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Effects of early multilingualism on child development and implications for primary education

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Linguistic diversity of the student population has been identified as one of the urgent challenges that educators of the 21st century need to respond to. As classrooms become linguistically and culturally richer, there is an evident need for increasing teacher awareness on the issues of multiculturalism and linguistic diversity.

Being brought-up in a multilingual environment inevitably impacts a child’s linguistic, cognitive and sociocultural development. Educators need to better understand the unique developmental trajectory of multilingual children to be able to leverage their strengths for academic success. This study investigates the effects of early multilingualism on different aspects of child development and examines the implications these effects have for primary education settings. A list of recommendations has been summarized towards providing higher quality and more equitable education for the linguistically diverse children.

Fostering equity education for multilingual children is a step further towards our global mission of educating the full range of children to become citizens not only of their linguistic and cultural groups, but of the world at large.
Contents

1 Introduction .......................................................................................................................... 4

2 Language acquisition and multilingualism ........................................................................ 6
   2.1 Theories of language acquisition ................................................................................. 6
   2.2 The process of language development ....................................................................... 10
   2.3 Multilingual language acquisition ............................................................................ 12

3 Effects of multilingualism on child development ............................................................... 16
   3.1 Linguistic development .............................................................................................. 16
   3.2 Cognitive development .............................................................................................. 19
   3.3 Sociocultural development ....................................................................................... 21

4 Implications of multilingualism for primary education .................................................... 25
   4.1 Language proficiency and academic achievement ..................................................... 25
   4.2 The monolingual mindset of education ...................................................................... 28
   4.3 Fostering equity education for multilingual children ................................................. 31

5 Conclusion .......................................................................................................................... 35

References .............................................................................................................................. 39
1 Introduction

Language acquisition and development in children has drawn much academic attention leading to thousands of studies from a variety of disciplines. Nevertheless, while most people in the world grew up in multilingual environments, only about 2% of basic research on language development includes children learning two languages (Fernald, 2006, p.19). Globalization and mobility trends are continuously increasing the number of children growing up outside their countries of origin or in culturally mixed families, augmenting the linguistically diverse student population also in traditionally monolingual societies of the West. Consequently linguistic diversity has emerged as “one of the urgent challenges facing 21st century educators” (He & McKenna, 2005, p.274).

Students from diverse linguistic backgrounds have historically been overrepresented in special education classes and low-performance tracks and achieved lower rates of school completion and university enrollment (Garrick Duhaney, 2005). In the past such results were used as evidence of disadvantageous effects of multilingualism on cognitive development (Cummins & Swain, 1986). Recent attempts try to shift the responsibility away from features of the multilingual child and onto features of our educational practices. Teachers’ limited experience with linguistic and cultural diversity coupled with low awareness on issues of discrimination and racism is being problematized (He & McKenna, 2005, p.275).

Academics and practitioners are advocating for more research on multilingualism and better links between research and practice, calling for educational researchers to read findings on multilingualism from other disciplines and investigate its implications for everyday life in the schools (Crago, 2006, p.154). Developing multilingual and multicultural awareness among teachers to aid them in accommodating the needs of all their students is considered an issue of “increasing urgency” (He & McKenna, 2005, p.275). At a time when equal educational opportunities for all are a global imperative, there is an evident need to better understand our multilingual students and provide them with high quality educational support to reach their full potential.

This study is motivated by such need and it aims to answer the following questions: (a) how does early multilingualism affect a child’s development; and (b) what implications do these effects have for the education of multilingual children.
A number of issues have been subject of disagreement in defining multilingualism, such as the number of languages involved; the degree to which these languages should differ from each other; the prerequisite proficiency for one to be considered a multilingual; and the age cut-off point for it to be considered simultaneous versus subsequent acquisition of the languages (see for example Hornby, 1977; Cantone, 2007; Unsworth, 2013). A full review of this definitional debate is beyond the scope of this study. Here I align with Unsworth (2013) definition of considering multilingualism as user proficiency in two or more languages. The term “early multilingualism” refers to what is sometimes found in literature as “multilingual first language acquisition” and is defined as exposure to and usage of two or more languages by the child starting anywhere between birth to the age of three (Unsworth, 2013).

Answers to the research questions are attempted through an integrative review of relevant studies from a number of disciplines including neuro- and sociolinguistics, psychology, sociology, and education. Integrative literature review is defined as a study that “reviews, critiques and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated” (Torraco, 2005). Given the wide range of studies on the multilingualism phenomenon, this synthesis is far from including the whole collection of representative literature on the topic. Instead, it represents a mere attempt to look at some of the most prominent work that has shaped our thinking about multilingual language development over the years.

The following chapter starts with a brief overview of the different theoretical paradigms that attempt to explain the process of language acquisition and continues with a description on how language develops first in monolingual and then in multilingual children. In the third chapter I review studies that have examined the effect of multilingualism on a child’s linguistic, cognitive and socio-cultural development. Chapter four outlines the implications of such effects for education in a primary school setting by exploring the link between language proficiency and academic achievement and presenting research evidence on the monolingual norm of educational practices. Section 4.3 focuses on how to improve the education of multilingual students by providing various recommendations, a bullet-point list of which has been further summarized in the conclusion.
2 Language acquisition and multilingualism

The process how children learn the languages of their communities has fascinated thinkers since antiquity drawing a vast amount of research from a variety of disciplines. In this chapter I give a brief overview of the main theoretical paradigms that have attempted to explain the language acquisition process and describe the milestones in a child’s language development as accounted for in the research. In the last section I review research on the process of acquiring simultaneously two or more languages, focusing especially on how the developmental path of multilingual language acquisition differs from the monolingual counterpart.

2.1 Theories of language acquisition

The classical debate of nature versus nurture in human development theories naturally is also present in the area of language acquisition. Advocating for the impact of innate genetic influences of our species in the process of learning the language, the nativist perspective opposes the learning theory approach that credits the nurturing factors of the environment for this development. Interactionist approaches position somewhere in the middle of these two extremes.

Learning theory approach

B. F. Skinner (1904-1990) was one of the most prominent psychologist of his time who was greatly influenced by Ivan Pavlov’s work on physiological conditioning and extended that experimental work to behavioral conditioning and claimed that human behavior could also be predicted and controlled by mechanisms of stimuli and reinforcement. In 1957 Skinner published ”Verbal Behavior”, a book on which he had been working on for over twenty years and in which he argued that conditioning could also explain language behavior and language acquisition (Skinner, 1957). To illustrate, when a child hears the word “book” and a red book (stimuli) is pointed at, the child may repeat the word (response). She gets praised for this behavior (positive reinforcement). If the child points to a red hat and says “book”, she has misunderstood the reference, thinking the word she is pronouncing refers to the color, instead of the object. She is corrected by the adult “No, that is not a book” (negative reinforcement). Such continuous reinforcement helps the child to understand the relationship between the word and the referent and she will eventually say “book” only when the book object is present as a stimuli (Skinner, 1957).
According to Skinner’s interpretation, children acquire language by being exposed to stimuli of different objects, and storing in the memory the labels these objects are given by the language users around them. A very early account of philosopher St. Augustine (354-430 A.D.), collected long before linguistics had emerged as a field, seems to confirm this view:

“When they named any thing [sic], and as they spoke turned towards it, I saw and remembered that they called what one would point out by the name they uttered… And thus by constantly hearing words, as they occurred in various sentences, I collected gradually for what they stood; and having broken in my mouth to these signs, I thereby gave utterance to my will.” (quoted in Cole & Cole, 2001, p.313).

Skinner would argue that positive and negative reinforcement are then guiding the child as she is making use of that memory storage she has collected. Many adults who have witnessed the joy a toddler takes in his mother’s expressed delight as he says “ma-ma” and wants to repeat the game over and over again may align with Skinner on this idea. In fact, the notion that parents teach their children first words, then phrases, then sentences and so on is still a popular idea among the non-linguistic population (Cattell, 2000, p.30-31).

Moving away from a learning model where new behaviors—including language—were acquired gradually through the mechanisms of reward and punishment of random trial-and-error performances, Albert Bandura was the first to position the social cognitive theory apart from behaviorism theories, arguing that external stimuli could not fully explain human behavior, but rather inner and environmental factors were both interacting determinants of each-other (Bandura, 1986, p.18).

In addition to conditioning, imitation plays also an important role in language acquisition. Research on lexical acquisition of children between 16-24 months has shown imitation facilitates children’s ability to acquire words (Leonard, Chapman, Rowan, & Weiss, 1983). Pondering upon the mechanisms how imitation facilitates the language acquisition process, Bandura (1986, p.100-102) used the term abstract modeling, in which the learner does not just imitate the observed behavior, but instead extracts the abstract, general rules that underlie the modeled action. So, when hearing a sentence such as “Two cats were lying under the table”, the language acquiring child subconsciously abstracts the rule that plural forms are developed by adding “s” to the singular form cat/cats. She then uses these rules in her own production of language and may say “two mans are sitting on the sofa,” even though she has never heard a sentence like that and cannot possibly be relying on simple imitation.
Nativist approach

In 1959 Noam Chomsky wrote a review of Skinner’s “Verbal Behavior” in which he argued that the mechanism of operant conditioning through stimuli, response and reinforcement could not possibly account for human language acquisition (Chomsky, 1959), starting this way the often-called era of Chomskyan revolution (Cattell, 2000, p.62). Chomsky argues that humans are born with the propensity to acquire the language and the principles through which language is comprehended and understood are unlike those of any other human behavior (Chomsky, 1986). These same views are echoed also by Steven Pinker (Pinker, 1994) who describes language as a “distinct piece of the biological make-up of our brains… distinct from more general abilities to process information or behave intelligently” (p.18).

The argument that children produce complex structures that they have never heard before, implementing this way principles of logic that go far beyond their cognitive development supports the nativist view of language acquisition and development. For instance, a 4-year old fails to understand the concept of the preservation of mass as demonstrated by Piaget’s experiment of pouring the same amount of liquid into a taller and thinner glass, and yet she is perfectly capable of understanding the pronoun referents of English language despite its complexity (Chomsky interview cited in Cattell, 2000, p.80).

Chomsky differentiates between the surface structure of the language and the deep structure of the linguistic system. For him, the first refers to the language produced by people and as such it varies greatly depending on the language spoken. The second however, refers to the basic set of grammatical rules that are shared by all languages. According to Chomsky we are genetically programmed to recognize these universal grammar rules that make up the deep structure of the linguistic system. This genetic code enabling such recognition is dubbed by Chomsky as the language acquisition device (LAD). LAD is in an embryotic stage at birth and matures as the child interacts with the environment to enable the child to comprehend and produce the language that she hears. (Chomsky, 1986).

Those who align themselves in the nativist paradigm of language acquisition may therefore believe that there is no such thing as “teaching the language” and deem language acquisition to be only minimally influenced by the environment. However, such claims should not be taken to the extreme of deeming the environmental influence altogether as unimportant. Chomsky himself deemed interaction with the environment as crucial for the activation of the LAD and
acknowledged that “children acquire a good deal of their verbal and non-verbal behavior by casual observation and imitation of adults and other children” (Chomsky, 1959, p.18).

**Interactionist approach**

Whereas the nativist and learning theory approaches are on opposing ends in the spectrum of theories that try to account for language acquisition, interactionist approaches attempt to draw from both these ends in an attempt to gain better and deeper insight. While this attempt at building bridges is common among interactionist theorists, they differ widely in the mechanisms they suggest are in place for connecting the nature and nurture elements together in the process of lingual development. In general, interactionists agree with the nativists that innate features of the human nervous system enable language acquisition. However, they disagree with the nativist consideration of language as a “distinct piece… of our brains” (Pinker, 1994, p.18), arguing that lingual development is just another aspect of cognitive development (for example Bates, 1999) on the one hand and socio-cultural growth (for example Bruner, 1982) on the other.

A thinker that seems to have influenced the interactionist approaches on language acquisition is the Swiss psychologist Jean Piaget (1896-1980). Having dedicated his lifetime to the development of a theory on the stages of cognitive development of children, Piaget did not explicitly talk about the language acquisition in children in his theory. However, he did participate in a very famous and much-cited debate with Noam Chomsky in Paris in 1975, where Piaget explicitly challenged Chomsky’s views on linguistic principles being innate (Cattell, 2000, p.78-82).

Theorists working in the Piagetian paradigm see language acquisition as enabled by and indeed part of the cognitive changes developed by Piaget. For instance, Alison Gopnik and Andrew Meltzoff (1997) suggest that children start producing their first words around the age of 18 months, which coincides with the development of their ability to reason systematically about the displacement of hidden objects and combine their actions to achieve a desired goal. Consequently, they also develop the vocabulary to talk about events beyond what they are experiencing at the moment (Gopnik & Meltzoff, 1997).

However, Chomsky argues that grammar complexity mastered by children outstretches by far their cognitive development (Cattell, 2000, p.80). Elisabeth Bates (1999) has attempted to explain how cognitive development enables children to expand their vocabulary, which in return
leads to them developing the complex grammar structures. She uses the beehive allegory to explain the phenomenon: as bees attempt to store their honey, they secrete wax and push it with their round heads against the wax created by the other bees. When round structures are packed together in as small a space as possible, hexagons are inevitably created. Bees, she argues, certainly poses the genes to give the round shape to their heads, but not the genes to build hexagons. Similarly, Bates concludes, as the child vocabulary expands, complex grammar inevitably follows as a “solution to the problem of mapping a rich set of meanings onto a limited speech channel” (Bates, 1999, p.3). Bates (idem) supports her argument with research evidence showing the high positive correlation between vocabulary growth and grammar complexity development in children.

For other interactionists this emphasis on the cognitive development, while true, it may suffer from oversimplicity if it leaves out the role of the cultural context in the development of the language. These views are expressed best by Jerome Bruner (1982):

“Language acquisition cannot be reduced to either the virtuoso cracking of a linguistic code, or the spinoff of ordinary cognitive development, or the gradual takeover of adults’ speech by the child through some impossible inductive tour de force. It is, rather, a subtle process by which adults artificially arrange the world so that the child can succeed culturally by doing what comes naturally, and with others similarly inclined”. (Bruner, 1982, p.15).

While accounting for one of the most fervent academic debates of the 20th century, all these theories of language acquisition acknowledge that the environment a child grows in, including the adults the child is surrounded by, have an influence in the child’s lingual development.

### 2.2 The process of language development

Despite the great attention from the academic circles, the process of language acquisition is still poorly understood. It has been clear that linguistics alone cannot explain the process fully and a multidisciplinary approach comprising sciences of linguistics, biology, sociology, psychology, philosophy and education is needed instead (Hornby, 1977, p.8). And this multidisciplinary approach has still not been able to solve the two main puzzles identified in the process of language development: identifying the referent and abstracting grammar rules (Cole & Cole, 2001, p.296).
Each word refers to a real or imaginative object or a relationship in the world and children have to figure out which word is referring to what. For instance, as a picture is pointed from a book and a word is uttered to accompany the pointing such as “rabbit”, the word could be referring to the animal, to its color, to its name, etc. The child becomes able to draw the right word-referent associations despite all this confusion. (Miller, 1991, p.11).

In addition to the relationship between a word and its referent, the relationship words form with each other is also important to master for multi-word utterances to make sense. Research shows that from a very early age of seven months babies are sensitive to word order in sentences and can already abstract the general patterns governing such order. (Marcus, Vijayan, Bandi Rao, & Vishton, 1999).

Language is often seen as a composition of four different elements closely intertwined to make up a holistic system: sounds, words, sentences as word combinations, and finally language use. The ability to distinguish between the basic sounds of their language is present even in the newborn children (Kuhl, 2004). During the first year children switch from babbling into ordering the sounds in such a way that it resembles the language of their community (Kuhl, 2004). The acquisition of words varies widely in individual children, but some generalizations show that children can produce about 10 words by the age of 13-14 months, 50 words by 17-18 months, and 200-300 words by their second birthday, whereas the amount of words they understand is far greater, reaching already over 100 by the age of 14 months (Fenson Larry et al., 1994).

A child’s first sentences are two-word utterances starting already by the end of their first year and during the second year both vocabulary and grammatical complexity of children’s sentences grow explosively (Cole & Cole, 2001, p.306-307). But mastering sounds, words and sentences is still not the full story to language development. Children must also develop the ability to use language for pragmatic purposes of achieving certain goals. They learn to use language to establish relationships with others or to direct others’ actions. They also have to develop the ability to take into account the listener’s point of view in order to make communication successful (Cole & Cole, 2001, 309-313).

As children engage in the daily life of their communities and are exposed to new words, they seem to acquire these words rapidly with little effort. Research contradicts the idea that such learning is promoted by positive reinforcement like behaviorists would claim, as children would take into use a new word even in the absence of reward for doing such. Instead, as children hear
a new word in an otherwise structured and familiar context, they form a quick idea of its meaning, something psychologist refer to as “fast-mapping.” (Kucker, McMurray, & Samuelson, 2015).

Developmentalists have identified certain cognitive principles that make fast-mapping possible, such as (Cole & Cole, 2001, p.323):

- the whole object principle: when children hear a word associated to some object, they assume the word applied to the whole object rather that to parts of it.
- the categorizing principle: labels extend to similar objects.
- the mutual-exclusivity principle: children make the one object-one word connection and when they hear a new word they assume it applies to the new object in the context, excluding the possibility it may refer to other objects present that are already familiar to them.

It is therefore clear that children have the biological predisposition to learn and use language and they acquire it as they are exposed to the language use of their communities and interact to become members of these communities. One might wonder if this is a fully child-led activity and there is nothing else parents and teachers can do to facilitate the process, except for engaging children in activities where language is used. Research findings trying to examine the effects of deliberate instruction (in the form of grammar correction feedback, for instance) on language acquisition are contradictory making it hard to conclude on the topic (Cole & Cole, 2001, p.326). However, there is research evidence that language exposure is positively correlated with vocabulary growth (Weisleder & Fernald, 2013). And as Bates (1999) showed that vocabulary growth is accompanied by enhanced grammatical complexity, one could also derive an indirect effect of language exposure on grammar efficiency.

2.3 Multilingual language acquisition

The study of language development in infants acquiring two languages simultaneously from birth has a long history. The first scientific account on such has been provided by Ronjat in 1913 and between 1939 and 1949 Werner Leopold published in volumes the longitudinal study on the language acquisition of his German-English bilingual daughters. As Leopold was a linguist, his data recording and analysis are remarkably thorough, making his work a truly monumental study in the field of infant bilingualism. Subsequent studies on the matter remained quite scarce until the 80s, when a renewed attention on the matter gave rise to an unprecedented
number of studies on bilingual first language acquisition. At least partially, this may be explained by the popularity of the academic debate between the behaviorists and interactionists with the nativist thinkers on language acquisition theories. The study of multilingual first language acquisition is supposed to shed light on some fundamental aspects of the language acquisition in general. (Genesee, 2006, p.45).

When studying bilingual first language acquisition (BFLA) researchers are interested to examine how the language developmental trajectory of bilingual infants compares to that of monolinguals, and whether the language development milestones are similar between the two groups. The conclusions of these studies need to be interpreted with a grain of salt for several reasons. First, the sample of studies on bilingual infants remains rather small and is mostly composed of case studies, and secondly there are large variations among bilingual as well as monolingual children, which makes the arraying of the developmental milestones a challenging task. (Genesee, 2006, p.51).

Maneva and Genesee (2002) studied the babbling of a French-English bilingual infant to examine whether the phonological development during the pre-verbal stages of bilingual language acquisition is time-wise in line with that of monolingual infants or whether simultaneous exposure to two different languages causes a delay in this phonological development. They concluded that the child was developing the language-specific features at the same age range as that attested in monolingual children. The first words and word combinations bilingual children are also recorded to appear at the same age as that of monolinguals (Petitto et al., 2001). So, in terms of the typically-observed language development milestones, such as first babbling, first words, etc. research does not show systematical signs of either delay or acceleration in acquisition by bilingual first language learners (Genesee, 2006, p.51).

Looking beyond these basic milestones and more importantly asking not whether the language development of bilinguals is delayed or accelerated but rather whether the developmental trajectory is similar in nature to the monolingual development, we might get a different answer.

Research conducted with monolingual infants shows that from as early as two days of age, children discriminate between their mother tongue and an unfamiliar language with a different basic rhythmic structure by showing auditory preference (for instance turning the head towards, or exhibiting longer listening times) for their mother tongue (Moon, Cooper, & Fifer, 1993). When speech perception research has been replicated with bilingual infants, they have
been orienting towards either language more slowly than monolinguals and oriented to the maternal language slower than to the unfamiliar language, which was unexpected (Bosch & Sebastián-Gallés, 1997). Also, the mutual-exclusivity principle that facilitates language learning in monolingual children (see section 2.2) is found to be not equally developed in multilingual toddlers (Houston-Price, Caloghiris, & Raviglione, 2010). Some research has shown that monolingual infants who were making slower progress in discriminating phonological categories during their first year, showed also slower rates of vocabulary acquisition in their second year (Tsao, Liu, & Kuhl, 2004). At a fast glance, combining these findings would lead one to conclude that exposure to a bilingual environment seems to predict a slower lexical growth compared to monolinguals.

However, Anne Fernald (2006) warns against jumping to such conclusions. In her opinion, the language environment of the bilingual children has not been taken into account enough in these studies. Bilingual children’s environment often makes it so that they are exposed to various languages spoken by non-native speakers of those languages that bring into their speech certain accents and different ways of pronunciation. This might account for the indiscriminatory behavior of phonological categories of bilingual infants. As a result, we cannot see the bilingual children as “two monolinguals in one” and extend research findings derived from the study of the monolinguals to predict the lexical growth in bilingual first language learners. (Fernald, 2006).

One conclusion that seems fair to make based on these studies however, is that bilingual infants’ language development trajectory is unique (Fernald, 2006; Vihman, Lum, Thierry, Nakai, & Keren-Portnoy, 2006, p. 41-42; Werker, Weikum, & Yoshida, 2006). Evidence for this different developmental path is also echoed in the Yip and Mathews (2000) study who state that “bilingual data show both qualitative and quantitative differences from monolingual data” (p. 207). Studying a Cantonese-English bilingual child, they found a developmental stage for certain interrogatives and pronominal relatives that Cantonese monolinguals to not exhibit and a much higher frequency of null-objects in English compared to that of the English monolingual speakers. They concluded that bilingual children take a different path from the monolinguals in both their target languages.

Studies in trilingual first language acquisition are scarce and trilingualism is often in research seen as an extension to bilingualism, although differences are acknowledged between the two.
In studying trilingual first language acquisition researchers draw on the research findings on bilingual first language learners. (Unsworth, 2013).
3 Effects of multilingualism on child development

Since the early 1900s academics from various disciplines have been interested in how the acquisition of multiple languages from infancy affected the development of the child. A vast amount of research has been conducted to explore how the development of multilingual children differs from that of the monolingual peers. In this chapter I look at some of the most prominent studies that over the years have shaped our thinking on the effects of early multilingualism on a child’s linguistic, cognitive and socio-cultural development.

3.1 Linguistic development

Children learning multiple languages from early childhood will initially develop a unified language system. They will start to sort out the two separate languages at the age of 3 and the clear separation of the two languages may occur around the age of 7 (Albert & Obler, 1978, p.42). Volterra and Taeschner (1978) proposed a three-stage model of the lingual development in bilingual first language learners: in the first stage children think of the two languages as one language system and develop their lingual competences like a monolingual child but mixing between the two sets of lexical elements; in stage two the child differentiates between the two lexical systems of languages but has one system of syntactic rules; in stage three both the lexical and syntactic systems of the respective languages are differentiated.

This is a much cited and referred to model in bilingual language acquisition studies. The model is much criticized both on theoretical and especially on empirical grounds. On the theoretical level, some academics point out that the model leaves many questions unanswered, such as the age gaps between the stages, the real notable differences between stages two and three, and whether the third stage is indeed a final development stage in language acquisition. Furthermore, empirical evidence has refuted the study as some researchers believe that language differentiation occurs already from the very beginning and the mixed lexical and semantic systems are examples of linguistic interference, rather than evidence of failure to differentiate the languages. (Cantone, 2007, p. 8-10).

The famous linguist Otto Jespersen would describe the lingual development of a bilingual child in 1922 as follows:

“It is, of course an advantage for a child to be familiar with two languages: but without a doubt the advantage may be, and generally is, purchased too dear. First
of all the child in question hardly learns either of the two languages as perfectly as he would have done if he had limited himself to one. It may seem, on the surface, as if he talked just like a native, but he does not really command the fine points of the language…” (quoted in Grosjean, 1982, p.220).

For many decades research seemed to back up these concerns. A literature review conducted by Jensen in 1962 summarized all the negative effects of child bilingualism on language development that had been found until then: smaller active and passive vocabulary, confused and mixed vocabulary, less complex sentences, misuse of idiomatic expressions (cited in Arnberg, 1987, p.26). Furthermore, Darcey reviewed in 1953 studies on the effects of bilingualism on cognition and found that while there is no difference in the non-verbal cognition, bilinguals score lower in verbal tests of intelligence (cited in Ben-Zeev, 1977).

Several explanations have been offered for such unfavorable development, including the underdeveloped mutual-exclusivity principle (i.e. as bilingual children hear two words corresponding to the same object, they do not develop the one object – one word association) (Houston-Price et al., 2010); the more limited exposure to each language due to time split between two languages (Arnberg, 1987, p.26); and different aspects of bilingual development, such as language mixing, code-switching, and interference.

Language mixing refers to the phenomenon of mixing words and utterances of language A into the language context of language B. Whereas all empirical studies of bilingual language acquisition report language mixing to a large extend in the early stages of language development, there is disagreement among academics on the reasons behind this mixing that is usually explained through a “lack of” rhetoric: lack of pragmatic competence (not capable of separating the languages), lack of lexical competence (underdeveloped vocabulary in one of the languages leads to borrowing from the other language), lack of grammatical competence (structures learned in one language will overspill into the other language). (Cantone, 2007, p. 13-14).

Code switching is defined as “the juxtaposition within the same speech exchange of passages of speech belonging to two different grammatical systems or subsystems” (Gumperz 1982, quoted in Cantone, 2007, p. 54). More simply put, code-switching refers to the switching back and forth between two languages that are considered as separate and autonomous from one another (Garcia et al., 2016, p.20). Seen often as evidence of a lack of linguistic competence, code switching has been widely stigmatized (Cantone, 2007, p. 54; Garcia et al., 2016). Although code-switching can at times be seen as an effective means of communication by the
multilingual speakers, it has been argued that when used by parents of children who are in the process of learning multiple languages, code-switching may delay the child’s learning to recognize which words belong to which language (Arnberg, 1987, p.27).

Language interference is described as the involuntary influence of one language on the other. It is increased by the imbalance of the languages and can be helped by increasing the child’s exposure to the weaker language. Examples of such can be noticed in pronunciation, words and idiomatic expressions, and in the sentence level. (Arnberg, 1987).

The definitions above tried to represent a somewhat general account on the phenomena, but it must be noted that there is disagreement among the researchers about how to differentiate one phenomenon from the other. Researchers have also been interested on the effects of bilingualism on further language learning. The results of such studies are mixed, reporting anything from negative, to inexistent, or positive correlations (Arnberg, 1987).

Despite all the controversy present in the field, going beyond the technical definitions, many would conquer with the linguistic influence of bilingualism as described by Garcia et al. (2016, p.17):

“when bilingual students engage with texts, they do so while drawing on all their linguistic resources, even if the texts are rendered only in… [one] language…When bilingual students write or create something new, they may filter certain features of their linguistic repertoires to create the product, but the process will always be bilingual…The linguistic features of what are considered two languages function in interrelationship and adapt to the communicative circumstance at hand… [the student] deploys all the features of her entire language repertoire to communicate and make meaning, thus transgressing traditional societal and national definitions of what language should be and the ways in which language should be used”.

Such a position is not new. Grosjean stated as early as in 1989 that bilinguals should not be viewed as two monolinguals in one person (Grosjean, 1989). This is further elaborated in section 4.3.
3.2 Cognitive development

Traditionally it was believed that having two linguistic systems within one’s brain naturally divides a person’s cognitive resources reducing his efficiency of thought. Literature before the 1960s showed that compared to monolinguals bilingual children had lower measured intelligence, were behind in school, and more prone to social deviance. These studies failed to control for social and class backgrounds and paid little attention to how comparable the monolingual and bilingual groups actually were. However the results were clear: the largest proportion showed bilingualism to have a detrimental effect on intellectual functioning, a smaller number reported no link between bilingualism and intelligence, and only two studies suggested bilingualism may have favorable effects on cognitive development. (Lambert, 1977, p.15-16).

Finding negative effects of bilingualism on cognition was not limited to before the 60s. Tsushima and Hogan (1975) found 4th and 5th grade Japanese-English bilinguals to significantly underperform in language and academic skills a group of monolinguals who had the same nonverbal IQ scores. Similarly, Skutnabb-Kangas and Toukomaa (1976) performed standardized tests with the children of Finnish immigrants in Sweden and found that their language skills both in Swedish and Finnish tended to be below the average skills of their monolingual peers. These effects were especially true for children who migrated before the age of ten and as a result had their Finnish mother tongue underdeveloped when they started learning Swedish.

In early 70s multiple studies from all over the world showed that bilingualism has a significant positive effect on the structure and flexibility of thought, or measures of “cognitive flexibility”, “creativity” and “divergent thought” (Lambert, 1977, p.16). Tests measuring divergent or creative thinking do not require the test subject to provide one correct answer, but rather measure the number and variety of the given answers. One of the most popular tests in this area is the “Uses of an object” test, which asks questions such as “How many uses can you think of for a cardboard box?” (Baker, 2001, p. 144-145). Through such tests, creative thinking abilities are measured through fluency (the number of different acceptable answers given), flexibility (the number of different categories covered by the answers), originality (the statistical infrequency of the answers provided), and elaboration (extent of extra detail given beyond the basic object uses). Empirical research supports the hypotheses that having two or more words corresponding to the same object, increases the flexibility and freedom of association in bilinguals, making them score higher that comparable monolinguals in tests of divergent thinking. (Baker, 2001, p.146).
Furthermore, multiple labels for the same object help bilinguals realize the arbitrariness of language at an earlier age compared to monolinguals. They become better at separating word meaning from its sound, for instance. This was first suggested by Werner Leopold and then tested by Ianco-Worrall (1972) who found that 4-6 year old bilinguals asked whether the word “can” or “hat” is more like “cap” are more likely to choose “hat” compared to their monolingual peers who judge by the sound and as a result answer more often “can”. Similarly, bilingual children perform better in Symbol Substitution Tests which substitute one word for another, such as interchanging words “sun” and “moon” or “cow” with “dog”, etc. (Ben-Zeev, 1977). Such finding have been interpreted to mean that early bilingualism has a positive effect on the development of the metalinguistic awareness, defined as the “the ability to reflect upon and manipulate the structural features of spoken language” (Baker, 2001, p.149).

In an attempt to make sense of the contradicting findings in this kind of research, Jim Cummins developed the threshold hypothesis, stating that there is a certain level of proficiency in both languages that the bilingual child has to reach for bilingualism to start to have positive rather than negative effects on the child’s cognitive development. Cummins argued that the implications of this theory for educational settings would be to support the child’s bilingual development in both languages so that the threshold level of language proficiency is reached, which then will eliminate cognitive disadvantages and start to express the positive effects of bilingualism on cognitive functions (Cummins & Swain, 1986, p.6). Empirical research seems to support the suggested threshold hypothesis, although inherent methodological challenges should be considered when reading these results (Baker, 2001, p.147).

So what could account for this shift in researchers’ focus when exploring the effects of bilingualism on cognition? I believe the strongest factor has been the political discourse in the background that either consciously or subconsciously has affected the motivation of the researchers. In the years before and after the Second World War, when nationalistic discourse was prominent and monolingualism was seen as an important factor in the strengthening of the national identity and immigrants were expected to assimilate in the major cultural group, bilingualism was discouraged as detrimental for a child’s future. In mid 70s and 80s with the new ideological shifts in postcolonialism and a rhetoric celebrating diversity, a celebratory tone of bilingualism prevailed.
If we look beyond these researcher conscious and subconscious motivations, we must admit that all the studies represent methodological changes that warn against simplistic generalizations. Some of these limitations have to do with definitions and operationalizations of both bilingualism and cognitive skills, others with failing to control for other influencing variables, or failing to properly match between the monolingual and bilingual groups. Establishing the causality direction between bilingualism and cognitive strength is another challenge in these studies. (Baker, 2001, p.137-139).

So, a fair conclusion would seem to be that at present there are no studies that have convincingly shown bilingualism to be either positively or negatively influencing intelligence and it is questionable whether this answer can be reliably answered using the current research methods. Some researchers have long advocated for a shift from studying whether bilingualism affects intelligence positively or negatively, into the nature of effects that bilingualism has on cognitive development (Arnberg, 1987, p.23-24). While there is considerable and strong evidence that bilinguals function differently from monolinguals on a variety of cognitive tests, it has been argued that speaking of “differences in cognitive style” between bilinguals and monolinguals is more appropriate than the cognitive advantage rhetoric (Albert & Obler, 1978, p.248).

3.3 Sociocultural development

“Learning a second language involves far more than the acquisition of a new set of symbols for communication. Aside from a host of potential cognitive and intellectual consequences there are important social consequences as well” (Taylor, 1977, p.68). Studies on bilingualism and socio-cultural development include those exploring effects of bilingualism on identity, personality, and socio-communicative skills.

Examples can be found in literature of bilinguals behaving differently as they switch languages, like an Italian-English butcher who had a matter-of-fact and formal attitude towards his customers in English, but when serving in Italian engaged in jokes and laughter and even mild flirtations with the female customers. Another example is that of an Arabic-French bilingual whose attitude towards women changed drastically with the change of the language: he would be very authoritative or else ignore a woman completely in Arabic, while politely taking her view into account in French. (Grosjean, 1982, p.280).
These anecdotes inspired in the 60s and 70s research that aimed to investigate whether using two languages came with two different personalities. Such studies usually had bilinguals interpret what they saw in TAT cards with ambiguous content, or describe the story behind a given picture, or complete half-given sentences (Ervin-Tripp, 1973). The sessions took part in both languages and were spaced in time (six weeks apart, for instance). In this kind of research, it is believed that as the subjects describe the visual images or complete the given sentences, they project their own feelings, attitudes, motives, so simply put, their personalities. Findings showed that the switch of language indeed led to very different interpretations for most subjects, like some examples show:

(A picture of a figure sitting on the floor with head resting on a sofa)

Japanese: A woman weeps over her lost fiancé and thinks of suicide.

English: A girl tries to complete a sewing project for a class

(A TAT card)

French: She seems to beg him, to plead with him… I think he wants to leave her because he’s found another woman he loves more…

English: I think it was a married couple, average… he keeps on working and going to college at night… he’s very discouraged and his wife tries to cheer him up

(Fill in the sentence: I will probably become…)

Japanese: a housewife

English: a teacher

Such accounts seem to conquer with the Czech proverb “learn a new language and get a new soul”. However, this may be a too far-stretched interpretation. Instead of a change of personality, these should probably be regarded as shifts in attitude and behavior as a result of a shift in context, regardless of the language. So, instead of different personalities, these language changes rather display one personality in different situations, as Ervin (1964, p.506) writes:

“It is possible that a shift in language is associated with a shift in social roles and emotional attitudes. Since each language is learned and usually employed with
different persons and in a different context, the use of each language may come to be associated with shift in a large array of behavior."

Another group of studies on the socio-cultural development of multilinguals focuses on the issues of identity formation. As Donald Taylor states “second language learning will have important implications for ethnic identity” (Taylor, 1977, p.68). The sociolinguistic perspective of bilingualism departs from the purely and strictly linguistic mechanics of bilingualism and puts identity at a more central and clearer focus (Zentella, 2008, p.4). Studies investigating the identity experiences of French-English bilinguals in Canada concluded that there is no reason to believe that becoming bilingual or bicultural necessarily leads to a loss or dissolution of identity (Lambert, 1977, p.19). Zentella (2008, p.4) argues that on the contrary, language knowledge is also accompanied by knowledge of the social customs governing the speech and a bilingual does not become aware of only the lexical and phonological differences between the two languages, but also takes note of the differences in ways of “answering, greeting, leaving-taking, praying and being.” With the necessary support from the community, multilingualism can be the embracing of various identities that need not be exclusive.

Fantini’s (1985) account of his bilingual son seems to conquer with the idea that bilingual children become aware of the fact that some concepts of “right” and “wrong” or what constitutes acceptable behavior are relevant. This can help them become more self-confident, as the example below illustrates:

“Knowledge of the variable behavior of people and their differing attitudes provided him with considerable self-assurance in his own behavior rather than the contrary. One illustration of this was his persistent use of the “mamadera” (baby bottle). Although he was teased and chided by others because he enjoyed the bottle even at the age 5;6, he did not yield to their pressure…holding [the bottle] like a trumpet, he called teasingly to those who laughed at him: “Look, I drink!” He knew that in other places at least (Bolivia and Mexico), drinking from the “mamadera” was perfectly acceptable behavior—even for children this age.” (Fantini, 1985, p. 27).

The experience of bilingualism and biculturalism often makes bilingual children show an early concern for others and relate positively to the other cultures (Fantini, 1985). Such children may be more able to assume the role of others experiencing communication difficulties and perceive their needs and then respond to these needs (Arnberg, 1987, p. 30-31). This was shown by a
study of Genesee et al. (1975) who had monolingual and bilingual children explain a board game to two listeners, one of which was blindfolded. Compared to monolinguals, bilingual children were much more likely to increase the level of detail and information when talking to the blindfolded listener. In addition to being more aware of the listeners’ needs, bilinguals are also more sensitive to both verbal and non-verbal feedback cues they receive from their interlocutor (Baker, 2001, p.153). This communicative sensitivity must have been developed as bilingual children need to be constantly aware of the situational cues instructing when a language switch is appropriate and as a result pay more attention to the social nature and communicative functions of language.
4 Implications of multilingualism for primary education

In the chapters above it has been pointed out that the multilingual language acquisition process seems not to vary from the monolingual language development in the surface, but in fact has its unique nuances when looked at in depth. Furthermore, this early multilingualism affects the child’s linguistic, cognitive, social and cultural development. In this chapter I ponder upon the implications such findings have for educational practices. I first review research on the link between language proficiency and academic achievement. Next I provide research evidence on how educational practices are often built around a monolingual and monocultural mindset and as a result may fail in educating the multilingual child to her highest potential. In the last section I provide a list of recommendations on how education can provide more equal opportunities for the linguistically and culturally diverse multilingual children.

4.1 Language proficiency and academic achievement

In 1980 a very influential study by Oller and Perkins examined what factors explained the wide variance of children’s performance in education. Their conclusion was clear: the single variable of language proficiency carried alone the highest explanatory power. As they expressed it, “the results are… preponderantly in favor of the assumption that language skill pervades every area of the school curriculum even more strongly than was ever thought by curriculum writers or testers” (quoted in Cummins & Swain, 1986, p.142).

Extensive research in the areas of psycholinguistics and educational psychology explores the link between language proficiency and academic achievement (Cummins & Swain, 1986, p.138). Labov (1998, p. 2) has argued that the poor academic achievement of students from the minority groups and low socio-economic class was caused by the fact that these students have different language use patterns compared to the middle-class students. Skills in oral language seem to be correlated with success in the acquisition of reading (Wells & Bridges, 1981).

Furthermore, recent studies are questioning the neurological impairment historically believed to explain learning disabilities (Kavale & Forness, 2000) and the link between learning disabilities and language difficulties is being proven stronger (Winzer, 1998). For instance, students with low skills in phonological awareness are unable to recognize sound segments in spoken words (Turnbull, Turnbull, & Wehmeyer, 2010) and this can lead to reading disorders (Pickering, 2002). Learning difficulties in writing include often challenges in spelling, word usage,
sentence structure, and text structure (Turnbull et al., 2010). Limited vocabulary and inability to absorb the full significance of words leads to challenges in conceptualization, generalization, and abstraction (Winzer, 1998). In addition, a sparse vocabulary often leads to hesitation when speaking and a stumbling over words (Graham, Harris, & Larsen, 2001).

As many of these characteristics resemble those experienced by bilingual children, detecting the difference between a language difference (displayed by students from culturally and linguistically diverse backgrounds) and a language impairment is very difficult, even for well-trained professionals (Smith, 2001). Fantini (1985) reports that the kindergarten teacher recommended his child to a speech therapist due to Spanish language interference in the pronunciation of English, advice which the parents did not take so that not to make the child too aware of his differences at a sensitive age. In time, this interference subsided and the child’s pronunciation was like that of his monolingual peers without any professional help.

A proper theoretical framework connecting language proficiency and academic achievement was not developed until the ‘80s by Jim Cummins. Cummins (1979) distinguished between basic interpersonal communicative skills (BICS) and cognitive academic language proficiency (CALP) in an attempt to have educators realize that while a child may seem fluent in her face-to-face communication, discrepancies in this child’s verbal IQ tests could just be due to low CALP in the language of the test rather than due to retardation in the child. Later Cummins (Cummins & Swain, 1986, p.151-156) developed further this theoretical framework by suggesting a conceptualization of language proficiency along two continua: the horizontal continuum measures the presence of contextual aids in the communication; the vertical continuum measures the degree of cognitive engagement that the communication requires.

To illustrate, on the left extreme of the context-embedded continuum would be engaging in a discussion with a close friend, since the mutual involvement in a shared reality provides enough paralinguistic and situational cues that facilitate the making of meaning. The right extreme of this continuum would probably be the reading of an academic article, since the shared reality between the writer and the reader cannot be assumed and for the communication to succeed an explicit and precise elaboration is imperative. The vertical continuum of cognitive demand would start with language activities that have become quite automatic for the individual and as such do not require a high degree of cognitive involvement while carrying them out (i.e. greeting for a customer service agent) and would continue to activities that stretch one’s linguistic
resources to a maximum in order to achieve communicative goals (such as persuading the interlocutor that your point of view rather than hers is correct, or writing an academic essay on a complex topic).

Conceptualizing language development across these two continua has important implications for the education of bilingual children. First, due to different degrees and different contexts of exposure to the majority language, communicative tasks that for monolingual children may typically be type-A tasks (see fig.1) for bilingual children may be type-D tasks. Failure to take this into account leads to invalid interpretations of bilingual children’s test and classroom performance and mislabeling them as mentally retarded or learning disabled. Second, while a major aim of schooling is to enhance the individual’s ability to interpret and manipulate context-reduced cognitively demanding text, research shows that these skills are best developed when in the initial instruction context-embeddedness is maximized.

Despite criticism that some important questions are left unaddressed, such as how to measure CALP (Edelsky, 2006), Cummin’s theoretical framework gained vast popularity among both academics and practitioners working with children from language diverse backgrounds and gave teachers new labels such as “low CALP in the schooling language” to describe their students’ performances, instead of relying on the traditional diagnosis of retardation and learning disabilities (Aukerman, 2007).
4.2 The monolingual mindset of education

Historically, students from linguistic and culturally diverse families who have limited proficiency in the majority language and come from low socio-economic backgrounds perform poorly in the educational settings. They have lower test scores and lower college attendance rates compared to their majority culture group peers and show higher school failure and dropout rates (Garrick Duhaney, 2005, p.104). Significant numbers of these students are also disproportionately referred to special education and tracked to low-performance streams (idem). For many decades such phenomena was explained with the disadvantageous impact that early multilingualism had on the child’s development, “divert[ing] attention from real defects of our educational system to imaginary defects of the child” (Labov, 1973 quoted in Cummins & Swain, 1986, p.144). More recent studies have shown that underachievement of linguistically diverse students is better explained with the monolingual and monocultural mindset of educational practices.

Gunderson and Siegel (2001) have argued that intelligence tests that are usually used to identify students with special needs, are often inappropriate for use with students from culturally and linguistically diverse backgrounds for a variety of reason. Their study shows that among other deficiencies, there is a serious discrepancy between the language of the test and the language of the student; variance in proficiency of the test language has important consequences for intelligent test performance; tests assume good knowledge not only of a certain language but also of a certain culture; the test cannot differentiate a first-language learning problem from a second-language learning problem; test administrators may not be knowledgeable of the student’s first language or first culture to be able to differentiate discrepancies from differences; and usually translation of a test into different languages does not eliminate the inherent difficulties related to cultural biases or scoring schemes that favor faster response times.

Garrick Duhaney (2005, p.104) conquers with these findings stating that overrepresentation of students from culturally and linguistically diverse backgrounds in special education shows a lack of knowledge about the linguistic and cultural characteristics of these students and experts might lack the knowledge of what constitutes normal versus pathological behaviors among them. She argues that for students who live in two culturally and linguistically different systems “the challenges of cultural and linguistic diversity are multiplied… [when they are] diagnosed as disabled. Schools’ failure to support [their] language abilities… disables these students, promoting academic failure rather than growth” (idem).
Cummins’ theoretical framework (see section 4.2) has played an important role after the 1980s in lowering the chances for multilingual children to be misdiagnosed as disabled in learning. However, Maren Aukerman (2007) published an interesting case study where a pre-school teacher’s knowledge of CALP not only did not help her Spanish-English bilingual student, but rather hindered his school experience by categorizing him as “unready to learn” due to insufficient CALP in both English and Spanish. The teacher in this case study was relying on the formal tests run at the beginning of the school year to measure CALP and the student’s challenges in class to process context-reduced cognitively demanding academic knowledge. The teacher felt there was no other way for her to help Joaquin but give him more time to develop CALP, so he had to repeat the pre-school year. Aukerman concludes that “it is ultimately destructive to view proficiency in decontextualized language as a prerequisite for successful participation in school…CALP can easily be used to demarcate a pedagogical line in the sand—if a child does not have sufficient CALP, she or he cannot learn successfully” (Aukerman, 2007, p.632). I read this as a case of CALP misinterpretation or misapplication by a practitioner, since Cummins himself emphasized the importance of maximizing contextual clues in the primary education instruction.

Teachers play a crucial role with their own understanding and application of different pedagogical tools, as it is clear in the example above. Furthermore, research has shown that teacher attitudes and expectations influence students’ academic performance. The first and probably the most famous study to have demonstrated this was that of Robert Rosenthal and his colleagues in the late 1960s. These researchers administered a test at the beginning of the school year to identify which students were most likely going to bloom during the next academic year. At the end they gave teachers the “bloomers” students’ names that were in fact picked randomly (with a few exceptions). At the end of the school year the students were tested again. The randomly picked candidates for the most rapid intellectual growth had gained an average of 15 points to their IQ, while the IQ of the “non-bloomers” remained unchanged. The conclusion was clear: a teacher’s expectations about a child’s academic ability may become a self-fulfilling prophecy, even when there is no ground for such expectations. (Rosenthal & Rubin, 1978).

This has important implications for children of language diverse backgrounds, as deviations from the standard middle-class language are often interpreted as evidence of low cultural capital of the child and as such may lead the teacher to expect little of that child’s academic achievement. These views are echoed also in Garcia et al. (2016, p.17) who point out that “as school
practitioners we often think of language solely as the standardized variety that is present in textbooks or used in assessments “

Cenoz et al. (1998) draw our attention on another important function of schooling, namely that of socialization. As they grow up, children acquire cultural capital in the primary socialization at home and develop it further during their secondary socialization in schooling. This secondary socialization is carried out both through the explicit teaching of a curriculum that is built around the values of the dominant social group, and through the implicit teaching of a “hidden” curriculum as it is carried out by the teachers’ modes of behaving and the whole school’s institutional culture. Such modes of behavior and culture express their beliefs about appropriate relationships with others and the world and pass on expectations onto the students, which are internalized by the later into a subconscious understanding of what constitutes a “good pupil” or a “good person”. For the monolingual child, these underlying beliefs and expectations that they experience in their secondary socialization through their teacher relations tend to be a continuation of those experienced in their primary socialization at home, since teachers and parents belong to the same dominant social group. However, for bilingual children their “primary socialization has taught them different values, beliefs and practices from those of the school and its teachers” and as a result they “have a quite different experience of secondary socialization and the hidden curriculum.” (Cenoz et al., 1998, p.105).

This disjuncture between home and school values and expectations may explain the feelings of alienation and the socially deviant behaviors found in prior research among bilingual children. It is clear that schools should take responsibility in developing appreciation for the home culture in the child and providing a sense of continuity between the primary and secondary socialization processes. Parents may be less aware and less well-equipped to take on such a role. In fact, linguistic minority communities go through different stages of awareness when it comes to their culture and language preservation, as it is captured by this first-hand account of a Punjabi teacher as cited in (Edwards, 1983, p. 31-32):

“Asian parents are very anxious that Hindi, Urdu, Punjabi and Gujarati should be kept alive in their children. But in the early days they were busy with buying houses and had other such preoccupations on their minds. They were not articulate enough to ask for mother tongue teaching in the school curriculum, and the communities were not yet well organized enough to arrange temple or mosque classes… At the same time children were being strongly discouraged from using their
mother tongues… in language units and in schools… At first Asian parents did not object to these attitudes and approaches in schools, for they recognized that English is commercially more valuable in the country in which they have chosen to live. However, when children grew into their teens, and started to lose the common language of the home, parents became more anxious. They could not follow the English of their teenage sons and daughters, and there were many disputes… Many parents began openly to demand action within their own communities”.

Although recorded over 30 years ago, this quote depicts quite well how immigrants are so pre-occupied with fitting in and adjusting into the new home country, that formal instruction of their mother tongue is often considered anything ranging from unnecessary to undesirable. A study of language minority students in Oulu found similar results in 2014 (Niskanen, 2014). The national Finnish curriculum emphasizes the right of each child to get instruction of their mother tongue (Opetushallitus, 2016, p.91-92). However, rather than being just another subject offered by the school, attendance of such formal instruction is left to the choice of the students and their families. The city of Oulu will only provide mother tongue instruction if a minimum of six students request it (Oulun kaupunki, 2017). The finding of qualified teachers is a considerable challenge (Niskanen, 2014, p.61).

4.3 Fostering equity education for multilingual children

In a monolingual and monocultural mindset where school tasks and tests are culturally biased and fail to take into account the multilingual child’s development, the perceived self-efficacy of the multilingual child becomes a matter for concern. Bandura (1986, p.391) defines perceived self-efficacy as “people’s judgment of their capabilities to organize and execute courses of action required to attain designated types of performances. It is concerned not with the skills one has but with judgments of what one can do with whatever skills one possesses.” A child’s judgment that they can be successful in school with the skills they possess is a very important motivating factor. As Bandura (1986, p.394) explains “when beset by difficulties, people who are plagued by self-doubts about their capabilities slacked their efforts, or give up altogether, whereas those who have a strong sense of efficacy exert greater effort to master the challenge.” The most important factor that influences a person’s perceived self-efficacy is her own perfor-
mance history: success enhances self-efficacy, whereas “repeated failures lower them, especially if the failures occur early in the course of events and do not reflect lack of effort or adverse external circumstances” (Bandura, 1986, p.399).

Therefore, in order to enhance the multilingual child’s self-efficacy, they must be given experiences of academic success instead of repeated failures that persist despite their efforts. Towards that end, tasks and exercises must take into account the multilingual child’s development and strengths. For instance, multilingual children may fail in word-by-word reproductions of majority language rhymes due to their bilingual processing of the information which leads to remembering the meaning instead of the word and as such they substitute words with their synonyms (Leopold, 1939-1949 as cited in Baker, 2001, p.148). On the other hand, multilingual children are very good at recognizing the arbitrariness of words which makes them exceptionally good at playing with word labels (Ben-Zeev, 1977) (see section 3.2). School exercises and tests may provide examples of such tasks where multilingual children succeed to make them aware of their strengths and give them the necessary experience of succeeding in the academic setting that eventually strengthens their self-efficacy in school performance.

Another issue to be carefully considered in the education of multilingual children is the discrimination between language differences and learning disabilities. Researchers have attempted to help educators in this area by providing them multiple tools that can facilitate the making of these differences. Garrick Duhaney (2005, p.105) for instance suggests that “educators can consider whether the language difference is related to poor attention to school variables that perpetuate these differences such as inadequate preparation of teachers, limited instruction in students’ native language, insufficient instruction from diverse ethnic and cultural perspectives, and culturally biased assessments.” She further suggests that a student should be examined in both the language (and dialect) the student is most proficient in and the language of the schooling in order to determine whether the student has a language impairment (idem).

Elaborating further on the instruction in the native language, at present this is limited at best and very often completely inexistent (see section 4.2). Empirical research has given evidence for the threshold hypotheses stating that bilingualism has advantageous effects on cognitive development if both languages are learned above a certain threshold proficiency. This mandates formal instruction in the mother tongue be part of every student’s education. However at present
such instruction is left at the choice of students and parents, which makes it a teacher’s responsibility to help these groups become aware of the advantages such an instruction would have for the child’s academic success.

In addition to academic advancement, schools should not overlook the implications of multilingualism for the social development of the child. Although multilingualism allows the child to build social connections with children from a variety of language groups thus enhancing the child’s social development, sometimes problem arise when minority language children are confronted by majority language peers. In very young age, children are rarely conscious of language barriers and engage easily in communication capitalizing a lot on their body language. However, as they enter middle school and the teenage years rivalry, competition, and peer group conformity become important aspects of the child’s social relations and language may be experienced as a barrier. Prejudice may arise as a result of language communication problems. Baker (2007, p.85) states that “the responsibility for breaking down barriers to friendship which language and cultural differences might create, lies partly within a school curriculum. Through role playing, language awareness lessons, prejudice reduction activities, discussions in the classroom, the naturalness and value of language diversity in the world needs reaching in school as much as any curriculum subject”.

Towards a better understanding of the multicultural child’s inner world both by herself and others in the school, He and McKenna (2005) have advocated for a culturally responsive approach to reading. They promote the use of “life-based multicultural literary texts (particularly those written in children’s voices)…which portray the desires, fears, and hopes of diverse learners and create in-depth empathetic understanding of the lived experience of people who are from different socio-economic, ethnic, cultural, and linguistic backgrounds and whose lives are dramatically different from the lives of the mainstream children” (p.283). Grindler, Stratton and McKenna (1997) coined the term “bibliotherapy” to describe the usage of insightfully-selected books as a means for increasing awareness about other cultures and languages and broadening the knowledge and appreciation of all students.

Such books could be read aloud by the teacher or used as reading selections. Teachers could invite students to bring their personal experiences to the context of reading through discussions, reflective reading journals, autobiographical sketches, narrative imagination drawing, music circles, show-and-tell, parent or guardian interviews, and collaborative group work. Teachers would search for ways to allow students to reflect on their backgrounds, experiences, values,
and ways in which their personal histories, cultures, and experiences affect who they are, how they interact with others, and how they perceive the world. Caution must be exercised not to have students revert to their stereotypes and biased assumptions about other cultures during the reading of such texts. Instead the school community should support a wide range of activities and continual reflection on the complex matters of prejudice and racism to enhance deep understanding instead of oversimplification. (He & McKenna, 2005, p.283-284).

Furthermore, if a school wishes to provide continuity between primary and secondary socialization, a culturally diverse faculty is important. As Cenoz et al. (1998, p.105) explains “since people embody the cultures in which they live, schools need teachers from the same culture as the child…” Other researchers have advocated for issues of diversity—including linguistic diversity—and multidisciplinary courses on multilingualism to be included in teacher education programs ((He & McKenna, 2005, p.275). Such courses could increase teacher awareness on issues of discrimination and racism, making them better able to understand and respond to the needs of their increasingly diverse student population.

In the recent years some education researchers have advocated for a radical change in the monolingual mindset that currently permeates educational settings and practices. Garcia et al. (2016) have argued that education considers language from an external perspective and considers bilinguals as two monolinguals in one. According to these authors, thinking and acting differently about the language practices of bilingual people is fundamental to bringing about change. Language mixing and code-switching should not be stigmatized as evidence of poor language development. Instead, they promote translanguaging, as a practice in which language is seen from the perspective of the user, not that of the standard national languages. From this user perspective, drawing on one’s all language repertoires is only natural and as such it should not be considered as inferior language use in the classroom. Instead educators should understand that “students arrive with valuable linguistic capabilities that can be leveraged to develop their fine minds and to further expand their academic and personal competences by using their full existing language repertoires at all times” (Valdes, 2016, p. vii).
5 Conclusion

This study aimed to investigate the impact of the upbringing in a multilingual environment on the child’s development and what implications such impact has for education practices. Trends in globalization and people mobility are increasingly leading to families living outside the borders of their countries of origin or culturally mixed families, growing significantly the number of multilingual students in our classrooms. At a time when we are engaged in a global discourse of equitable education for all, taking into account the development and needs of students from diverse linguistic backgrounds is essential.

Language acquisition and development has drawn a fair share of attention from various disciplines. Attempts to explain the process have led to different theories that could be classified into three main paradigms. The behaviorist paradigm influenced by the work of B. F. Skinner (1904-1990) explains the linguistic development through the presence of environmental stimuli and reinforcement in a conditioning process. The nativist paradigm pioneered by Noam Chomsky advocates for the presence of universal grammar principles that are embedded in our species’ genes making humans prone to acquiring their community languages. Several theories in the interactionist paradigm build bridges between these environmental and genetic influences relying on an interaction between the two to account for the acquisition of language. To different degrees, all these paradigms acknowledge the vital importance of environmental input in the acquisition of language skills.

Despite the amount of research from multiple disciplines, the process of language development remains not fully understood. For study purposes language is often seen as comprised of four intertwining elements such as sounds, words, sentences, and language use. The last element refers to the ability to use the language to build relations with others and to reach certain goals. Research shows that there is vast individual variation when typical children master these language composing elements, although certain generalizations can be made.

Research on multilingual language acquisition has been conducted either to further our understanding of language acquisition in general, or to examine whether the developmental path of language in multilingual infants is different from that of their monolingual peers. Research to date has mostly focused on the simultaneous acquisition of two languages and multilingual upbringing comprising three or more languages is often seen as an extension to simultaneous bilingualism. Recently there has been an increase in trilingual language acquisition studies.
Research concludes that while multilingual infants reach their language development milestones around the same time as the monolingual children, they follow a unique language development path.

Multilingual children mix lexical systems from all their language repertoires until the age or three and sometimes clear separation does not happen until the age of seven. Researchers disagree on the reasons behind this mixing, some arguing that early mixing is a sign of the child’s unawareness that the two languages are different. Others argue the ability to discriminate between the languages is present even in newborn children and early language mixing is simply a result of the yet immature development of each language. Code-switching and language interference are common features in the employment of language by multilingual children.

Multilingual input from the upbringing environment naturally has effects on a child’s cognitive development. Many studies have examined these effects reporting mixed results between positive, negative and neutral influences. All these studies raise questions on how multilingual skills and cognitive skills have been operationalized and measured and suffer from inherent methodological challenges that make it difficult to establish causality or account for individual differences. Nonetheless, it is safe to conclude that multilinguals and monolinguals perform differently in a variety of cognitive tests. Going further into labelling these differences as “cognitive disadvantages” or “cognitive advantages” of multilinguals over monolinguals however, can be misleading and has often been driven by conscious or subconscious political motives.

Aside from cognitive effects, being brought up in a multilingual environment has important consequences for a child’s social development, especially since “multilingual” usually implies also “multicultural.” As languages are usually employed in a certain context multilinguals build patterns of association between the context and the language, which may lead to a shift in their behavior as they use a particular language. Sometimes labelled as “different personalities,” these are in fact different sides of the same personality. Multilingual children develop awareness and openness about different cultures and different ways of doing things. With the right support from the environment, this may help them develop self-confidence in embracing their different identities. Compared to monolinguals, multilingual children are found to be more aware of and more responsive to their interlocutors’ communicative needs.

For many decades research has shown a strong link between language proficiency and academic achievement. Variances in academic performance are best explained by variances in the mastering of language and a lot of learning disabilities are linked to different forms of language
impairment. Jim Cummins developed in the ‘80s a theoretical framework that distinguished between basic interpersonal communicative skills and cognitive academic language proficiency. This framework was intended to give educators a tool for better assessing the minority language students’ academic aptness. This framework incorporates also the threshold hypotheses which states that for multilingualism to have positive rather than negative effects on cognitive skills, the child’s language proficiency in all languages should be developed above a threshold point. Despite methodological caution, empirical research seems to support this hypothesis.

Despite this development, linguistically diverse students have continued to be disproportionately represented in special education classes and low-performance tracks, having lower school completion and high education enrollment rates. These results were historically explained by the disadvantageous effects of multilingualism on cognition, diverting attention away from the inherent problems of education practices centered on a monolingual and monocultural mindset. Research is increasingly raising awareness about this mindset continually problematizing aspects such as the cultural bias of intelligence tests, teachers’ low expectations on certain students’ performances becoming a self-fulfilling prophecy, the disjuncture between the home and school values in the lack of a culturally diverse faculty, and lack of resources for the formal instruction of minority languages despite research evidence supporting such instruction.

Multilingual children’s development and needs and not fully taken into account by current education practices. Several changes could be made towards that end, such as:

- becoming aware of and addressing the linguistic and cultural bias of education tests
- expanding school tasks to include what multilingual children excel at to enhance their self-efficacy in academic performance
- educating professionals on multilingualism to help discriminate between language impairments and language differences
- informing children and parents on their right to receive formal instruction of their mother tongue and the advantages of such instruction
- increasing awareness on the naturalness and value of language diversity and combat stereotypes
- using life-based multicultural literary texts to foster understanding and empathy
- diversifying the background of faculty members and/or visiting guests to have all cultures of the student body represented
- making multiculturalism and linguistic diversity studies part of teacher education programs to increase teacher awareness on issues of discrimination and racism
- educating teachers to understand the strengths of multilingual children and leverage those strengths to their full potential

Future action research and impact evaluation studies could implement and assess the efficiency of some of the changes suggested above. Fostering awareness on early multilingualism and implementing these changes could lead to a better-quality and more equitable education for linguistically diverse children.
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