

The Dutch linguistic landscape stands for its multilingualism and linguistic diversity which in turn, reflects the country's rich cultural inheritance and its position as a global hub for trade and international relations. The official language, Dutch is spoken by most of the population and is used as the main language in schools, government, and media. On the other hand, the Netherlands also recognize Frisian as a co-official language in the province of Friesland, where it is used in local government and education.

Besides Dutch and Frisian, many regional dialects and languages such as Limburgish and Low Saxon also exist in the Netherlands where they enjoy the recognition of European Charter for Regional or Minority Languages. These regional languages and dialects are involved with the linguistic diversity of the country, and they keep cultural identities and local traditions alive.

The Netherlands' immigration rate is quite high, which means that multiple languages originating from the globe are common. Migrants within the various communities have a considerable number of Turkish, Arabic, Berber, as well as Indonesian and Surinamese immigrants from the former Dutch colonies who use their respective language materials to communicate. English too is a key here as through this, the Netherlands' communication activities are global. In schools, it is one of the compulsory subjects and many Dutch people are fluent in English, which they use mostly in the business sector, in the education sector, and in tourism.

Moreover, the Dutch government and educational institutions have a proactiveness in multilingualism that is enriched by the fact that people who speak two or more languages enjoy both cognitive and cultural benefits. In urban environments with ethnically diverse people, people can study in both Dutch and their native languages in bilingual and multilingual educational programs that are available.

The Dutch language has a face that displays the history, culture, and demography of a country, that is the moving scenery of languages and dialects. This multilingual environment is a community that embraces linguistic diversity and is open to the co-existence of various languages, thus providing native and immigrant communities with an advantage.

1.8.1 Bilingualism in the Netherlands

In the Netherlands, the Dutch language has been declared to be the official language nationwide. Frisian is a co-official language in the province of Friesland, which means that the Netherlands recognizes regional bilingualism *de jure* in Friesland. However, the country has not made it clear that bilingualism would be

considered a national policy. The Frisian language is the official language in Friesland, and it is also used in local government, education, and media alongside Dutch. Hence the region of Friesland is a bilingual region by law.

The Netherlands is a country where *de facto* bilingualism is prevalent in certain regions (like Friesland) and a high degree of multilingualism exists throughout the country. Nevertheless, it is not a *de jure* bilingual country at the national level, because the sole official language is Dutch although Frisian is recognized as an official language only in Friesland.

1.8.2 Challenges and opportunities for language maintenance and development of Algerian Children in the Netherlands

There are several factors that make the language maintenance very hard among Algerian children in the Netherlands and encounters several obstacles, this is followed by the dominance of the language of the host country, restricted resources in the heritage language, and social pressures toward assimilation. According to a case study by Fatima Sadiqi, diasporic communities normally experience erosion of the mother tongue as a result of linguistic and cultural integration. Children from Algeria may experience fluency loss in Arabic with a focus on Dutch in everyday conversation and at school.

These factors also involve socioeconomic challenges pertaining to access to educational materials and language enrichment. In this direction, it is conceivable that the children do not receive Arabic language teaching and cultural programs, and this can be a contributing factor to a poor ability in exercising their heritage language and culture. Lack of support for bilingualism within the education settings aggravates language attrition and hindered language skill development.

While there are challenges, the Algerian children in the Netherlands have possibilities of language maintenance and cultural preservation. In a multicultural environment, it opens up many possibilities of access to varieties of linguistic resources and languages. Bilingual education initiatives and community-based

language programs can thus provide possibilities that enable such children to engage with Arabic and Dutch languages while creating a sense of identity and belonging.

Maintenance and development of language in Algerian children is assisted instrumentally by parental involvement. As indicated by Colin Baker in "Bilingualism in Children: Cognitive, Socio-Cultural, and Educational Perspectives", it is the attitude and practice of the parents that played a very big role in influencing the outcomes on the language competence of children. This would then be realized by encouraging the parents to use Arabic at home, exposing the child to Arabic literature and media, and finally by fostering pride in heritage.

1.9 Conclusion

Bilingualism within the context of cognitive development offers a very interesting confluence between language, culture, and cognition. Generally understood stages of cognitive growth by Piaget and the sociocultural perspective by Vygotsky have stressed the role of linguistic experiences and cultural contexts in shaping cognitive development for people who are bilingual. The discussion of the Algerian linguistic situation has been able to provide some contextual background on the bilingual experiences of Algerian children abroad. The latter underlines the different linguistic landscape and its bearing on the language maintenance and adaptation process among diaspora communities.

The research raises far-reaching implications beyond the mere theoretical discourse, which gives new practical insights for educational practices and psychological interventions among children. It elaborates on the cognitive advantages attributed to bilingualism and enables us to understand just how far human minds are able to adjust to such linguistic diversity. As future research enterprises will unveil themselves, especially with Algerian children in the Netherlands, further detailed elaboration of complex processes and developmental trajectories of bilingual cognitive development will add depth to the understanding of this phenomenon. In this objective inquiry, we intend to add to the general discourse on bilingualism and cognitive development,

hence informing educational policy decisions and interventions for bilingual learners across diverse linguistic contexts.

CHAPTER TWO:

Field Work Investigation

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2.2 Bilingualism Among Algerian Children in the Netherlands

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2.5.1 Results analysis of the observation and note taking

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2.1 Introduction

The preceding chapter gave an overview of the bilingual development of cognitive and described the linguistic context in Algeria. Now, attention shifts to the practical aspect of the study: In the academic investigation referred to as fieldwork investigation. This chapter aims at describing the method used in this study, how data was collected and the process of analysing the results with regards to the cognitive development of Algerian children in the Netherlands.

However, as has been mentioned before, bilingualism refers not only to the language use, but also identity and cognition. It therefore requires the use of a systematic approach, and one that transcends the limitations of language as a social-psychological study of the process and experience of learning a second language. This fieldwork aims at portraying these experiences in order to explain the cognitive emergence of these Algerian children in between their own and the Dutch culture within the host country.

This chapter explains the methodological paradigm as it presents the requisite sample for the empirical research and presents the numerous research tools used for data collection in a multicultural environment. Also, it explains the method used to analyze the bilingual personal histories to produce the insights highlighted in the paper. Thus, this chapter provides an account of the research process practically, with an idea of establishing credibility and dependability of the findings.

2.2 Bilingualism Among Algerian Children in the Netherlands

Algerian children residing in the Netherlands, exposed to both Arabic and Dutch, are an ideal subject through which to study the impact of bilingualism on cognition. The study explores the specifics of those children's life experience focusing on the difficulties of bilingualism. These two aspects of the first language and culture often interact in complex ways which facilitates as well as undermine infants' cognitive development. The impact of bilingualism is very significant in cognitive development since it influences all aspects of cognitive functioning including executive function, attention control as well as problem solving.

Thus, the bilingualism is not only the issue of language; it is the part of culture and social context of a person. For the Algerian children living in the Netherlands it means they have to reconcile their ethno-cultural identity as Algerians in the context of Dutch sociocultural environment.

Some of the key questions that the study seeks to answer include how assimilation and identity formation influences linguistic preferences and proficiency trajectories of those children. Cultural factors are considered to be of great importance in the processes that are related to bilingualism, including language acquisition, language loss or language maintenance.

It is important to know more about the cognitive development of bilingual children in the Algerian community from the Netherlands that is why analyzing the results of the present study is important for improvement of educational practices and policies. The possibility of positive outcomes is explained by the fact that programs that appreciate students' language and culture can make a positive difference in the achievement of bilingual students. Adopting effective bilingual instructional

approaches that maintain Arabic and Dutch in schooled Algerian children have implications on these children's academic achievement and psychosocial well-being.

2.2.1 The bilingual experiences of Algerian children abroad

An exploration of actual context observes that Algerian children in foreign countries are faced by a linguistic scenario in which they have to switch from the Arabic that they learn at home to the dominant language of the country their parents have settled. The two experiences of the two languages together as discussed by Colin Baker in a book titled "Bilingualism in Children" averts the experiences of the children's bilingualism. Thereby, these children skilfully switch between Arabic and Dutch and this determines their language abilities and choices, as well as their identity. In fact, this linguistic negotiation is very firmly located within a broader cultural frame.

Socio-environmental attributes in these children also have impact to their development. This is due to the friendly and accepting communities they have, quality education which they obtain and the exposure to various linguistic and cultural resources.

This fieldwork also stress the need to take into account the linguistic, cultural and socio- environment when investigating the bilingualism of the Algerian children in other countries. This is enabling the student to gain an improved insight of the different aspects that influence their linguistic and cultural development.

2.2.2 Relevance of the Algerian linguistic situation to the cognitive development of bilingual children

Algerian bilingualism constitutes a rather interesting case study for investigators in the domain of bilingualism and cognitive acquisition. Music, film, and literature in Algeria are diverse and reflect the interaction of the three main languages present in this country, Arabic, French, and Berber which influences the development of bilingual children both in the homeland and in diaspora.

This language difference, as seen from David W. Green's study *Bilingualism and Cognitive Control*, is the perfect breeding ground for the growth of better intelligence. Algerian children who grow up with both languages and are surrounded with multiple linguistic systems from their early childhood show increased cognitive flexibility, awareness of language and problem solving skills as compared to monolingual children. This raises the possibility of a beneficial impact on cognition inherent in the ability to manage increased-processing linguistic complexity.

It becomes very clear that the findings of this study have much broader implications than just affecting the child alone. Realising the highly intimate relation that exists between Algeria's linguistic reality and cognitive processes has implications for educational processes and Education policies. Through understanding of the cognitive gain due to multilingualism, the educational programs can plan for teaching strategies and curriculums that will help not only in achieving scholastic success, but also to build up a positive endowment of culture amongst the Algerian children.

Hence, this research endorses the call towards the realization of bilingual and multicultural learning environments. From this perspective, it is only possible to insist on the complexity of linguistic realities of the Algerian context and stress that only the

recognition of this complexity will help educators equip children with the cognitive resources which will allow to encounter a growing global context.

2.3 Research Design and Instrumentation

In order to refine the large and rather general subject of our study on the cognitive development of bilingual children, one case study has been chosen in accordance to its correspondence with the research questions and participants' availability. The research design and the instrumentation used to study this latter on young bilingual Algerian children in a Dutch speech community include the use of both qualitative and quantitative approaches. This therefore makes this kind of research approach more comprehensive in its attempt to explore all effects of bilingualism on the development of cognition. A sequential exploratory design is used, according to which qualitative data collection precedes the quantitative data collection, which is helpful in order to closely investigate bilingual language acquisition and development. This section gives a brief description of the pre Hick instruments employed and non- participant observation, notes taking and a structured questionnaire all of which were chosen to capture the issues of bilingualism and the learning process in the development of cognition in the subjects. The methods of data collection, the issue of ethics and a view to arriving at findings on the cognitive development of the bilingual child within this study are also highlighted in brief.

2.3.1 Sample population

In sociolinguistic research, sample is a very important factor as it helps to develop and explain the relations between language and society. It is often a set of people or teams of people with variation in terms of language, social status, and communication practices. These participants are of such importance as they produce the data, and therefore help in the field of language variation, attitudes towards

languages, language use, and sociocultural aspects of a given community or society. The sample chosen is very important since it makes it easier for the researchers to generalize their findings and conclusions about the language behavior and its social repercussions from the selected sample to the population under study.

In addition, the sample enables researchers to uncover the details of the differentiation of the language and the process of its evolution depending on the demographic group such as age, gender, ethnicity, socio-economic status, geographical location, etc. Therefore, once other forms of language use patterns and other linguistic variables are observed from within certain social contexts, they are said to reveal underlying sociolinguistic processes such as language contact, dialectization, language retention or replacement. In addition, the sample plays an essential role of studying the language ideologies, perceptions, and attitudes of a particular community. Particularly when investigating participants' views and perceptions about the language varieties, researchers are in a position to investigate the various aspects of language hierarchies, discrimination, policies on language, and various efforts towards language planning. It is crucial to know those sociolinguistic factors in order to support multicultural language policy, the rights of multilingual people, and social equality.

The sample population for this study consists of 40 young bilingual Algerian children, including 27 girls and 13 boys, residing in a Dutch speech community. These children, aged between 3 and 16 years, exhibit varying levels of proficiency in both their native Algerian language and Dutch, the predominant language of their environment. The population of Algerian people living in the Netherlands is relatively small, with approximately 3,000 Algerians residing in the country, making up about 0.017% of the total population. By including these children we are thus able to afford a view of how bilingualism impacts cognition given the particularity of a Dutch

speaking context. Additionally, the study involves 22 parents as participants in this research. Participants' accessibility was taken into account to achieve a sample that is relevant to the research questions and objectives of the study.

2.3.2 Research tools

The research methodology has been implemented utilizing a diverse range of research tools and instruments to gather significant and coherent data fulfilling the varied needs of the study. These investigative instruments include: non-participant observation, note taking, and a questionnaire. The reasoning behind employing multiple research tools is to maximize the advantages, as each instrument possesses both strengths and limitations.

2.3.2.1 Non-participant observation

Non-participant observation is one of the essential techniques used in collecting data in sociolinguistic research to have first-hand encounter with languages use in specific natural contexts. In this approach, the researcher only observes the language behaviors and interaction that is going on in the society without engaging in them. Through non-participant observation, one is able to gather detailed data that depict the context, languages' behaviour in pragmatic and natural environments. The other strength of using this research tool is that it allows for documentation of natural language since the subjects are not influenced by the observer's presence. Compared to other approaches, non-participant observation enables the researchers to study language in its natural setting with no stress or distortion resulting from self-reporting or social desirability effect. This approach will help the researcher to get qualitative data.

As a research tool, non-participant observation involves the systematic process of selecting observation sites that are usually places the target population often visit

such as street, home and shops while conducting a research aimed at generating data on the language use of the bilingual Algerian children in the Netherlands. Specific observation plans are set with regard to observation target, method of observation and documentation. Since ethical consideration play an important role, prior consent is sought from appropriate stakeholders. While engaged in observation sessions, the researcher also records language behaviors and/or interactions by note taking. The subsequent observations are followed by reflection and preliminary analysis so that the following session is prepared for. Finally, the conclusions are drawn and entered for publication and/or presentation in professional journals and conferences to add to the available knowledge about the language use and attitude of the bilingual Algerian children in the Netherlands.

2.3.2.2 Note taking

During the observational phase, notes about the linguistic conduct of the studied group were taken. A proper note-taking is important in this type of research for several reasons. It helps to establish a dependable way of observing the behaviour of participants in a real-time setting and of documenting the specifics of the applied language usage. It also gets to save on time that would otherwise be used in trying to recall certain linguistic interactions, language choice, code switching and other related features among the study population. In essence, this research tool helps in sorting out what the researcher has observed in a given society so that the researcher can determine the new trends and other factors that make up the emerging themes and events. This orderly method of data collection enables the researcher to produce deeper and more detailed research results besides facilitating a proper analysis and interrogation of the collected data. In this research, there are some words or phrases that have been listened to from the speech of the target population and these will be written down. They will be discussed and explained in the part of data analysis.

2.3.2.3 Questionnaire

Questionnaire is one of the effective research instruments in conduct of sociolinguistic research since it is effective in data collection from within a community or population. In this respect, questionnaires are beneficial to researchers since they provide a clear structure through which large scale responses from the participants can be obtained systematically saving much time. However, one of the main benefits of using questionnaires in sociolinguistic studies is flexibility that allows their application in various contexts and with the aim that a researcher needs. Further, questionnaires make it possible for the researchers to have an overall pattern of responses, which can be compared to that of other groups or different time. Also, because of the anonymity and privacy it affords the participants, it is likely to elicit better responses. This instrument allows the researcher to quantify data and therefore apply statistical analysis towards the data collected.

In this research the target population to which the questionnaire is administered is the parents of the Algerian bilingual children in the Netherlands. This approach is selected in order to get important information about the linguistic and sociocultural background in the home context, where the parents are the major informants in children L1 and L2 acquisition and use. The list of questions will concern the languages used in the home, the languages chosen by the children and their parents, language transmission practices, the attitudes towards bilingualism and language maintenance. Furthermore, the questionnaire may include aspects of cultural identification, language use and, the experiences of acculturation in the Dutch speaking region. Parents as participants are hence involved with the intention of getting their opinions and experiences within the research since they are part of the equation considering the social interrelations of bilingual upbringing and language and identity among the Algerian bilingual children in the Netherlands.

2.4 Data Collection Methods

Data are the detailed information or material obtained as a result of applying research methods or technique in the field. This includes recordings of speeches, questionnaires, cross-sectional studies, written forms such as diaries or autobiographies, observation notes, audio recordings of interviews and more. Data Work or Data handling contains three basic steps: gathering up data or data collection, working with received data or data processing, as well as looking for meanings and relations in received data or data interpretation.

Data collection is one of the most important processes in carrying out research and must be well structured; this is more so in cases where the data collection cannot be repeated. This planning includes participant or data sources selection and sampling.

In this research, data collection looked at a number of systematically arranged steps aimed at achieving accuracy and reliability. The first step was planning and design, wherein appropriate and concise goals of the research that sought to comprehend the child's cognitive and linguistic capitals were set forth. To achieve these objectives, non-participant observation, note taking and a questionnaire were utilized as the chosen methods of data collection. These instruments were meant to provide a complete picture of the children's interactions in cognitive and linguistic terms in the prescribed contexts.

Non-participant observation was done in the natural settings such as schools, playgrounds, and homes in which the group of children was able to speak two languages. The researcher was an observer and not a participant in order to lessen the effects on the children's regular activities and wrote down a lot of information to help record the language and cognitive behavior. While making the primary observations, where finding social interactions with a Facebook-hypothesis focus is anticipated,

note-taking was organized into well-defined sections focusing on certain interactions and behavior patterns or individuals. Also, a structured interview with parents was conducted which assessed home and school language usage, children's developmental milestones and attitudes toward both languages. The questions were tested with respondents and were afterwards edited to eliminate vague and irrelevant content.

The importance of these aspects for this research was highlighted in the previous chapter. Written consent was sought from the parents after informing them about the study in detail as well as their involvement in it. Data obtained from all the participants was kept confidential as their names and any other personal details were not indicated in any report postpartum and in all records. Every effort was made to prevent any feelings of discomfort and any harms that children might suffer during the data collection process. This means that children were observed as unobtrusively as possible without bothering them in any way.

2.5 Quantitative and Qualitative Methodologies

In exploring the relationship between language and society, a sociolinguistic approach does consider both quantitative and qualitative research methods. Each strategy has inherent strengths and weaknesses, thus a researcher may apply one of them or both depending on the study or the aims of the study. A few parts of this research have an emphasis of using quantitative methods in sociolinguistic research. Numbers are collected in an orderly manner and interpreted by using statistics so as to determine the relationships and trends within sociolinguistic studies. Such approaches are especially helpful in verifying hypotheses, making broad assertions or evaluating the relative frequency of particular linguistic characteristics among the population. These approaches also produce highly valid findings that are replicable and therefore, most researchers are able to extrapolate their findings to a bigger sample. They are useful for finding patterns and verifying the theoretical assumptions. Notwithstanding,

qualitative methods used in sociolinguistics are more dedicated to the cultural, contextual or more static use of language and its conclusive understanding. These methods are appropriate for understanding the intricate and changing aspects of language use in social interactions. They provide a comprehensive explanation of how language operates in social contexts detailing the complicated interactions that take place. They are useful for new theory creation and investigation of phenomena that are not fully understood.

2.5.1 Results analysis of the observation and note taking

Analysis is always focused on "searching for explanation" (Moyer 2008: 30). Therefore, this section presents different types of data gathered through observation and notes taken. They are presented to be studied using both quantitative as well as qualitative methods. In this study, the authors investigated these behaviors in a group of 3–16 year-old Algerian children and adolescents living in The Netherlands. Notes were taken of the data collected through non-participant observation whilst paying special attention to the language use of Koiné in their two main settings, namely at home and around town. This sheds a light on how, for this group of bilinguals the first language being Algerian Arabic tackling it with French borrowing and Dutch before they leave their motherland then coping English borrowings as third or fourth among others.

Data were collected through systematic non-participant observation of the children and teenagers in their daily interactions, with a special focus on actions related to nutrition. Two key settings were used in the observations.

1. **Home Environment:** Observations were made to understand the primary language used within the family.
2. **Public settings:** Language use was observed during interactions with both Algerian peers and Dutch peers.

Detailed notes were taken during each observation session. Language choices, communication context and patterns of interaction were documented notes made for each observation session. The note-taking schema traced a systematic layout of particular details to be noted like which language was being spoken, whether there capturing so code-mixing and such other factors determining the operationalization for chord choice. Quantitative data were based on counts of the observed instances of use, and subsequently analyzed statistically.

Observations and Detailed Note-Taking:

Context 1: Family Lunch at Home (6 Participants)

- **Time and place:** Saturday afternoon, family lunch at a per participant house.
- **Participants:** 2 parents, 4 children.
- **Observations:** The language of the family was primarily Algerian Arabic throughout my joining them for this meal. Arabic developed the phrase "pass the salt"/ʕa'ti:ni l'milħ/, but borrowed words like "télévision" and ordinateur".
- **Notes:**
 - ❖ When one of the children said a Dutch word, like 'sleutels' for keys instead of /ma'fa:tih/, they were corrected to say it in Algerian Arabic.
 - ❖ This reflects to the family looking out for heritage.

Context 2: Playground Interaction with Algerian Peers (5 Participants)

- **Time and place:** Sunday afternoon, local playground.

- **Participants:** 5 children from the same family (3 boys, 2 girls) aged 6-10.
- **Observations:** The children used Algerian Arabic with some French words while playing a game. Commands like /rwa:hlahna/ in AA (come here) and "allez" in French (go) were frequently used.
- **Notes:**
 - ❖ Use of code-switching, e.g., children would automatically switch to Dutch when a Dutch-speaking child came up and said something in phrases like "laten we spelen" which translates to "let's play".
 - ❖ They would switch instantly and according to context, showing their ability to be bilingual.

Context 3: Doing a School Homework (3 Participants)

- **Time and place:** Wednesday evening, living room setting.
- **Participants:** 1 parent, 2 children aged 8 and 12.
- **Observations:** When helping with the homework, The parent used the Algerian Arabic, using phrases like /h el tamri:n lew el/ in AA which means "answer the first exercise", and switching to French for technical terms like "math ematiques" (mathematics) and "science". However, both parent and children switch to Dutch in arguing about the homework solution, using phrases like "Het voltooi en van de algebra ische vergelijkingen" (Completing the algebraic equations).
- **Notes:**
 - ❖ The parent deliberately used Algerian Arabic for instructions and switched to French for subjects-specific terminology, which the children followed naturally.
 - ❖ Both parent and children use Dutch in discussing the homework solution to keep the value of such an academic topic.

Context 4: School Pick-up Interaction with Dutch Peers (4 Participants)

- **Time and place:** Friday afternoon, school playground.
- **Participants:** 4 children (2 Algerian, 2 Dutch) aged 7-9.
- **Observations:** The Algerian children, when they noticed their Dutch friends, they switched from Arabic to Dutch. They used Dutch expressions such as “wat heb je gedaan? (what did you do?) However, they keep talking in Arabic to their siblings, e.g /rwaħ nʃriw ʃikula/.
- **Notes:**
 - ❖ Children use Dutch to integrate socially and they switch back to Arabic when discussing family matters or in the absence of Dutch peers.

Context 5: Waiting for the Bus (4 Participants)

- **Time and Place:** Monday morning, bus stop.
- **Participants:** 1 parent, 3 children aged 5-11.
- **Observations:** The kids mainly spoke Dutch with a few sprinkles of English while waiting for the bus. For example, they used "let's go" and "hurry up" in English, while using "bus" and "school" in Dutch. Very few Arabic words were used, except for /jala/ (let's go).
- **Notes:**
 - ❖ The preference for Dutch and English in public settings.
 - ❖ Children's adaptation to the broader linguistic environment.

Context 6: At the Beach (6 Participants)

- **Time and Place:** Sunday afternoon, Den Haag beach.
- **Participants:** 2 parents, 4 children aged 7-14.

- **Observations:** The children used Dutch predominantly while playing, they added some English terms like "toys", "birds", and "swim". Arabic was rarely spoken, e.g. /ləma/ (water), and /rəmla/ (sand). being used.
- **Notes:**
 - ❖ The minimal use of Arabic in recreational settings.
 - ❖ Dutch and English being the primary languages for communication.

Context 7: At a Restaurant (5 Participants)

- **When and Where:** Friday evening, family dinner at Al walida restaurant.
- **Participants:** 2 parents, 3 children aged 4-12.
- **Observations:** The children used Dutch with some English when interacting with both their family and the restaurant staff. They said "menu" and "waiter" in English, while phrases like "ik wil" (I want) and "dank je" (thank you) were in Dutch. Arabic was scarcely used, with only terms like /ʃukran/ (thank you) appearing occasionally.
- **Notes:**
 - ❖ A clear preference for Dutch and English in public dining settings.
 - ❖ Comfort with these languages in formal social interactions.

The results obtained from these two research instruments are presented as follow:

1. Home Environment:

The majority of children and teenagers spoke Algerian Arabic as a first language in their respective households. Amongst these French borrowings was this use of AA. However, a minority of the participants reported speaking Dutch at home as well which suggests an mixed lingual preference and potential bias from wider regional affiliations with other speakers of Belgian-Dutch. Regarding qualitative

findings, observations and notes mainly highlighted that using Algerian Arabic is essential at home in order to secure identity and connections with the family. French borrowings are incorporated seamlessly into the text, which is also typical for this linguistic border. Furthermore, comprehensive field notes included the intentional use of Algerian Arabic by parents to preserve in these children their heritage language practices.

2. Public settings:

The linguistic behaviour of the children and teenagers in this setting was divided into two cases:

a) with Algerian peers and family : the children mostly speak Dutch, sometimes mixing in English expressions out on the streets. This adaptation to their broader linguistic environment implies a natural tendency toward the use of the languages typically spoken and understood in those contexts. Arabic is seldom used, colouring a little more than plain conversation.

b) Only Dutch with Dutch Peers: The pure use of Dutch by the children. It promotes social integration and the establishment of ties beyond ethnic circles.

Table 2.1 A summary table of non-participant observation and note-taking results.

Context	Language Use
At Home	Algerian Arabic with some French borrowings (85% of participants). Dutch (15% of participants).
Public Settings	With Algerian peers and family: Dutch with some English borrowings and very small use of Arabic (80% of interactions). With Dutch peers: Dutch (90% of interactions).

To analyze these findings, the patterns and contexts of language use among bilingual Algerian children and teenagers are examined, considering both quantitative and qualitative data: To analyze these findings, the patterns and contexts of language use among bilingual Algerian children and teenagers are examined, considering both quantitative and qualitative data:

A higher percentage of people use Algerian Arabic at home than in any other social setting, which may indicate a retention of an autochthonous culture and language within the home. The use of French borrowings is attributed to the fact that Algerian context is still characterized by high degree of French language presence as a part of the linguistic resources.

Being able to go from the Algerian Arabic to Dutch depending on the situation shows the linguistic repertoire of the speaker. This code-switching behaviour is common for people with two languages because they switch the language based on the audience they have. This might further stimulate these children cognitively since they learn to survive in different linguistic environments, or shifting between languages might be advantageous to the child's development.

2.5.2 Results analysis of the questionnaire

It is conventional in sociolinguistic research to make use of questionnaires they are useful since they provide a structure in data collection where the researcher is concerned with language use, attitudes, and proficiency of the targeted population. It must be noted that, for this study, an online questionnaire was completed by 22 Algerian parents of 22 children who have Dutch-Algerian bilingual background and are living in the Netherlands with a stated age range between 3 and 16 years. Therefore, the purpose of the study was to investigate the language use, language measures of the bilingual families and how the culture influences them, including the effect of bilingualism on the children's comprehending capabilities. As a result, the aim of this research is to understand the nature of language use and language beliefs of these families with the purpose of providing some insights into the advantages and difficulties of raising culturally and linguistically diverse children.

The following sample report represents the results analysis of the questionnaire:

Part 1: Demographic Information

This section investigates the demographic information of the children.

Question 1: Relationship to the Child.

All 22 respondents identified themselves as parents.

Question 2: Number of Children.

2. How many children do you have in total?

22 réponses

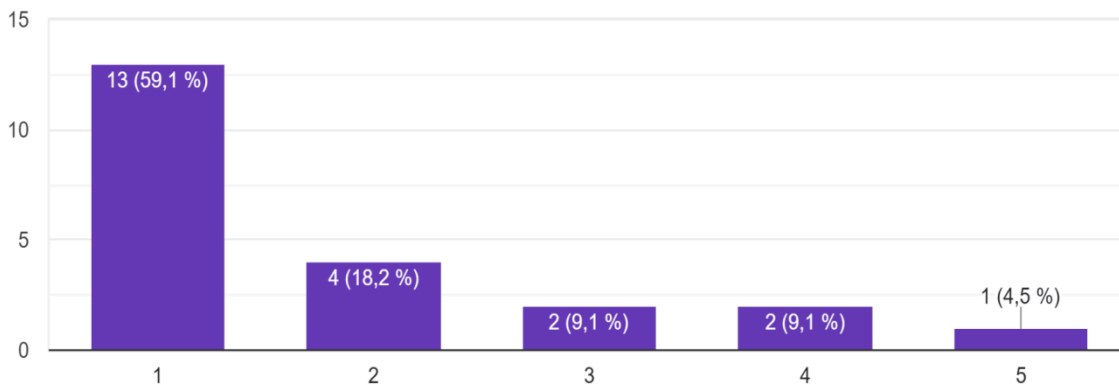


Figure 2.1: Bar graph of number of children in each family of the respondents.

Most families have one child (59.1%), followed by families with two children (18.2%). Fewer families have three (9.1%), four (9.1%), or five children (4.5%).

Question 3: Ages of Children.

The children's ages varied widely. Notable clusters included children aged 3, 4, 6, and a range of teenagers aged 12, 13, 15, and 16.

Question 4: Primary Language Spoken at Home.

The most spoken first language among the participants was Arabic, with 54.5% of the respondents indicating it as the main language used at home. Then came Dutch, the first language for 27.3% of the participants. Not least of all is the Tamazight, a first language spoken by 13.6% of the participants. French was not very common; however, it was represented as a first language by 4.5% of the respondents.

4. What is the primary language spoken at home?

22 réponses

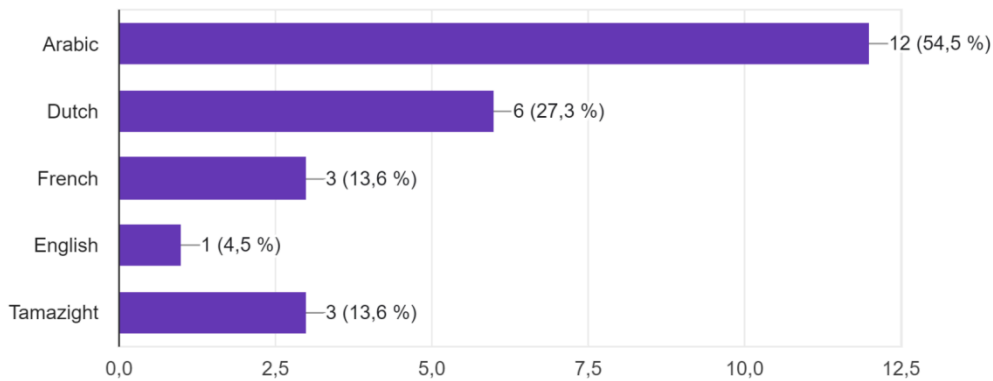


Figure 2.2: Graph of the primary language spoken at home.

Question 5: Secondary Language Spoken at Home.

As it relates to secondary languages spoken at home, Dutch emerged as the most frequent because 50 percent of all respondents used it as the secondary language in their households. This was followed by Arabic, which 22.7 percent of the participants reported as their secondary language. Both French and English were identified as secondary languages for 18.2 percent of the respondents each.

5. What is the secondary language spoken at home?

22 réponses

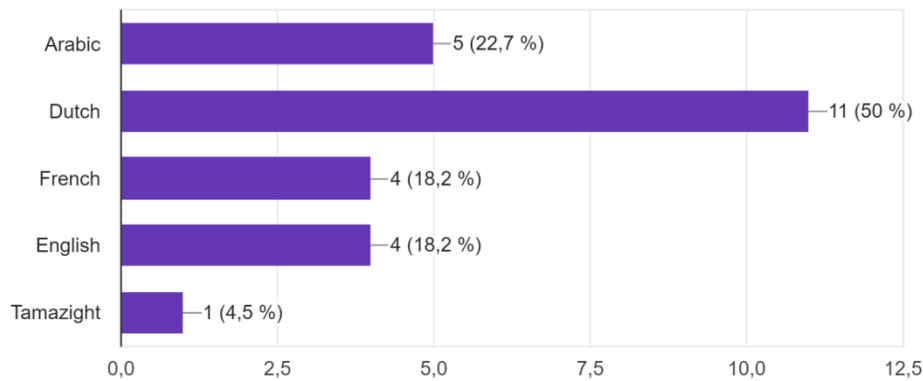


Figure 2.3: Graph of the secondary language spoken at home.

Part 2: Language Use and Proficiency

This section investigates the language use and proficiency of these multilingual families.

Question 1: Languages Spoken Fluently by Parents.

Arabic topped the list of most spoken languages among the parents at the rate of 95.5%, while French was the other predominant language among respondents: 81.8%. A large percentage of parents also showed their fluency in the English language: 68.2% reported speaking it fluently. The Dutch language is similarly represented, too: 59.1% of respondents claimed proficiency in this language. One-fifth of the participating parents also reported Tamazight, totaling 18.2%. Only one parent reported being fluent in both Russian and Ukrainian.

6. Which languages do you speak fluently?

22 réponses

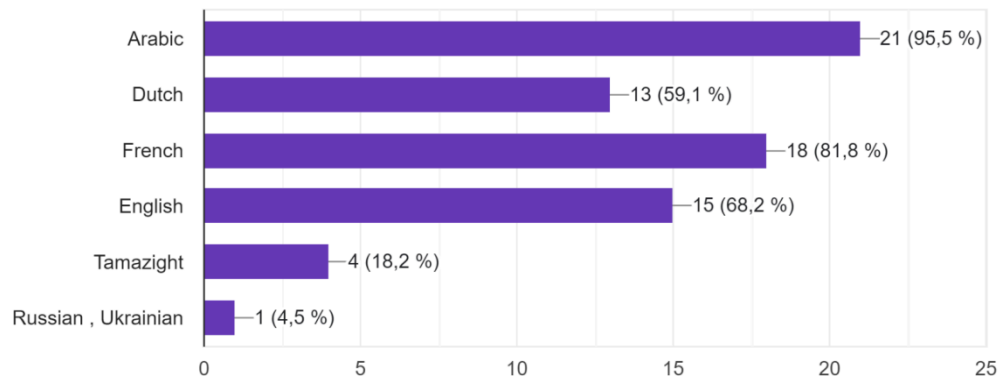


Figure 2.4: Graph of languages spoken fluently by parents.

Question 2: Languages Spoken Fluently by Children.

Dutch thus became the majority language of proficiency among children as 59.1 % of the respondents reported that their children were fluent in Dutch, Arabic came second which was reported to be spoken fluently by 54.5 % of the children. A good proportion of children also showed fluency in English as 31.8 % of the respondents reported proficiency in English. French and Tamazight were also represented, with 18.2% and 13.6% of children, respectively, reported as fluent speakers of those languages.

7. Which language(s) do your children speak fluently?

22 réponses

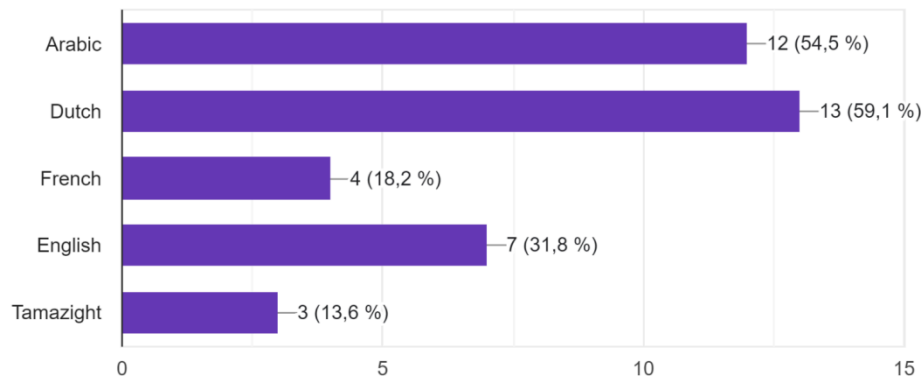


Figure 2.5: Graph of languages spoken fluently by children.

Question 3: Languages Used for Communication with Children.

The languages preferred to be used by the target audience are: Arabic, coming on top with a percentage of 72.7%, as the language most used by the respondents in their communication. Then comes Dutch, which 50% of the participants use more frequently in their communication. French is also one of the commonly used languages, which 27.3% of the respondents preferred to use during their interactions. In addition, 18.2% of the participants reported the use of both English and Tamazight when communicating.

8. In which language(s) do you typically communicate with your child?

22 réponses

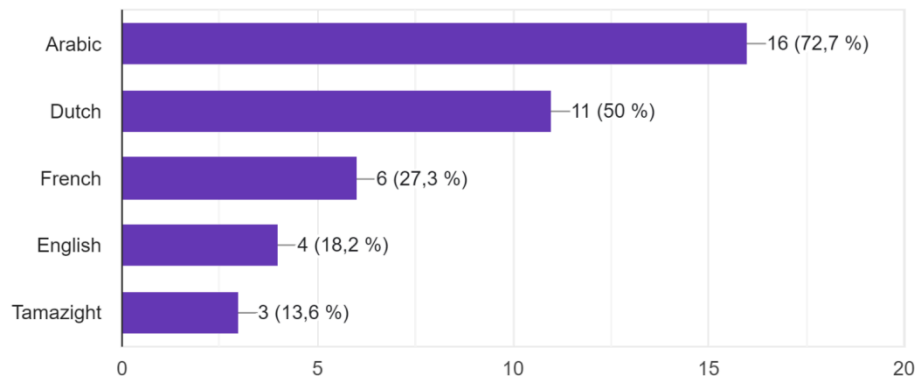


Figure 2.6: Graph of languages used for communication with children.

Question 4: Frequency of Communication in Different Languages.

Communication frequency relates to different patterns in the various languages in Algerian-Netherlands households. More respondents reported communicating in Arabic very often, 45.5%, followed by 27.3% who reported that they often communicate in Arabic. Dutch received almost equal shares of prominence in communication, with 36.4% of reporting participants stating they use the language both very often and often. French, although less utilized, still had remarkable usages particularly in sometimes and rarely categories, 22.7% and 13.6%, respectively. The least used to communicate were English and Tamazight, which recorded varying rates on different categories of frequencies. For English, it was found that 27.3% sometimes utilize it, while for Tamazight, 13.6% of the respondents use it very often.

9. How often do you and your child communicate in each language?

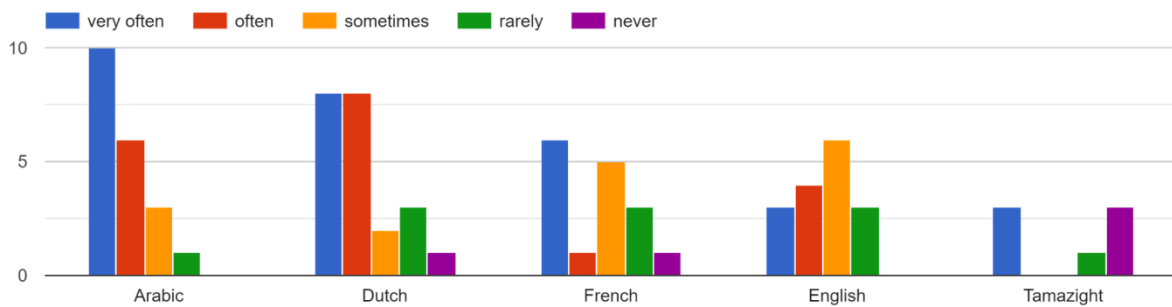


Figure 2.7: Frequency of communication in different languages.

Part 3: Language Environment

This section investigates the contextual factors influencing language choice and exposure to Algerian culture among bilingual Algerian children living in the Netherlands.

Question 1: Specific Contexts for Language Use.

Some of the parents reported that depending on the context, i.e., home environment and Arabic and French being in common use, they provide a multilingual platform to the members of the family to communicate with each other. On the other hand, Dutch is preferred outside the home premises as the comfortable language to speak. Some parents mentioned Arabic was used while talking with the family in private or on specific religious matters, which in turn would insinuate a situation where Arabic does, or tends to be more privileged in more personal or spiritually significant circumstances. Moreover, Dutch was more frequently used when detailed explanations were given, or while discussing certain things with non-Arabic people, thus proving a particular linguistic choice might well depend strategically on the linguistic identity of the interlocutors.

Question 2: Exposure to Algerian Culture and Language Outside the Home.

50% of the participants responded that this exposure occurs often, which means constant involvement in or exposure to Algerian cultural activities and linguistic features outside of the household. Besides, 40.9% of the participants reported that the exposure occurs occasionally, which is to say that exposure to Algerian culture and language is periodic and outside the home circle. Very frequent exposure was also reported by a smaller number of participants, which amounts to 13.6%, with the meaning of high and regular level. Noticeably, no respondent selected rarely or never; this truly shows that the influence of Algerian culture in their social surroundings outside of the family is omnipresent.

11. How often do you expose your child to Algerian culture and language outside the home environment?

22 réponses

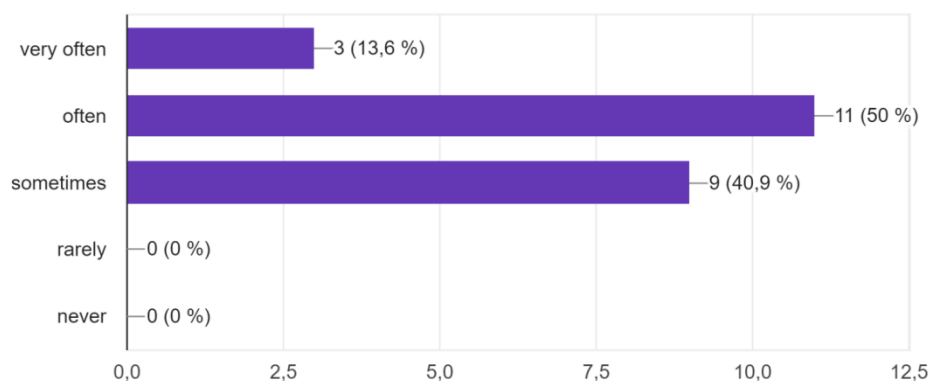


Figure 2.8: Graph of the exposure to Algerian culture and language outside the home.

Part 4: Attitudes and Beliefs

This section of questions aims to investigate the attitudes, beliefs, and challenges faced by parents regarding the bilingual upbringing of their children in the Netherlands.

Question 1: Importance of Maintaining Proficiency in Both Languages.

Majority parents were 92 percent of the total population studied for the survey. Specifically, the 9% stressed on the necessity of their children keep up with their Algerian and Dutch languages respectively. In order to discuss their children's learning, parents reproduced a complex view of language and learning, always highlighting the interdependence between language and multiple aspects of children's development. More specifically, parents provided details on how the acquisition of language is linked with the ability of a cultural group to preserve an appreciation of their heritage, and how Ma, our study's participant, played an important role in ensuring that this underpinned cultural belief was observed. Furthermore, they went further to explain other benefits for the cognition brought about by bilingual, they include; flexibility in thinking, better solving of problems and even better cultural understanding. Furthermore, parents stressed that the language as an important factor that determines the further life of their children and recognized its importance for studying, employment, and integration into the multilingual context of the Netherlands.

Question 2: Benefits of Bilingualism.

Parents highlighted a number of advantages of learning two languages, such as the fact that it increases cognition ability, acknowledging the ability of bilingualism to foster the ability to think and adapt in different ways; boosts self-esteem of children regarding how the ability to speak two languages empower their children. Other than cultural openness, and better job market prospects, in the future. They thought that bilingualism increases the intelligence level, the fluency in speaking and the availability of the rare asset in future for their children.

This is the third question and it tackles on the issues of educating children into being bilingual.

Question 3: Challenges of Raising Bilingual Children

The parents reported several issues with parenting and raising children who are bilingual with the following issues coming up repeatedly. These included issues to do with the use of the two languages; use of both languages in a single sentence, the slow pace in Dutch learning due to limited exposure; and the use, sustainment of Arabic in a Dutch speaking surrounding.

2.6 Discussion of the Results:

This work therefore looks at understanding cognitive change and language in young Algerian bilingual children in the Netherlands. In the present study, non-participant observation, note-taking and a questionnaire will be used to gain an understanding of how these children acquire and use their languages, the effects of bilingualism on cognition and the performance of these children in school and their social adjustment due to exposure to bilingualism.

In reference to the first hypothesis which posits that AL children's L1 and L2 development and utilization is different from monolingual children because of multicultural background. The data collected was rather informative and finalized the investigation with following outcomes. This study concluded that, most of the children and teenagers are in a position to decide which language to use in which situation. Clearly, the results of the questionnaire provide similar evidence to this assumption. This hypothesis is supported by the findings as they demonstrate the children's capability of code-switching according to the social situation which is key in the cognitive and social development of children. It proves their ability to work in a singular environment that contains different linguistic and cultural reality. The same

was evidenced by Grosjean (2010) study on bilingualism and Poplack (1980) on code-switching which similarly concluded that while bilinguals maintain two languages they distinguish between them depending on context and use each language with different people and in different circumstances. Therefore, it complements this material by offering specific quantitative data on Algerian children in the Netherlands, as well as observations of the uses of Arabic, French and Dutch languages in their communication. All the above research instruments lead to the same results and endorse the side of the first hypothesis with which we started.

The second hypothesis that postulates that the cognitive development of bilingual Algerian children in the Netherlands might manifest different pattern in executive functions due to effects of bilingualism has found support in the data which reveal that parents thus have higher expectations from bilingual children claiming that bilingualism leads to better cognitive development, higher self esteem, cultural sensitivity, and better prospects in future. However, several parents reported that their children use both languages in the same sentence suggesting that the children may take time to master each language fully and that this may cause delay in some aspects of cognition. These findings are in line with findings of Bialystok et al (2009) where they posit that bilingualism has benefits to the executive control functions such as problem solving and juggling between different tasks. However, as stated by De Houwer (2007), when it comes to language-specific tasks there might be certain temporal cost and this involves a certain extent of initial slowness. In support of the hypothesis, the contextualised vocabulary and semantic processing provided in these findings indicate the importance of bankruptcy to bilingual cognition, even as these effects contended with first language cost. This thus enhances knowledge on the impact of bilingualism on children's development, which portrays initial difficulties yet has a positive impact on the learners. Furthermore, one could argue that the

identified cognitive outcomes may not be attributable solely to bilingualism but may depend on such factors as parents' education level and socio-economic status.

The third hypothesis that postulated a bilingual environment would play an important role in academic and social integration for the children, where evidence underpinned the parents emphasizing the very importance of proficiency in the Algerian and Dutch languages for cultural identity and future opportunities. Children demonstrated adaptable and socially effectively integrated patterns in using their language, but parents reported a number of challenges in balancing exposure to both languages, and in maintaining the Arabic within the predominantly Dutch-speaking environment. This supports Cummins' suggestion that maintenance of the home language supports academic success and cultural identity, and Portes and Hao's finding that bilingualism strengthens social networks and integration. The results reveal the contribution of a bilingual environment in sharpening the ability of flexibility and social adjustment in different social situations. However, social integration can be facilitated through schools and society with other multi-cultural programs, as well, rather than through bilingualism.

2.7 Conclusion

This chapter discussed the cognitive development of Algerian children who are bilingual and living in the Netherlands while considering their patterns of language acquisition and use within a multicultural environment. The analysis indicated an interesting trend of languages among the children, which proved to be adaptable to

various social contexts. Furthermore, it has pointed out that some cognitive benefits associated with bilingualism, such as better problem-solving and multitasking skills, are benefits which also pop out from the existing literature. Most of the results reported supported the research questions and hypotheses, while others did not support them. This chapter contributes to an understanding of the bilingual influence on cognitive and social development by showing that bilingual environments engender specific patterns of language use and cognitive benefits after some initial difficulties. Such insights bear significant promise for educators, policymakers, and parents in informing strategies to support holistic development in bilingual children.

General Conclusion

General Conclusion

This dissertation has tried to investigate the cognitive development of the Algerian bilingual children in the Netherlands. The study focused on their language acquisition and use with wider impacts on their cognitive and social development due to the bilingual setting. By utilizing relevant research instruments, the paper was able to give a general overview of the linguistic behavior and attitude of the sample.

This study focused on the linguistic ecology concerning bilingual Algerian children who are staying in the Netherlands, both at home and in public. The study also looked into the issues of the major and minor languages spoken, the domains of use for both languages, the attitude of parents toward bilingualism, the cognitive and social effects of bilingualism on these children, and the problems their families face.

The given study has presented how the bilingual Algerian children residing in the Netherlands manage different languages. Mainly, the children spoke AA while staying at home; however, they utilized Dutch when communicating with their Dutch peers. Parents believe that being good in Arabic and Dutch is crucial for kids because it develops their cognitive potentials and helps in getting better opportunities in the future. However, there were other challenges that existed, such as mixing languages and speaking Dutch slowly.

These findings importantly have influenced the current views of the researcher regarding bilingualism in a multicultural context, in that during the study, it appeared that in reality, language use is very context-dependent. This has highlighted how adaptable and flexible bilingual children can be in order to communicate easily using different languages depending on their social environment. The strong emphasis that parents place on sustaining both Algerian and Dutch language proficiency testifies to the significance of cultural identity and cognitive benefits that make them believe that bilingualism is indeed an intrinsic part of the child's development, rather than a purely

practical skill. Furthermore, the identified issues gave a lead to the difficulties bilingual families go through, and the researcher was inclined to the significance of friendly supporting educational policies, accommodating resources responding to these special needs. In this respect, the findings of the study have strengthened the view that bilingualism plays an important role in the children's cognitive and cultural development.

The findings of this research added to general knowledge about bilingualism and its consequences regarding cognitive development and social integration. They underlined the need for support which is needed in bilingual environments within multicultural societies. This study is part of international discussions on the advantages of bilingual education and the necessity of policies about linguistic diversity.

The research had several limiting factors: this study only managed to take in 22 parents; it could never be representative of the general population of Algerian families here in the Netherlands. Self-reporting bias may have been an issue since, in the questionnaires, the data relied on the perception of the parents rather than on objective measures. Due to lack of time, the observations were confined to a particular period, and long-term language behaviors or changes in cognitive acquisition may have been missed. Larger samples, diverse samples, longitudinal studies, objective measures of language proficiency and cognitive development, the role of school and policy in sustaining bilingualism, and further exploration of other possible cognitive functions influenced by bilingualism, like problem-solving and memory. With the view that future studies will overcome such limitations, it will reach a comprehensive understanding of bilingualism in the effects it causes on cognitive development across the world's children.

The present dissertation develops evidence that bilingual Algerian children in the Netherlands acquire specific patterns of language use influenced by the multiculturalism surrounding them. Bilingualism offers several advantages concerning

cognitive development and social integration, yet also involves serious difficulties. This paper investigates a linguistic phenomenon that will affect not only the cognitive development of an individual but also carry wider benefits for society in general, such as increased intercultural understanding and communication.

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Appendices

I. Note taking:

Observation Checklist: Notes to Obtain During Language Use Observation

1. Home Environment

1. Participants' demographics (age, gender, etc.)
2. Primary language(s) spoken at home.
3. Frequency of language use:
 - Algerian Arabic
 - French borrowings
 - Dutch
4. Context of language use:
 - Family interactions.
 - Specific situations or activities.
5. Presence of code-switching.

2. Public settings

1. Participants' demographics (age, gender, etc.)
2. Language use with Algerian peers and family.
 - Frequency and context of Algerian Arabic use.

Presence of French borrowings.

3. Language use with Dutch peers.

Frequency and context of Dutch use.

4. Instances of code-switching between languages.

5. Social dynamics influencing language choice.

6. Observed reactions of peers to language use.

● **General Notes**

- Any notable patterns in language use across different contexts.
- Contextual factors influencing language choice.
- Observed challenges or difficulties in language use.
- Any additional observations relevant to the study's objectives.

II. The Questionnaire:

Questionnaire for Parents of Algerian Bilingual Children in the Netherlands

Section 1: Demographic Information

1. What is your relationship to the child?

- Parent
- Guardian
- Other (please specify)

2. How many children do you have in total?

3. What are the ages of your children?

4. What is the primary language spoken at home?

- Arabic

- Dutch
- French
- English
- Tamazight

5. What is the secondary language spoken at home?

- Arabic
- Dutch
- French
- English
- Tamazight

Section 2: Language Use and Proficiency

1. Which languages do you speak fluently?

- Arabic
- Dutch
- French
- English
- Tamazight

2. Which language(s) do your children speak fluently?

- Arabic
- Dutch
- French
- English
- Tamazight

4. In which language(s) do you typically communicate with your child?

- Arabic
- Dutch
- French
- English
- Tamazight

5. How often do you and your child communicate in each language?

- Arabic
- Very often
- Often
- Sometimes
- Rarely
- Never

- Dutch
- Very often
- Often
- Sometimes
- Rarely
- Never

- French
- Very often
- Often
- Sometimes
- Rarely
- Never

- English
- Very often
- Often
- Sometimes
- Rarely
- never

- Tamazight
- Very often
- Often
- Sometimes
- Rarely
- never

Section 3: Language Environment

1. Are there specific contexts or situations in which you use one language over another with your child? If yes, please describe.

2. How often do you expose your child to Algerian culture and language outside the home environment?

- Very often
- Often
- Sometimes
- Rarely
- never

Section 4: Attitudes and Beliefs

1. How important is it for your child to maintain proficiency in both Algerian and Dutch languages?
2. What are your beliefs about the benefits of bilingualism for your child's cognitive development and future opportunities?
3. Have you encountered any challenges or concerns related to raising your child bilingually in the Netherlands? If yes, please describe.

The Linguistic and Cognitive Development of Bilingual Children: A Study on the Algerian Bilingual Children Living in the Netherlands

المخلص:

يتناول هذا البحث موضوع التطور اللغوي والمعرفي للأطفال الجزائريين ثنائيي اللغة المقيمين في هولندا. تهدف الدراسة إلى استكشاف كيفية تأثير ثنائية اللغة على اكتسابهم للغة ونموهم المعرفي، مع فحص التفاعل بين مهاراتهم في اللغتين العربية والهولندية. كما تسعى إلى فهم تأثير البيئة الثنائية اللغة على مرونتهم المعرفية وقدراتهم على حل المشكلات وهويتهم الثقافية. من خلال التركيز على هذه المجموعة المحددة، يهدف البحث إلى تقديم رؤى حول الآثار الأوسع لثنائية اللغة في البيئات متعددة الثقافات، مما يساهم في استراتيجيات التعليم وصنع السياسات للأطفال ثنائيي اللغة.

الكلمات المفتاحية: ثنائية اللغة، تطور اللغوي، تطور المعرفي، الأطفال الجزائريون ثنائيي اللغة، هولندا.

Summary :

This research work deals with the issue of the linguistic and cognitive development of Algerian bilingual children residing in the Netherlands. The study aims to explore how bilingualism influences their language acquisition and cognitive growth, examining the interplay between their Arabic and Dutch language skills. It also seeks to understand the impact of a bilingual environment on their cognitive flexibility, problem-solving abilities, and cultural identity. By focusing on this specific group, the research aims to provide insights into the broader implications of bilingualism in multicultural settings, contributing to educational strategies and policy-making for bilingual children. translate to arabic.

Keywords: Bilingualism, Linguistic development, Cognitive development, Algerian bilingual children, Netherlands.

Résumé :

Cette recherche aborde la question du développement linguistique et cognitif des enfants bilingues algériens résidant aux Pays-Bas. L'étude vise à explorer comment le bilinguisme influence leur acquisition linguistique et leur croissance cognitive, en examinant l'interaction entre leurs compétences linguistiques en arabe et en néerlandais. Elle cherche également à comprendre l'impact d'un environnement

bilingue sur leur flexibilité cognitive, leurs capacités de résolution de problèmes et leur identité culturelle. En se concentrant sur ce groupe spécifique, la recherche vise à fournir des perspectives sur les implications plus larges du bilinguisme dans des contextes multiculturels, contribuant ainsi aux stratégies éducatives et à l'élaboration de politiques pour les enfants bilingues.

Mots-clés : Bilinguisme, Développement linguistique, Développement cognitif, Enfants bilingues algériens, Pays-Bas.