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ENHANCING LEARNING OF CHILDREN FROM DIVERSE LANGUAGE BACKGROUNDS:



MOTHER TONGUE-BASED BILINGUAL OR MULTILINGUAL EDUCATION IN THE EARLY YEARS

ANALYTICAL REVIEW COMMISSIONED BY
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LANGUAGE BACKGROUNDS:

MOTHER TONGUE-BASED BILINGUAL OR MULTILINGUAL
EDUCATION IN THE EARLY YEARS

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EXECUTIVE SUMMARY

This literature review discusses mother tongue-based bilingual or multilingual education for children starting in early childhood. The report: (1) informs policy-makers of existing research and practices in mother-tongue instruction in early childhood and early primary school years; and (2) raises awareness of the value of maintaining the world's languages and cultures by promoting and resourcing mother tongue-based education for young children.

This analysis of current literature is framed within UNESCO's mandate and strong commitment to quality education for all and to cultural and linguistic diversity in education (UNESCO, 2003a). This discussion is especially timely, given the slow and uneven progress (UNESCO, 2000) in meeting international targets for universal education articulated in the Education for All Goals 1 (ECCE), Goal 2 (Primary Education), and Goal 6 (Quality of Education) (World Declaration on Education for All, 1990).¹ Impetus for the current report is provided by the UNESCO (2008a) 'Global Monitoring Report on Education for All: Will we make it?' The 2008 GMR report calls for unwavering political will to ensure that education from early childhood onwards is a priority of national governments, civil society and the private sector in order to ensure educational inclusion for the 72 million children out of school and to reduce the numbers of young learners who leave school without acquiring essential skills and knowledge. The report calls for increased investments in the provision of pre-primary education for children aged 3 and above, and for policy measures to provide care and education to children below age 3. UNESCO (2007a) emphasizes the role of early childhood care and development in laying the foundation for learning and setting the stage for successful engagement in formal education.

UNESCO has encouraged mother tongue instruction in early childhood and primary education since 1953 (UNESCO, 1953). Yet, monolingualism in official or dominant languages is still the norm around the world (Arnold, Bartlett, Gowani, & Merali, 2006; Wolff & Ekkehard, 2000). In its report, 'Strong Foundations: Early Childhood Care and Education', UNESCO (2007a) points out the overlooked advantages of multilingual education in the early years. When children are offered opportunities to learn in their mother tongue, they are more likely to enrol and succeed in school (Kosonen, 2005) and their parents are more likely to communicate with teachers and participate in their children's learning (Benson, 2002). Mother tongue based education especially benefits disadvantaged groups, including children from rural communities (Hovens, 2002), and girls, who tend to have less exposure to an official language and tend to stay in school longer, achieve better, and repeat grades less often when they are taught in their mother tongue (UNESCO Bangkok, 2005).

Increasingly, cultural groups are realizing the need to ensure the transmission of their linguistic heritage to the youngest members of their communities. A compendium of examples produced by UNESCO (2008b) attests to the resurgence of international interest in promoting mother tongue-based education, and to the wide variety of models, tools, and resources now being developed and tested to promote learning programmes in the mother tongue. However, most examples focus on the primary school level. Few empirical studies or well-documented programmes promote the family's role as a child's first teacher in learning their first, and often more than one primary language, or the role of early childhood educators in supporting mother tongue development or bi/multilingual learning in

programmes that serve very young, linguistically diverse populations.

Many children speak a home language that differs from the language of instruction in education programmes. Research confirms that children learn best in their mother tongue as a prelude to and complement of bilingual and multilingual education. Whether children successfully retain their mother tongue while acquiring additional languages depends on several interacting factors. Studies show that six to eight years of education in a language are necessary to develop the level of literacy and verbal proficiency required for academic achievement in secondary school. To retain their mother tongue, children whose first language is not the medium of instruction must have: (1) continued interaction with their family and community in their first language on increasingly complex topics that go beyond household matters; (2) ongoing formal instruction in their first language to develop reading and writing skills; and (3) exposure to positive parental attitudes to maintaining the mother tongue, both as a marker of cultural identity and for certain instrumental purposes (e.g., success in the local economy or global trade).

In addition, research increasingly shows that children's ability to learn a second or additional languages (e.g., a *lingua franca* and an international language) does not suffer when their mother tongue is the primary language of instruction throughout primary school. Fluency and literacy in the mother tongue lay a cognitive and linguistic foundation for learning additional languages. When children receive formal instruction in their first language throughout primary school and then gradually transition to academic learning in the second language, they learn the second language quickly. If they continue to have opportunities to develop their first language skills in secondary school, they emerge as fully bilingual (or multilingual) learners. If, however, children are forced to switch abruptly or transition too soon from learning in their mother tongue to schooling in a second language, their first language acquisition may be attenuated or even lost. Even more importantly, their self-confidence as learners and their interest in what they are learning may decline, leading to lack of motivation, school failure, and early school leaving.

Effective language policies for early childhood and primary school must be informed by a careful review

of the research and cautious use of terminology to avoid inadvertent support of 'short cut' approaches to bilingual learning. 'Transition' programmes are appropriate after six to eight years of schooling in children's mother tongue. However, most 'transition' approaches tend to introduce the majority language as the primary medium of instruction in primary year three, a practice associated with much less favourable outcomes for acquisition of both the mother tongue and the majority language. Thus, it is advisable to refer to late transition programmes as 'transfer' programmes to distinguish them from early transition programmes, which can properly be referred to as 'transition' programmes.

The success of mother tongue based bi/multilingual initiatives depends on a number of factors, including:

- ◆ children's health status and nutritional sufficiency;
- ◆ family socio-economic status;
- ◆ Parents' and communities' attitudes and behaviours
- ◆ competing demands for children's participation (e.g., agriculture, paid or domestic work, child care);
- ◆ individual and social factors affecting proficiency in the language of instruction;
- ◆ access to school;
- ◆ inclusion in education
- ◆ the status of the mother tongue (e.g., high or low status; a majority or minority language);
- ◆ quality of instruction;
- ◆ the political and economic environment (e.g., presence/absence of conflict, crises, stability); and
- ◆ social adjustment and peer relations.

To help inform policy guidelines, this report concludes with preliminary recommendations for policy guidelines, including key elements and a suggested outline. Highlights of the recommendations are to:

- ◆ Carry out awareness raising campaigns on the importance of the development and use of mother tongue-based instruction.
- ◆ Support the critical role of governments in promoting effective mother tongue-based bi/multilingual education programmes.
- ◆ Promote clear, sustained political commitments to bi/multilingual education in policy frame-

works and administrative contexts at national and local levels.

- ◆ Encourage mother tongue development to the level of cognitive academic language proficiency to scaffold additional language learning.
- ◆ Recognize mother tongue acquisition, rather than acquisition of a dominant national or international language, as the first priority in judging children's achievement in preschool and throughout primary school.
- ◆ Recruit teachers who are fluent in the language of instruction at the level of cognitive academic language proficiency in reading, writing, and speaking.
- ◆ Provide pre-service and in-service teacher education to ensure that teachers can engage in

effective pedagogy, be culturally competent, have subject-matter knowledge for the academic level they teach, and can teach energetically with very young children.

- ◆ Support pedagogical improvements to facilitate the success of the language-in-education model.
- ◆ Promote policies that position parents (and other family members) as 'first teachers' and that engage parent and community involvement at all stages of programme planning, implementation, and evaluation.
- ◆ Promote precision in the use of a common conceptual vocabulary for describing language-in-education models to avoid confusion between early-exit (subtractive) and late exit (additive) bilingual education.

INTRODUCTION

... young children learning L2 are one of the fastest growing segments of the global population

(Kan & Kohnert, 2005, p. 380)

In every corner of the world, young children are learning languages at home that differ from the dominant language used in their broader social world. These children arrive at school with a precious resource: their mother tongue (hereafter referred to as L1). Typically, when minority and indigenous language children begin preschool or primary school, they must learn the language of the majority group in their region to fit in socially and succeed academically. Most often, these children are educated exclusively in the second language (hereafter referred to as L2). Though exceedingly common, these majority language educational programmes do nothing to support minority language children to develop competence in L1. Moreover, the language policies that inform these programmes devalue the cultural backgrounds and knowledge associated with minority children's L1. Persistent early school leaving and low academic achievement among minoritised children stem in part from these language-in-education policies (UNESCO, 2000). However, many initiatives around the world provide formal support for children to continue to develop competence in L1 and self-confidence as learners, while also learning an additional language or languages. This literature review focuses on these mother tongue-based bilingual and multilingual education programmes.

This review is intended to assist UNESCO, the lead international educational agency, to develop clear guidelines and principles for language policy in early education, particularly within the context of the Dakar Framework for Action, Education for All (2000). Universal access to quality primary education for children and a 50 per cent increase in adult literacy by 2015 were among the goals set in this framework. In addition, UNESCO voiced support for the maintenance of linguistic and cultural diversity and the promotion of children's right to learn in their mother tongue. Many of the world's language and cultures are endangered by historical incursions, mostly associated with colonialism, and a host of contemporary political, economic, and social processes. One way to counter this linguistic and cultural loss is to encourage and support parents to teach their infants and young children the local language in the home, and to deliver early childhood education programmes and formal education systems in the children's mother tongue. Though not conclusive, current theory and a growing body of empirical research on language acquisition and bi/multilingual learning provide a rationale for basing early education in children's mother tongue before introducing a second language as a medium of instruction.

To date, very little research has focused on mother tongue-based care and development programmes for preschool-aged children. The vast majority of formal school systems around the world either require children to acquire a national or international language at school entry or soon after. Typically, programmes offer two or three years of primary education in L1 before requiring learners to 'transition' to a national and/or international language in primary year two or three. Current research suggests that this trend threatens the preservation of the world's linguistic and cultural diversity.

Decisions about which languages will serve as the medium of instruction and the treatment of children's home languages in the education system exemplify the exercise of power, the manufacture of marginalization

and minoritization, and the unfulfilled promise of children's rights. Stroud (2002) maintains that "linguistic marginalization of minority language groups and their political and socio-economic marginalization go hand in hand" and that "one is the consequence of the other" (p. 48-49). Political, social, and technical considerations often collide in policy makers' decisions on language medium, schooling, and curriculum. Considerations include, but go beyond, questions of resources, teacher training, and subjects to be studied. Other crucial factors range from the political will of local, regional, and national governments, the relationships between countries and their former colonizers, the understanding and patience of international donors, and parents' hopes and anxieties about which languages their children will need to secure employment and participate with dignity in their social, legal, and economic worlds. While the broader political ramifications of language-in-education policies and practices are beyond the scope of this report, Rampton (1995), Blommaert (1999), and Golding and Harris (1997) provide excellent analyses of these issues.

This report provides a rationale to promote mother tongue-based bi/multilingual early education grounded in international normative frameworks, theory about dual language acquisition, and emerging evidence about the impact of mother tongue based bi/multilingual education initiatives. The report identifies the ecological conditions needed to implement successful programmes, drawing on lessons from documented programme innovations. Finally, the report outlines the implications of these findings for policy makers who are committed to language preservation and to ensuring that linguistically minoritised children have a chance to succeed in school and in life.

INTERNATIONAL NORMATIVE FRAMEWORKS

It is increasingly obvious that the language of instruction at the beginning of one's education at such a crucial moment for future learning should be the mother tongue.

UNESCO (2001a). International Conference on Education
46th Session: Final Report (p. 11)

UNESCO's commitments to inclusive education and quality learning environments and to cultural and linguistic diversity provide the framework for this report. UNESCO and other international agencies concerned with early education, children's rights, and linguistic diversity argue strongly for the pedagogical imperative of using a child's own language as the medium of instruction, at least in the early years of formal schooling (UNESCO, 1953; UNESCO, 2003a). Broad international agreement about the importance of the use of language(s) in education is reflected in a number of declarations, agreements, and recommendations.

A platform of international declarations and conventions support the learning of at least two languages in education: a mother tongue and a language of the larger community, as well as access to international languages. In its 2003 position paper, *Education in a Multilingual World*, UNESCO (2003a) espouses:

- (1) Mother tongue instruction as a means of improving educational quality by building on the knowledge and experience of the learners and teachers;
- (2) Bilingual and/or multilingual education at all levels of education as a means of promoting both social and gender equality and as a key element of linguistically diverse societies;
- (3) Language as an essential component of inter-cultural education to encourage understanding between different population groups and ensure respect for fundamental rights.

Some key standard-setting frameworks are highlighted below.

UNITED NATIONS STANDARD-SETTING INSTRUMENTS

The United Nations Universal Declaration on Human Rights (1948) affirms the right to education without discrimination. Article 2 of this fundamental document establishes the basic principle against discrimination on the grounds of language. Article 5 of the 1960 Convention and Recommendation against Discrimination in Education specifically recognizes "the right of the members of national minorities to carry on their own educational activities, including ... the use or the teaching of their own language." More recently, numerous other United Nations declarations and conventions affirm the rights of minorities, including indigenous peoples, to learn and/or have instruction in L1 or their heritage language. Key documents include: the

1989 Convention on the Rights of the Child; the United Nations Declaration on the Rights of Persons belonging to National or Ethnic, Religious and Linguistic Minorities (1992, Article 4); the ILO Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries (1989, Article 28); the 1990 International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (Article 45); and the 2007 United Nations Declaration on the Rights of Indigenous Peoples.

UNESCO DECLARATIONS AND CONVENTIONS

The first Article of the UNESCO Constitution sets forth the fundamental principle that language should not induce any kind of discrimination: “the human rights and fundamental freedoms... are affirmed for the peoples of the world, without distinction of race, sex, language or religion.” The 1960 Convention against Discrimination in Education lays down the educational rights of minorities. Of particular relevance to language, Article 5 holds that: “the members of national minorities [have the right] to carry on their own educational activities, including... the use or the teaching of their own language, provided... that this right is not exercised in a manner which prevents the members of these minorities from understanding the culture and language of the community as a whole and from participating in its activities.” These statements are echoed in a host of more recent UNESCO declarations and conventions, including: the 1976 Recommendation on the Development of Adult Education (Article 22); the 1978 Declaration on Race and Racial Prejudice (Article 9); the 1995 Declaration and Integrated Framework of Action on Education for Peace, Human Rights and Democracy (Article 29); and the Action Plan for implementing the Universal Declaration on Cultural Diversity (2001b, Article 6).

INTERNATIONAL FORUMS

While broad international agreement exists on the right to learn in one’s mother tongue, a number of practical, political, and economic challenges must be addressed to realize this right. A first step is to clarify the operational definitions of the key concepts invoked in principles and promises about mother tongue and majority language policies in education. Agreement must be reached on the fundamental question of what constitutes ‘learning one’s mother tongue’ must be defined: Does ‘learning’ consist of a rudimentary ability to converse about everyday matters in one’s mother tongue, or does it refer to an ability to read and discuss literature on an academic subject at a secondary school level? Other questions include the relative balance in education between ensuring that learners are proficient in L1 versus a majority language and the criteria by which to evaluate the success of bilingual education programmes.

A significant consideration that is rarely raised in policy discussions of bi/multilingual education is the question of early education programmes for preschool-aged children. While the period from birth through age five is the period of most rapid neurocognitive development and arguably the greatest capacity to acquire languages through everyday interactions, most children around the world do not have access to early childhood programmes and few parents receive any education or support as their children’s ‘first teachers.’

Finally, the questions of *who should decide* the medium of instruction for a child’s early education and, when and how minority and majority languages should be introduced require clarification. These questions present persistent dilemmas and are debated extensively in the literature (e.g., see Trudell, 2009, for a recent discussion). Thus, while international declarations are well intended, conceptual and pedagogical shortcomings on the part of those implementing these frameworks on the ground have undermined progress.

CONCEPTS AND DEFINITIONS²

Definitions and terms are important, especially in a contested field such as language education, not least because they index the social status of languages and speech communities (Skutnabb-Kangas & McCarty, 2008; Wiley, 2001). A hidden curriculum of assimilation can lurk behind terminological slippages, such as an overly loose application of terms like ‘dual language’, ‘maintenance’ and ‘bridging.’ Fundamentally different goals underpin programmes oriented towards transition (mainstreaming) versus transfer (additive bilingualism). Benson (2009) and Heugh (2009), among others, draw attention to the importance of a common set of concepts and terms to refer to various programme goals and approaches. Thus, as noted earlier, ‘mother tongue instruction’ is not synonymous with ‘mother tongue-based instruction’: the former could refer to receiving as little as an hour or two of formal instruction in L1 as a subject of study each week. The latter refers to the use of L1 as the *primary* language of instruction across the curriculum and throughout the school day. ‘Multilanguage education’ is a vague term that conveys nothing about the relative position of L1 in the language environment of schooling.

UNESCO has provided a set of definitions for key concepts and approaches, as follows.

MINORITY AND MAJORITY LANGUAGES

The concept of linguistic diversity itself is relative, however, and is usually measured in terms of national boundaries, giving some languages the status of majority language and others that of minority language according to specific national contexts. Mandarin, for example, one of the most widely spoken languages in the world, which is spoken by almost 900 million people, is a majority language in China, but in other countries where only part of the population is of Chinese language and culture, it has the status of a minority language in the face of other national or majority languages of those countries. Similarly, a minority language in a large country may be regarded as a majority language in a smaller country. However, most of the world’s languages, including sign languages for the deaf and Braille for the blind, are minority languages in any national context. Nevertheless, the term ‘minority’ is often ambiguous and may be interpreted differently in distinct contexts because it may have both numerical and social or political dimensions. In some cases it may be simply used as a euphemism for non-elite or subordinate groups, whether they constitute a numerical majority or minority in relation to some other group that is politically and socially dominant.

OFFICIAL AND NATIONAL LANGUAGES

Although there are more than 20 States with more than one official language (India alone, for example, has 19 official languages while South Africa has 11), the majority of countries in the world are monolingual nation states in the sense of recognizing, *de jure* or *de facto*, only one official language for government and legal purposes. That is not to say that they are not bilingual or multilingual societies, but rather that while there may be many languages widely used in a country these do not necessarily have the legal authority of an official language. In many countries that were previously under colonial regimes, the official language tends to be the language of the former colonizers. In addition to official languages, several countries recognize national languages, which may be compulsory in education. The choice of language in the educational system confers a power and prestige through its use in formal instruction. Not only is there a symbolic

aspect, referring to status and visibility, but also a conceptual aspect referring to shared values and worldview expressed through and in that language.

LANGUAGE(S) OF INSTRUCTION

The language of instruction in or out of school refers to the language used for teaching the basic curriculum of the educational system. The choice of the language or indeed the languages of instruction (educational policy might recommend the use of several languages of instruction) is a recurrent challenge in the development of quality education. While some countries opt for one language of instruction, often the official or majority language, others have chosen to use educational strategies that give national or local languages an important place in schooling. Speakers of mother tongues, which are not the same as the national or local language, are often at a considerable disadvantage in the educational system similar to the disadvantage in receiving instruction in a foreign official language.

MOTHER TONGUE INSTRUCTION

Mother tongue instruction generally refers to the use of the learners' mother tongue as the medium of instruction. Additionally, it can refer to L1 as a subject of instruction. It is considered to be an important component of quality education, particularly in the early years. The expert view is that mother tongue instruction should cover both the teaching of and the teaching through this language.

The term 'mother tongue', though widely used, may refer to several different situations. Definitions often include the following elements: the language(s) that one has learnt first; the language(s) one identifies with or is identified as a native speaker of by others; the language(s) one knows best and the language(s) one uses most. 'Mother tongue' may also be referred to as 'primary' or 'first language'. The term 'mother tongue' is commonly used in policy statements and in the general discourse on educational issues. It is retained in this document for that reason, although it is to be noted that the use of the term 'mother tongue' often fails to discriminate between all the variants of a language used by a native speaker, ranging from hinterland varieties to urban-based standard languages used as school mother tongue. A child's earliest first-hand experiences in native speech do not necessarily correspond to the formal school version of the so-called mother tongue. It is an obvious yet not generally recognized truism that learning in a language which is not one's own provides a double set of challenges, not only is there the challenge of learning a new language but also that of learning new knowledge contained in that language. These challenges may be further exacerbated in the case of certain groups already in situations of educational risk or stress such as illiterates, minorities and refugees. Gender considerations cross cut these situations of educational risk, for girls and women may be in a particularly disadvantaged position. In most traditional societies, it is girls and women who tend to be monolingual, being less exposed either through schooling, salaried labour, or migration to the national language, than their sons, brothers or husbands.

LINGUISTIC RIGHTS

Language is not only a tool for communication and knowledge but also a fundamental attribute of cultural identity and empowerment, both for the individual and the group. Respect for the languages of persons belonging to different linguistic communities therefore is essential to peaceful cohabitation. This applies both to majority groups, to minorities (whether traditionally resident in a country or more recent migrants) and to indigenous peoples.

Claims for language are among the first rights that minorities have voiced when there have been situations of political change and evolution. Such claims for linguistic rights range from the official and legal status of the minority and indigenous language, to language teaching and use in schools and other institutions, as well as

in the media. In regard to education, the linguistic rights that have been framed in international agreements for minority and indigenous groups include the following:

- ◆ schooling in their languages, if so desired;
- ◆ access to the language of the larger community and to that of national education systems;
- ◆ inter-cultural education that promotes positive attitudes to minority and Indigenous languages and the cultures they express;
- ◆ access to international languages.

The educational rights that have been formulated in international agreements for migrant workers and members of their families provide:

- ◆ that the integration of their children should be facilitated by teaching the language in use in the school system;
- ◆ that opportunities should be created for teaching children their own
- ◆ language and culture.

LANGUAGE TEACHING

The language of instruction in school is the medium of communication for the transmission of knowledge. This is different from language teaching itself where the grammar, vocabulary, and the written and the oral forms of a language constitute a specific curriculum for the acquisition of a second language other than L1. Learning another language opens up access to other value systems and ways of interpreting the world, encouraging inter-cultural understanding and helping reduce xenophobia. This applies equally to minority and majority language speakers. The way languages are taught is constantly changing, and may vary considerably from one country to another or even within the same country. Much depends on the prevailing concept of language and language teaching paradigms, as well as on the role that is assigned to the language that is taught.

BILINGUAL AND MULTILINGUAL EDUCATION

Bilingual and multilingual education refers to the use of two or more languages as mediums of instruction. In much of the specialized literature, the two types are subsumed under the term bilingual education. However, UNESCO adopted the term 'multilingual education' in 1999 in the General Conference Resolution 12 to refer to the use of at least three languages, L1, a regional or national language and an international language in education. The resolution supported the view that the requirements of global and national participation and the specific needs of particular, culturally and linguistically distinct communities can only be addressed by multilingual education. In regions where the language of the learner is not the official or national language of the country, bilingual and multilingual education can make mother tongue instruction possible while providing at the same time the acquisition of languages used in larger areas of the country and the world. This additive approach to bilingualism is different from the so called subtractive bilingualism which aims to move children on to a second language as a language of instruction.

The current review examines research evidence that can inform policies on how best to support children's maintenance and developing competence in L1, through parent education, preschool, and primary school programmes, while they are also acquiring one or more additional languages; that is, mother tongue-based bi/multilingual education or developmental bilingual education.

LITERATURE REVIEW APPROACH

Research on mother tongue-based bilingual/multilingual education in early childhood and the transition to primary education is scarce. The existing empirical evidence is dispersed across formal, published literature and programme reports from non-governmental organizations, conference proceedings, and newsletters. This report draws on research and programme reports identified through a literature search that included: academic journals and books; government reports; publications and reports of international (multilateral and bilateral) and regional development agencies, research institutes and non-governmental organizations or networks; and correspondence with scholars in the field. The literature review was broad in scope in terms of geographical coverage. Consideration was given to the documents below:

- ◆ Convention against Discrimination on Education (1960);
- ◆ World Declaration on Education for All (1990);
- ◆ Dakar Framework for Action (2000);
- ◆ Education in a Multilingual World: UNESCO Education Position Paper (2003a);
- ◆ Guidelines for Inclusion: Ensuring Access to Education for All (2003b);
- ◆ UNESCO Guidelines on Intercultural Education (2006);
- ◆ UNESCO Global Monitoring Report on Education for All: Strong foundations (2007);
- ◆ UNESCO Global Monitoring Report on Education for All: Will we make it? (2008a).

The bulletin for the 2008 International Conference on Language Development, Language Revitalization and Multilingual Education in Ethnolinguistic Communities was a rich resource. Another useful source on programme approaches was the online Language Policy Website & Emporium.

LITERATURE REVIEW

THEORIES AND APPROACHES

This review begins with an overview of theory and research on first and second language acquisition in childhood. Scholars in developmental psychology, linguistics, and early childhood education continue to put forward competing theories. However, there is broad agreement that young children's ability to learn languages and their emerging reading and writing skills are affected by their social environments, including the language(s) to which they are exposed, the language socialization practices of their caregivers (Heath, 1983; Pesco & Crago, 2008; Van Kleeck, 1994), and language instruction. Some children are born into home environments in which they are exposed to more than one language and they begin to acquire two primary languages simultaneously (e.g., McLaughlin, 1984). Some children start out as monolingual, and begin to acquire a second language sometime in early childhood, for example, in an early childhood programme or through other interactions outside the home, and thus can be said to be acquiring a second language.

Before reviewing understandings of language acquisition in childhood, it is important to clarify that both L1 and L2 acquisition by young children (up to about age 7) appear to differ significantly from language acquisition by older children (Bongartz & Schneider, 2003; Cook, 2000, Hatch, 1978; Liu, 1991). The distinctive nature of *young* children's L2 acquisition calls for a distinctive approach to supporting L2 acquisition in the early years. Another distinction that Nicholas and Lightbown (2008) explain is that the pace of learning an additional language, and effective instruction or support for children to learn an additional language, will depend upon whether the child has developed literacy in L1. Literacy entails the development of metalinguistic awareness, including the knowledge that the pronunciation of words is related to the written form (for most languages), and that there are 'right' and 'wrong' ways to say things (August & Shanahan, 2006). Populations without first language literacy have been overlooked in second language acquisition research literature (Tarone & Bigelow, 2005) – this includes very young children, as well as illiterate older children and adults. These clarifications indicate the complexities of bi/multilingual learning and instruction in childhood, as well as the partial and evolving nature of our understandings of variables that affect learning outcomes for individuals at different ages and with different pre-existing skills. Investigators of multilingual acquisition have underscored the need to have more information on the development of each language when children are learning more than one language concurrently, and the dire need in the field as a whole of having bilingual developmental norms, especially with respect to different levels of language dominance (Yavas, 2007).

Language acquisition in childhood

Until recently, two explanatory approaches – *behaviourist and nativist* – dominated understandings about language acquisition. Following Skinner (1957), the behaviourists argued that infants continue to produce and to learn the properties of language (e.g., sounds, vocabulary, pragmatics, etc.) that are positively reinforced by the child's caregivers and other members of the child's social community. Critics of this account point to the speed of language acquisition in the early years and the stability of acquired meaning, neither of which can be explained by the behaviourist position. In stark contrast, nativists, following Chomsky (1965, 1975) argued that children have an innate grasp of how language works. Thus, while language input activates their inborn capacity for learning language, their learning is internally guided. Critics of this position point to empirical studies showing that the quality and quantity of a child's exposure to language affects their learning (Hart & Risley, 1995).

More recently, developmental psychologists have applied contemporary theories of learning to explain language acquisition. They argue that language is a uniquely human, biologically based capacity, and that the inherent potential to learn language depends on the language environment – effectively, a biocultural perspective.

Theories of second language acquisition

To date, studies of language acquisition have been based primarily on studies of monolingual acquisition, resulting in more theory than empirical evidence. However, scholars agree broadly that children, including most children with specific learning impairments or low general intelligence, have the capacity to learn more than one language (Genesee, 2002).

Theories of second language acquisition are central to the current focus on mother tongue-based bi/multilingual learning. The behaviourist approach, referred to as the '*contrastive hypothesis*' (Fries, 1945; Lado, 1957), assumes that the same processes of positive reinforcement that influence first language acquisition support the learning of second or additional languages. However, behaviourists suggest that when the first and second languages are structurally similar, L2 is easier to learn because *children can transfer their learning* from L1 to L2.

The nativist-oriented '*identity hypothesis*' posits that universal cognitive structures and processes enable both first and subsequent language acquisition; learning neither benefits from, nor is hindered by, learning L1.

The '*interlanguage hypothesis*' combines the contrastive and identity hypotheses, featuring both neuropsychological and social-psychological aspects. This approach emphasizes the role of a broad array of communicative strategies in second language learning, in addition to purely linguistic strategies. Strategies include avoidance of topics, changes in meaning, code-switching, borrowing, gestures, and facial expression, among others. In accounting for the speed, quality, and trajectory of second language learning, the interlanguage hypothesis highlights the role of the speech-language community, including the adequacy of learning opportunities, the quality of language input, and acceptance by the dominant culture.

The '*separate development hypothesis*' proposes that after a period of mixing languages in the first two years of life, the two (or more) languages develop independently of one another, especially when the child is exposed to the two (or more) languages in distinct ways (e.g., different people use different languages, or different languages are used in different contexts) (De Houwer, 1994).

Social-interactionist theory posits that language learning result from the interaction of the learners' innate ability and their language environment, especially the feedback they receive from fluent speakers of L2 to monitor and improve their output. This theory emphasizes the importance of the learners' language environments and their opportunities to produce language and receive feedback.

Critical to the focus of this review, recent investigations have considered the level of competence achieved by learners in their first language in determining the pace, quality, and outcomes of their second language acquisition. Two hypotheses are especially relevant to this discussion: the '*threshold level hypothesis*' and the '*interdependence hypothesis*'.

Skutnabb-Tangas and Toukomaa (1976) proposed the '*threshold level hypothesis*', which posits that only when children have reached a threshold of competence in their first language can they successfully learn a second language without losing competence in both languages. Further, only when a child has crossed a second threshold of competence in *both* languages will the child's bilingualism positively affect intellectual development, a state which they called 'additive bilingualism.' Skutnabb-Tangas and Toukomaa developed the threshold level hypothesis after they found that Finnish children who migrated to Sweden and were required to start school in Swedish before they had become sufficiently competent in Finnish showed weaker school performance and lower competence in both Swedish and Finnish. They characterized this low competence in both the first and second languages as 'semilingualism,' explaining that if the child's first language is insufficiently developed, the foundation for L2 is lacking. In their study, Finnish migrant children who started school in Sweden after they were highly competent in their first language and could continue to develop their first language abilities as they learned their second language attained high levels of competence in both languages and success in school.

Building on these findings, Cummins (1984) formulated an '*interdependence hypothesis*,' asserting that second language competence depends upon the level of development of L1. Cummins distinguished between two kinds of language mastery: '*interpersonal communication*' refers to oral communication skills that are used in everyday situations, while '*cognitive academic language proficiency*' (CALP) is achieved when the speaker can use language in decontextualized ways, including writing, permitting the use of the language as a cognitive tool. Cummins argues that if learners have achieved CALP in L1, this competence can be *transferred* to L2, permitting them to participate successfully in academic learning in L2. If, however, learners have not achieved CALP in L1, both academic learning and second language learning are adversely affected. Accordingly, Cummins recommends beginning general academic instruction in the child's mother tongue until the child has become *highly competent* (i.e., has achieved CALP) in L1. Recently, the concept and operational definition of CALP has been challenged by research-practitioners arguing that what counts as CALP has been arbitrarily defined and varies widely, and that it is pedagogically counterproductive to refer

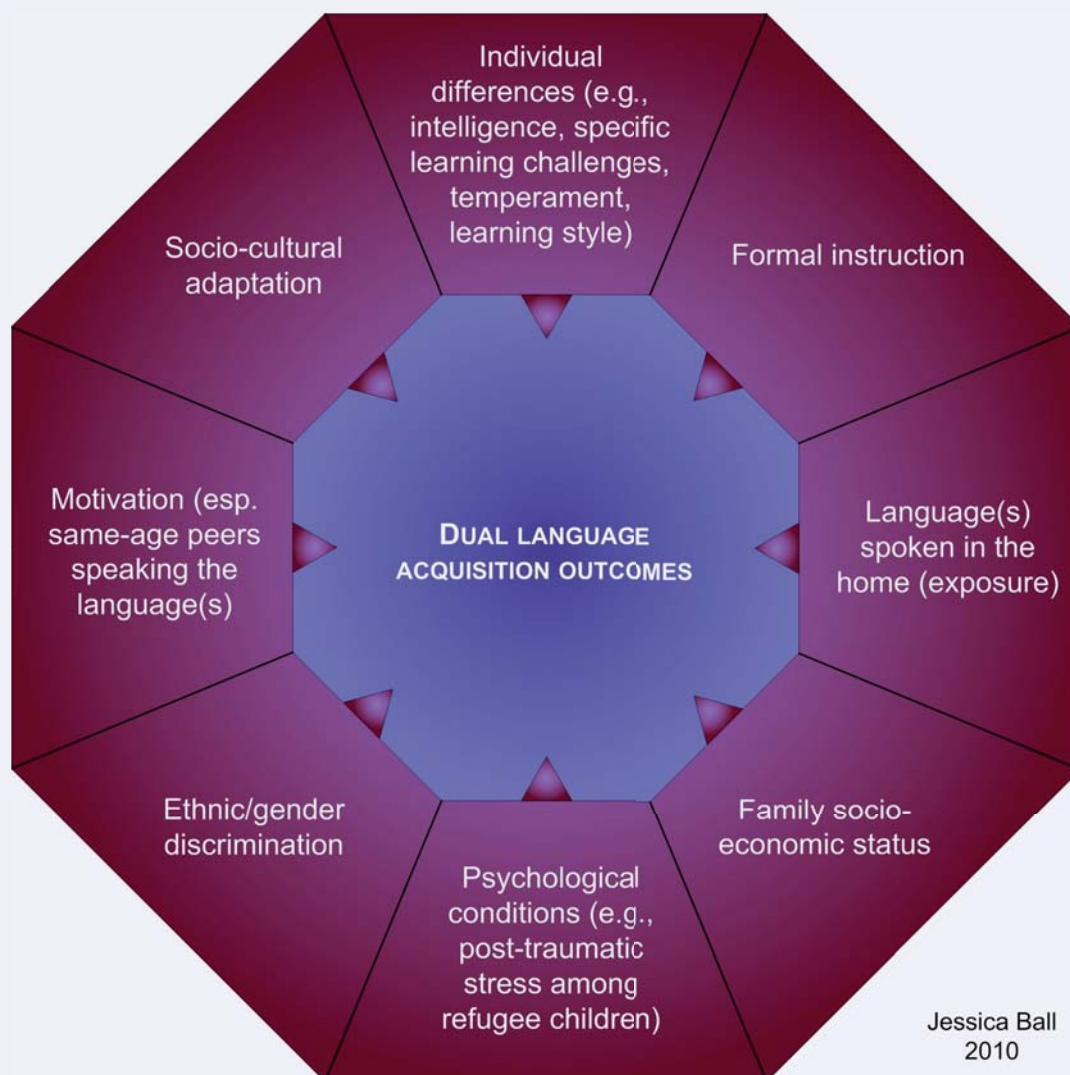
to any classroom language as truly decontextualized (e.g., Aukerman, 2007). Critics have urged teachers to hold children's understandings of context in a central place in teaching and learning.

Indeed, none of the hypotheses reviewed here have been conclusively supported by empirical research. Studies seem to confirm the threshold level hypothesis and the interdependence hypothesis, but existing research is based on small sample sizes. Studies have also been criticized for methodological shortcomings (see Sohn, 2005), discussed subsequently.

What does research show about children's capacity to learn more than one language?

Most children who arrive at school with some competence in more than one language have grown up bilingual or multilingual from their earliest days at home, and have not experienced successive acquisition of second or third languages. Many studies have shown that children can learn three or more languages starting in their early years. Moreover, with sufficient motivation, exposure, periods of formal study, and opportunities for practice, they can ultimately succeed in attaining proficiency in several languages. However, despite myths about young children being able to 'soak up languages like a sponge,' language proficiency does not spring forth in full bloom during the early years. Experience and research have shown that language acquisition takes a long time (Collier, 1989; Cummins, 1991). The length of time and the eventual outcomes of second and additional language learning depend on a number of factors, some of which are illustrated in Figure 1 and discussed below.

Figure 1. Factors affecting dual language acquisition outcomes



Jessica Ball
2010

There is a common misconception that young children can acquire a second or additional language faster than older children. As Lightbown (2008) has stressed, becoming completely fluent in a second language is not, as many have claimed, ‘easy as pie,’ but rather, takes several years. Thus, it is a mistake to assume that providing day care or preschool programmes in a second language is sufficient to prepare children for academic success in that language. Children who have this exposure may be better prepared for school, but will need ongoing support to acquire sufficient proficiency in L2 to succeed in academic subjects, and they will need support to continue to develop L1.

At the same time, it is also a mistake to think, as many educators, parents, and policy makers do, that when a child is encouraged to learn second or additional languages that their first language acquisition will suffer (e.g., Smith, 1931), *unless* support to continue developing their L1 skills is withdrawn. Not only can young children begin to acquire more than one language in their early years, but growing evidence shows that early bilingualism can provide children with benefits that go beyond knowing more than one language. Research has shown for some time that bilingual children typically develop certain types of cognitive flexibility and metalinguistic awareness earlier and better than their monolingual peers (e.g., Bialystok, 2001; Cummins, 2000; King & Mackey, 2007).

Minority and majority language learners

Young children learn a second language in different ways depending upon various factors, including their culture, particularly the status of their culture, language, and community within their larger social setting. Most important to this discussion, it is critical to distinguish among children who are members of a minority ethnolinguistic group (minority language children) versus a majority ethnolinguistic group (majority language children); and among those within each group who are learning bilingually from infancy versus those who have learned a single mother tongue and are learning a second or additional language later in childhood. The focus of the current discussion is on young minority language children who learn a mother tongue that is different from the dominant or majority language in their broader social world. Attention is also given to indigenous children who, in many cases, are not learning the mother tongue of their ancestors as L1.

Indigenous children and other groups who are not learning their ‘heritage mother tongue’ (McCarty, 2008) at home, but rather have learned the language of the dominant culture, are a unique population in discussions of mother tongue education. As defined earlier, these children have a heritage mother tongue that may or may not be spoken by anyone in their family or community, but which their family may wish them to learn through language ‘nests,’ (McIvor, 2006) and preschool or primary school programmes. These special circumstances involve *language recovery*, which poses a number of special challenges and needs. As discussed later in this report, some of the most promising early childhood and primary school programmes in the world have been designed to promote heritage mother tongue-based bilingual education.

Parental influences on mother tongue acquisition and maintenance

Parents and other primary caregivers have the strongest influence on children’s first language acquisition in the early years. These ‘first teachers’ attitudes, goals, and behaviours related to their child’s initial language development influence children’s developing language skills, language socialization, perceptions of the value of L1, and maintenance of L1. Gardner and Lambert (1972) were among the first investigators to characterize parents’ language attitudes as ‘instrumental’ and ‘integrative.’ *Instrumental language attitude* focuses on pragmatic, utilitarian goals, such as whether one or another language will contribute to personal success, security, or status. By contrast, an *integrative language attitude* focuses on social considerations, such as the desire to be accepted into the cultural group that uses a language or to elaborate an identity associated with the language.

Baker (1992) cautioned against the assumption that parents' stated attitudes about their child's language acquisition necessarily match their language behaviour with the child: relationships between attitudes and behaviours are always complex. Most minority language parents are eager to see their children succeed in school and the broader society. Most minority parents also want their children to learn L1 and to be proud of their cultural heritage. Though few empirical studies have been reported, it seems that parents with these dual language goals tend to act more on promoting second language learning than on their expressed desire for mother tongue learning. This behaviour in turn affects children's dual language behaviours: they sense that the home language is less important, resulting in weakening of L1 in favour of L2. This *subtractive bilingualism* can begin at a very early age, just as children are learning their first words. Advocates of mother tongue acquisition in the early years need to consider possible differences between parents' expressed desires and their actual language behaviours with their infants and young children.

Kemppainen, Ferrin, Ward, and Hite (2004) identified four types of parental language and culture orientation: mother tongue-centric, bicultural, multicultural, and majority language-centric. They describe a correspondence between these positions and parents' choice of language school for their children. Of course, in many situations, parents have no choice about the language of instruction. In these situations, De Houwer's (1999) conceptualization of 'impact belief' is helpful. 'Impact belief' refers to the extent to which parents believe they have direct control over their children's language use. Parents with strong impact beliefs make active efforts to provide particular language experiences and environments for their children, and to reward particular language behaviours. Parents with weak impact beliefs take a passive approach to their children's early language experiences, seeing the wider environment as determining whether children acquire one or another language.

Li (1999) described how minority language parents' attitudes towards the majority language affect the speed and quality of children's acquisition of L2. She identifies three conditions that may affect young children's majority language learning when one or both parents speak a minority language: (a) continued use and development in L1 (extensive *family talk* covering more than household topics); (b) supportive parental attitudes towards both languages; and (c) active parental commitment and involvement in the child's linguistic progress (daily conversations, explanations, family talk and joint activities).

Lao's (2004) study of English-Chinese bilingual preschoolers underscores the important contributions of parents' home language behaviour in supporting preschool children's first language development. She emphasizes that mother tongue development cannot be achieved without a strong commitment from parents. To enable parents to facilitate their children's home language and literacy skills, she urges the provision of meaningful print-rich home environments, guidance from adults with high levels of literacy, partnerships with schools, and support for parents who need to improve their own oral and written skills in L1.

Factors internal to the child also affect language learning. Children's responses to opportunities or demands to learn more than one language depend on their temperament and other personality variables (Krashen, 1981; Strong, 1983; Wong-Fillmore, 1983), including motivation, learning styles, intellectual capacity, sensory abilities (e.g., hearing and vision) (Genesee & Hamayan, 1980). Little research has been conducted on the effects of these individual differences on the outcomes of alternative models for language in education.

In sum, this literature has brought forward several considerations when designing policies and programmes to support mother tongue bi/multilingualism in the very early years.

- ◆ Parents' perceived value of different language learning outcomes for their young children is a very important consideration for advocates of mother tongue preservation and early education.
- ◆ Possible differences between what parents say they want and their actual language behaviours with their infants and young children are important for advocates of the primacy of mother tongue acquisition in the early years.
- ◆ Children's individual differences in learning styles, capacities, interests, motivation, and temperament may significantly affect the speed and quality of their language acquisition.

BI/MULTILINGUAL PROGRAMME MODELS

Bilingual and multilingual programmes are being implemented in countries around the globe - Somalia, Madagascar, Guinea Conakry, Burkina Faso, Cameroon, Tanzania, China, Ethiopia, Guatemala, the Philippines, and South Africa, to name a few. Programmes are also being documented and evaluated in Canada, the United States, Aotearoa/New Zealand, and various countries within the European Union. The policy environments and cultural and family contexts of these initiatives vary widely, as do the programme models and the resources to implement them. As research on this topic gains momentum, these innovations may yield fresh insights about the implications of different educational choices, how best to deliver them, and the implications of different approaches for governments, funders, teachers, and children.

Theoretical understandings about bi/multilingual acquisition, along with different goals for children's language development, have provided the rationales to develop and test a range of language-in-education models. Numerous other factors influence programme choices, including political agendas, costs, teacher training, standardized testing regimes, and so on. Table 1 describes the most common programme models. Many variations exist in the delivery of each approach, such as the number of months spent in transition and the amount of time devoted to mother tongue maintenance. Also, as some scholars note, the approach that educators say they are using does not often match what they are actually doing (Cziko, 1992; Thomas & Collier, 2002). Finally, Benson (2009) notes that some approaches cannot properly be referred to as bilingual education. For example, *submersion* completely ignores children's first languages, and *immersion* may be monolingual, using a language that children do not speak at home.

Table 1. Approaches to bilingual education

Mother tongue-based instruction
<ul style="list-style-type: none"> The learning programme is delivered entirely in children's L1.
Bilingual education (a.k.a. 'two-way bilingual education')
<ul style="list-style-type: none"> Use of two languages as media of instruction. Also known as 'dual language instruction,' in which minority and majority language children are taught in both minority and majority languages.
Mother tongue-based bilingual education (a.k.a. 'developmental bilingualism')
<ul style="list-style-type: none"> L1 is used as the primary medium of instruction for the whole of primary school while L2 is introduced as a subject of study in itself to prepare students for eventual transition to some academic subjects in L2.
Multilingual education
<ul style="list-style-type: none"> Formal use of more than two languages in the curriculum.
Transitional bi/multilingual education (also called 'bridging')
<ul style="list-style-type: none"> The objective is a planned transition from one language of instruction to another. 'Short cut' or 'early exit' is a term given to programmes that involve an abrupt transition to L2 instruction after only 2 or 3 years in school. 'Late transition' or 'late exit' refers to a switch to L2 instruction after a child has become fully fluent academically in L1.

Maintenance bi/multilingual education

- After L2 has been introduced, both (or all) chosen languages are media of instruction. L1 instruction continues, often as a subject of study, to ensure ongoing support for children to become academically proficient in L1. This is also called 'additive bilingual education' because one or more languages are added but do not displace L1.

Immersion or foreign language instruction

- The entire education programme is provided in a language that is new to the child.

Submersion (a.k.a. Sink or Swim)

- Where speakers of non-dominant languages have no choice but to receive education in languages they do not understand, the approach is commonly known as 'submersion' or 'sink or swim' (i.e., dominant language learning at the expense of L1). This approach promotes subtractive bilingualism: that is, L2 learning at the expense of L1.

Debates about bi/multilingual education models centre largely on the degree to which the child's L1 should be used in instruction of the curriculum. The other side of this debate concerns how and when in the continuum of schooling children should be expected to learn a second (or additional) language, and at what stage in the learning process children should be expected to receive academic instruction based in that second language. At one end of the continuum, the child is immersed in a language of instruction that is unknown to them. Some refer to this approach as 'submersion,' in the sense of 'sink or swim.' At the other end of the continuum, the primary language of instruction is the child's L1. Such programmes give priority to helping children to become fully fluent and literate in L1 before shifting (if ever) to instruction in L2.

Some programmes try to balance L1 and L2 exposure in a 'dual language model,' for example, teaching every other day in a given language, or having the class composed of approximately equal numbers of speakers of both languages to allow for peer teaching and modelling, didactic use of the language in curriculum instruction, and formal teaching of both languages as subjects.

Another model, which might be thought of as a 'transfer' approach, uses L1 as the medium of instruction, while also offering formal instruction in L2. Yet another model, which is a 'transition' or 'bridging' model, uses L1 as the initial medium of instruction, gradually introducing increasing amounts of instruction in L2, until L1 is phased out entirely. 'Maintenance' is another strategy which may be combined with bi/multilingual programmes: children receive formal instruction in L1 so that it continues to develop even after they are fully immersed in L2 as the medium of instruction.

What is the state of research-based knowledge about the effects of alternative programme models?

Questions about the effects of bilingual and multilingual education for young children are complex. Usually, outcomes depend on a host of factors, including: the age the child began learning the language(s); the language(s) spoken in the child's home; the status or prestige of the language(s); and how, when, and for what duration formal instruction was provided, not to mention critical issues about the political environment and the available resources for programmes.

Euro-western versus majority world contexts

Much of the research and meta-analyses of evidence for and against alternative models of language-in-education have focused on programmes in the United States (e.g., Krashen, 1996, 1999; Lee, 1996; Rossell & Baker, 1996), where English is the overwhelmingly dominant language in education, trade, law, and government. The United States has strongly assimilationist language and education policies, a comparatively rich resource base, and relatively high levels of teacher training. These contextual variables differ from those encountered in most education settings in the majority world, where there may be several national and regional languages and where many minority languages and dialects may be spoken locally and used for trade, but not as the medium of instruction in schools. Resources for school and teacher training may be scarce, and expectations for schooling may vary widely for rural versus urban children, and for girls versus boys. Thus, the generalizability of findings from American studies must be questioned.

Methodological issues

Many attempts at controlled empirical studies have methodological shortcomings, and inconsistencies abound across studies. For example, in a review of seven major evaluations of bilingual programmes, Cziko (1992) noted that this body of research cannot be used to draw any conclusions about whether bilingual education is necessary or successful. Of the seven studies Cziko reviews, only one includes research from outside of the United States. He cites several issues with the evaluations of the bilingual research programmes: (a) lack of adequate random-sampling procedures, resulting in questionable generalizations of findings; (b) lack of control of confounding factors in assessing treatment effects; (c) questionable reliability and validity of achievement measures, particularly when used for minority language students; (d) bias in the selection of studies for review; and (e) inappropriate use of statistical procedures in analyzing evaluation findings and synthesizing the results of many studies (as in meta-analysis). Outside the United States, much research to date has involved: (a) experimental designs with small sample sizes; (b) quasi-experimental designs afforded, for example, when adjacent regions in the same country implement different types of programmes for the same-aged children; or (c) observations of changes in children's capacities before and after a new programme model is implemented.

Outcome indicators

Evaluations of language-in-education models have assessed different dimensions of outcomes. Common outcome indicators have included: various tests of vocabulary and language proficiency; tests of literacy in the first and second language; primary and secondary matriculation rates; pass/fail and marks in secondary school following bi/multilingual primary school; various tests of cognitive development; and self-esteem/self-confidence. Qualitative methods are also common, including teacher and observer ratings and observations, as well as more impressionistic measures.

What do scholars conclude about mother tongue-based bi/multilingual early education?

While more evidence from large, carefully designed research is needed, existing studies provide a basis for developmental psychologists and linguists to draw some tentative conclusions of a general nature, as follows:

- (a) children's L1 is important for their overall language and cognitive development and their academic achievement;
- (b) if children are growing up with one language, educational provisions need to support them in becoming *highly proficient* in that language before engaging in academic work in L2; and

- (c) becoming highly proficient (e.g., achieving CALP, as reviewed earlier) appears to take *six to eight years of schooling* (i.e., at least until the end of primary year six).

Indeed, some educators argue that only those countries where the language of instruction is the learner's L1 are likely to achieve the goals of Education for All.

Benson (2002), a leading scholar in the field of bi/multilingual education, claims that worldwide, children's L1 has been established as the most efficient language for early literacy and content area instruction. Late transition to education in L2 is more effective than early transition. Furthermore, while the effectiveness of 'early exit' programmes is not well supported by research, children in these programmes have better outcomes than children in submersion programmes.

This perspective is echoed by Dutcher (1994), who draws several conclusions about the advantages of mother tongue-based education, drawing on extensive involvement in the field.

- ◆ Success in school depends upon the child's mastery of cognitive/academic language, which is very different from the social language used at home.
- ◆ The development of cognitive/academic language requires time (4 to 7 years of formal instruction).
- ◆ Individuals develop literacy skills most easily in a familiar language.
- ◆ Individuals develop cognitive skills and master content material most easily when they are taught in a familiar language.
- ◆ Cognitive/academic language skills, once developed, and content/subject material, once acquired, transfer readily from one language to another.
- ◆ The best predictor of cognitive/academic language development in L2 is the level of development of cognitive/academic language proficiency in L1.

These research findings are consistent with those reported by Cummins (2000), another leading scholar on this topic, and with anecdotal reports of the benefits of early mother tongue-based instruction in Mali, Papua New Guinea, and Peru, reported by UNESCO (2008c).

Does the language of instruction in early education contribute to children's psychosocial adjustment?

The comparative lack of academic success of minoritised and indigenous children stems in part from having to adjust to schooling in an unfamiliar language, compounded by the need to accept that their language and culture are not valued within formal education contexts. Many linguists, psychologists, and educators argue that respecting learners' cultural and linguistic backgrounds in educational settings is crucial in fostering their self-confidence as persons and community members, and in encouraging them to be active and competent learners.

Many studies show that mother tongue-based instruction can improve a child's self-esteem (Appel, 1988; Cummins, 1989, 1990; Hernández-Chavez, 1984). As Rubio (2007) points out, children perceive at an early age that languages are valued differently. When there is linguistic and cultural discontinuity between home and school, minority language children may perceive that language and culture are not valued—a perception that lowers their self-confidence and self-esteem and interferes with their learning (Baker & Prys Jones, 1998; Covington, 1989). In contrast, Wright and Taylor (1995) found that Inuit students educated in L1 (Inuktitut) showed increased self-esteem and cultural pride compared to Inuit children educated only in L2 (English or French). Educators in Africa have described many similar benefits of mother tongue-based bi/multilingual education, reporting that use of the learners' first language in school promotes a smooth transition between home and school, fostering an emotional stability that translates to cognitive stability. Such children learn better and faster, and retain knowledge longer (Kioko, Mutiga, Muthwii, Schroeder, Inyega, & Trudell, 2008).

It is often said that the mother tongue symbolizes a deep, abiding, even cord-like connection between speakers and their cultural identity (McCarty, 2008). Indigenous scholars in Canada (Kirkness, 2002), the United States (Greymorning, 1997), and New Zealand (Harrison & Papa, 2005) make frequent reference to connections between language, community, place, and time. While most parents want their children to get a good education, parents also hope that their children will maintain their love and respect for their heritage language and culture, and for their home community. As one parent in a mother tongue-based education programme in the North Solomons Province of Papua New Guinea said: “it is important to teach our children to read and write, but is more important to teach them to be proud of themselves and of us” (Delpit & Kemelfield, (1985).

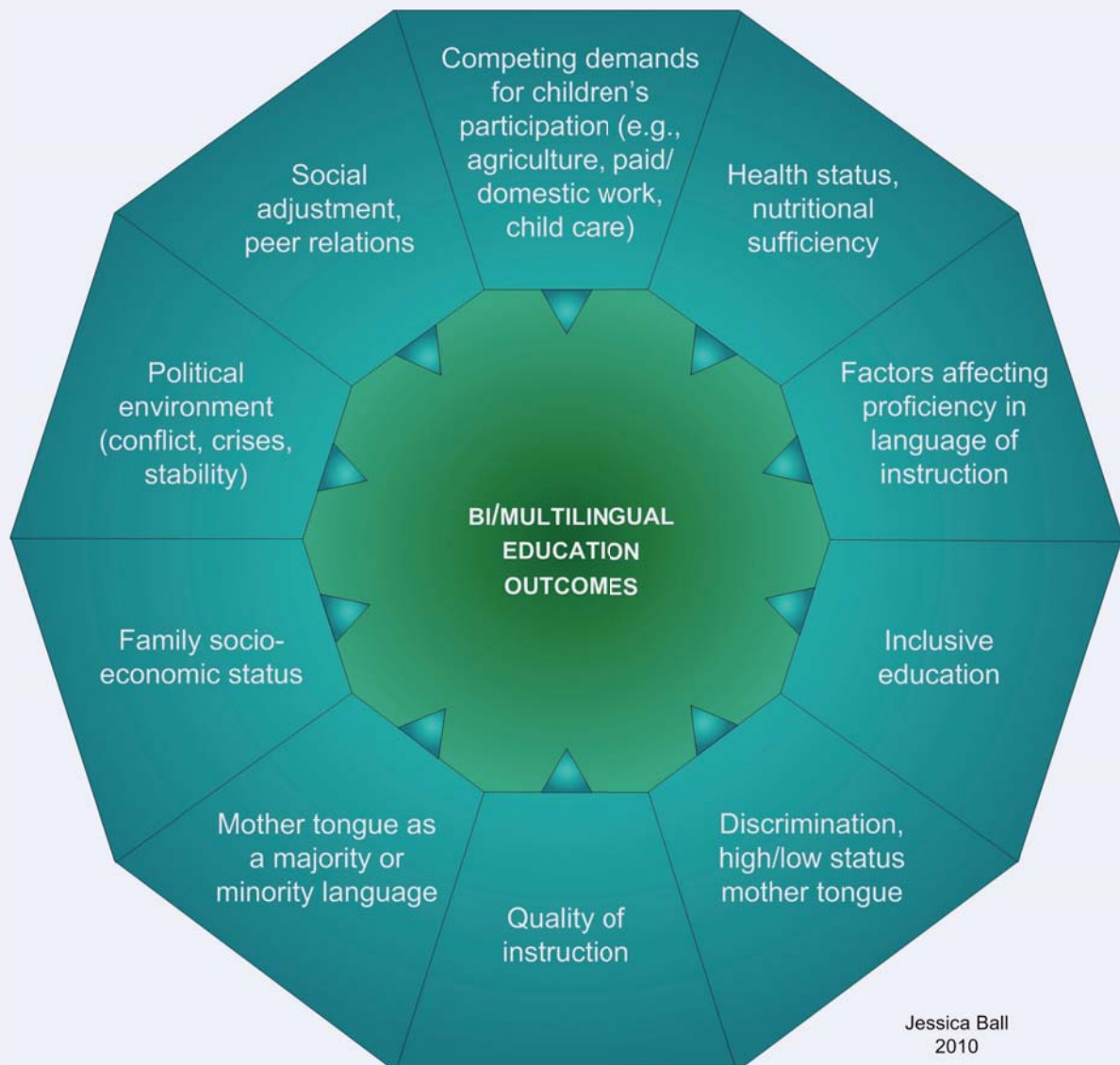
What is the relationship between the language of instruction in early education and children’s academic outcomes?

The relationship between the language(s) used for instruction in school and children’s ultimate academic achievement is complex. Education outcomes - such as regular school attendance, school completion, and academic achievement - are determined by multiple factors, shown in Figure 2.

Improving school success includes but goes beyond the language of instruction and supports for language acquisition. Other factors, such as poverty, with its attendant risk factors such as poor nutrition, high stress, and high stigma/discrimination, must also be addressed. Children who begin school in an unfamiliar language face the dual challenges of acquiring the new language while learning the curriculum in that new language. For some populations—for example, low status minorities, refugees, and the children of illiterate parents—other risks and stresses further exacerbate these challenges. Several studies note that minority language children often live in families of low socio-economic status, who have a higher risk of school failure on that basis alone. Further, Benson (2009) points out that gender considerations cut across these situations of educational risk: in most traditional societies, girls and women tend to be monolingual, since they receive less exposure to the national language through schooling, salaried labour, or migration, than boys and men. Longitudinal research with large samples and diverse, relevant demographic characteristics is needed to yield differentiated answers about the effects of language policies and programmes under varying circumstances.

The socio-economic and socio-linguistic status of minority language communities can affect the outcomes of bilingual education programmes. Few studies have been able to control for all the relevant variables, while also comparing academic achievement under different language conditions. Thomas and Collier’s (1997, 2002) seminal study is an exception to this trend. These investigators studied the educational trajectories of minority language speakers from school entry through eleventh grade in selected American schools, comparing the results of six different levels of educational support in L1. In the summary presentation of their findings, Thomas and Collier report that, on average, students with no mother tongue educational support finished between the 11th and 22nd percentile nationally, depending on the type of early education they received. Children who received one to three years of mother tongue instruction in the earliest grades finished, on average, between the 24th and 33rd percentile relative to national norms. Those with a full six years of mother tongue educational support finished, on average, at the 54th percentile, which is above national norms. Finally, those children placed in mixed classrooms with native speakers of English in which instruction was provided both in the minority language and English (with both groups of children learning both languages) finished, on average, at the 70th percentile, well above national norms.

Figure 2. Contributors to bi/multilingual education outcomes



Is there any risk that children could lose their skills in L1 if they are required to learn a different language as a medium of instruction in preschool, upon entry to formal school, or early in the primary years?

Several studies show that the mother tongue is fragile and easily lost in the early years of school. If support for mother tongue development is phased out too soon (e.g., the child is encouraged to learn one or more other languages as media of instruction), children do not continue to acquire competency in that language. Continued use of L1 into adolescence is an essential determinant of children's long-term proficiency.

Does being educated in a minority language that is the child's mother tongue impede development of skills in a majority language?

Learning through a mother tongue and developing literacy skills in L1 do not limit a child's capacity to develop skills in a second or majority language. Research demonstrates that maintaining first language abilities and enhancing them through the development of literacy and academic language skills in L1 actually leads to better academic outcomes in L1 (Palmer, Chackelford, Miller & Leclere, 2007), easier literacy learning (International Reading Association, 2001), and better outcomes in second language education (see e.g., Lindholm-Leary & Borsato, 2006).

The additive relationship between L1 and the majority language was demonstrated in Cummins' seminal (1986) study, which supported his interdependence hypothesis: that is, when children are supported in acquiring L1 to the point of developing *academic proficiency* in that language, they transfer this proficiency to the majority language, given adequate motivation to learn, and exposure to, L2. Cummins' findings are echoed in research by Riches & Genesee (2006), who focused on the interaction between first and second language literacy. They found that strong first language skills, especially first language literacy skills, were associated with long-term success in second language abilities for minority language children.³

Evidence from Mali also demonstrates that extensive use of L1 in bilingual programmes in the primary years results in better mastery of L2: between 1994 and 2000, children who began their schooling in L1 scored 32% higher in tests of their proficiency in the national language (French) at the end of primary school compared to children in French-only programmes (World Bank, 2007). In Zambia, a bilingual education programme called the Primary Reading Programme serves approximately 1.6 million primary school children each year. Between 1999 and 2002, these children's reading and writing scores in English showed a 360% improvement over the scores of children in English-only programmes, while their reading and writing scores in Zambian languages improved by 485% (Department for International Development, 2005).

How early, how long, and how intense does instruction in L1 need to be in order to establish a foundation for academic achievement and learning an additional language?

UNESCO (2006, p. 159) suggests that the transition to a language of instruction other than the child's L1 should not be required of students before *age 6 to 8 years*. Other reports on mother tongue-based programmes have concluded that children who learn in L1 *for the first six to eight years of formal schooling* have better academic performance and self-esteem than those who receive instruction exclusively in the official language or those who transition too early from the home language to the official language.

Several scholars, drawing on illustrative case examples, argue strongly that children should not be required to transition to instruction in L2 until they have achieved academic fluency and are fully literate in L1, typically around *primary year six*. For example, many studies have found that children in mother tongue-based bilingual education (a.k.a. development) and two-way bilingual programmes achieve greater proficiency in the majority language than children in transitional bilingual programmes or majority-language only (submersion) programmes (e.g., Lindholm 2001; Lindholm-Leary & Borsato, in press; Ramirez, Yuen, & Ramey, 1991; Thomas & Collier, 2002). This effect is especially robust in programmes that *continued use of L1 as the primary language of instruction into secondary school*. These findings provide evidence that, for minority language children, continued development of L1 in mother tongue-based bilingual programmes scaffolds the development of competency, especially literacy, in L2, as Cummins (2000) hypothesized.

How early is too early to begin formal instruction in a language other than L1?

Children typically need several years of instruction in a new language to use it in cognitively challenging academic tasks. Research demonstrates that requiring minority language children to transition too soon to education in a new language (e.g., a majority language) can be detrimental to their learning processes and their academic achievement (e.g., Porter, 1990; Rossell & Baker, 1996).

In short, research *counters* recommendations like those made by Geiger-Jaillet (2007) and others that “there should be equality between L1 and L2.” Rather, research and theory support the gradual introduction of L2, first through formal instruction in L2 as a subject of study, and subsequently, through the use of L2 in a gradually increasing number of academic subjects in the curriculum. However, this second step should not be taken too soon. Unfortunately, research support for *additive forms of bilingual education* has too often been misconstrued, unwittingly or deliberately, as support for ‘short cut’ transition programmes that require children to tackle the academic curriculum in the new language before they have developed academic proficiency in their first language (Benson, 2002, 2009; Thomas & Collier, 2002). In light of current research, it is important to clarify statements such as that by UNESCO that: “In fact, it is now assumed that the best programmes enable learners to continue to develop their ability to communicate and to learn in both languages throughout primary school” (UNESCO/Bangkok, 2007a, p. 4).

When the medium of instruction is the child’s mother tongue, when should one or more additional languages (e.g., the national language) be introduced?

As noted by Cummins (2000), spending *some instructional time* in a language other than L1 does not deter children’s academic achievement, but the additional language should be introduced *as a subject of study* in the curriculum, rather than as the medium of instruction for other curriculum subjects. Research suggests that children benefit from at least some periods of *formal instruction* in a language, during which their attention is directed to formal features of the language itself (e.g., phonological awareness, vocabulary, syntax), as opposed to simply being immersed in the language. Lightbown (2008) and others refer to this as the ‘intensity’ of exposure, as distinct from the ‘amount’ of exposure.

One of the most striking illustrations of the benefits of mother tongue-based primary education comes from education policy and outcomes during apartheid rule in colonial South Africa and Namibia from 1955 to 1976. As Heugh (2009) recounts, during this period, most Anglophone countries in Southern Africa were replacing initial mother tongue-based education with programmes based either in a single African language followed by a transition to English, or in English only. However, in South Africa and Namibia, the political intention of educational policy was to divide African peoples by ensuring that their children did not learn a common language. Thus, the whole primary school curriculum was translated from Afrikaans and English into seven South African and several Namibian languages. In secondary school, children went on to receive intensive instruction in L2.

Quite unintentionally, educational policy in South Africa and Namibia during this period produced greater educational success for African children with a variety of first languages than did supposedly more progressive educational policies elsewhere in sub-Saharan Africa. This policy effectively allowed children to develop both conversational and academic proficiency in L1 before they were required to learn L2. Under this policy, Heugh reports that by 1976, the secondary school leaving pass rate for African students rose to 83.7%. Moreover, according to Heugh, (2002), the per capita cost for this mother tongue-based education programme was a fraction of that for other African countries at the time. After the political revolt in 1976, the government radically shifted educational policy, reducing mother tongue-based education from eight to four years of primary school, followed by a transition to English. By 1992, the school leaving pass rate for African children dropped to 44% and English language proficiency declined as well (Heugh, 2002). Similar benefits for mother tongue-based instruction throughout primary school have been reported for Nigeria (Bamgbose, 2000) and Ethiopia (Heugh, Benson, Bogale, & Yohannes,

2007). These findings are consistent with theory, research, and experience on mother tongue-based bi/multilingual education around the globe (Thomas & Collier, 2002) and with case studies reported by UNESCO (2008b).

In summary, where data are available, findings consistently show that children who have the opportunity to receive their formal education in L1 for at least six years have higher levels of achievement than those who must transition too soon to education in a medium they lack the metacognitive skills to understand and use effectively in academic work (UNESCO, 2000; Mothibeli, 2005). Yet, internationally, the trend is towards early-exit from mother tongue-based bi/multilingual education and a ‘fast track’ transition to English or another dominant language.

In mother tongue-based bi/multilingual education, are there advantages to introducing L2 early or later?

While experience shows that young children can learn more than one language in their early years, an early start is no guarantee of eventual language fluency or permanent recall of the language. The vast majority of research on bilingual education has focused on school-aged children. Within the context of school-based education, existing research does not support the common belief that an early start will result in earlier proficiency in learning a language that is not a naturally occurring part of the child’s social environment. Early formal instruction is not as effective as a later period of intensive formal instruction (e.g., 400 hours per school year) when students are in the later primary grades and have already developed proficiency in L1 (Collins, Halter, Lightbown, & Spada, 1999; Lightbown & Spada, 1991, 1994).

For example, research in Spain found that, despite the same amount of instruction, bilingual students who started to learn English as a second language *later* performed better than bilingual students who started *earlier*, though younger learners showed more positive attitudes towards learning English (Cenoz, 2003; Garcia Mayo & Garcia Lecumberri, 2003). Young students eventually caught up when they were older and could draw upon their literacy skills and metacognitive development as effective school learners. From these and similar findings, Lightbown (2008) concludes that when it comes to learning a foreign language, both *age and intensity matter*. A later age—when children are both fluent and literate in their home language(s)—combined with more hours of exposure and formal instruction, support foreign language acquisition better than starting “drip-feed” courses earlier.

With the increasing importance of English as a global language and a vehicle of prosperity in trade, many parents want their children to learn English from an early age. However, there is little evidence of long-term advantage to an early start in the foreign language classroom setting. Studies of foreign language learning (for example, see Burstall, 1975, for a large-scale study of early foreign language learning in Britain) consistently report this finding.

Is there a linear relationship between amount of instruction in, or exposure to, the majority language and the level of L2 proficiency attained?

While children clearly need some exposure to a language to learn it, research does not support a ‘time-on-task’ hypothesis predicting a correlation between the amount of exposure to, and degree of proficiency in, L2, except in the very earliest stage of learning. For example, Lindholm-Leary and Borsato (2006) report on a study in the United States showing that by Primary year 4, minority language children in developmental bilingual programmes who receive a significant portion of instruction in L1 attain equal or higher proficiency in the majority language as compared to children in 50/50 bilingual programmes who receive more of their instruction in the majority language. However, when interpreting these findings, it is important to consider critical factors such as quality of instruction, socioeconomic resources, and the amount of exposure to the majority language in everyday life.

How do mother tongue-based bi/multilingual programmes affect academic outcomes?

Beyond language learning, evidence of superior subject-based (academic) learning outcomes of mother tongue-based bilingual education is accumulating. In northwest Cameroon, a longitudinal study of academic performance of children in Kom-medium classes found that children in first grade scored substantially higher on the test of oral English and on a general test of achievement than did children in the English-medium schools (Walter & Roth, 2008). In Mali, where a ‘Pedagogie convergente’ bilingual education programme has been operating since 1987, both language and mathematics achievement were superior in bilingual schools compared to monolingual schools (UNESCO, 2008c).

What kinds of pedagogies are effective in mother tongue based bi/multilingual programmes for young children?

As Beller (2008), Nicholas and Lightbown (2008) and others have emphasized, more research is needed to identify the most effective approaches to supporting second language acquisition and delivering bilingual curriculum in early childhood programmes. In particular, there is a dire need for research on effective mother tongue based bilingual programmes offered to children in pre-primary: most reports to date describe early outcomes of innovations in primary schools and outcomes at primary-school-leaving.

The success of mother tongue-based bi/multilingual programmes depends in part on the types of pedagogy used. For example, the literature on bi/multilingual pedagogy is preoccupied with the relative amount of time that should be spent focusing children’s attention on the formal aspects of language: Heugh (2008) and others (Abadzi, 2006; Macdonald, 2002) present evidence in favour of explicit teaching of reading and writing skills in L1, followed by explicit teaching of reading and writing skills in L2, using the model of additive bilingualism. They argue that this approach provides students with the necessary scaffolding to develop strong reading and writing in L1 and L2 (Heugh, Diedericks, Prinsloo, Herbst & Winnaar, 2007). The overwhelming focus of educational researchers has been on teaching over 7 years of age. Regardless of evidence weighing in favour of more or less emphasis on L2 instructional methods relying on reading and writing over listening and speaking, an emphasis on text is not suitable as a main approach for bilingual education of young learners (e.g., those in pre-primary and toddler programmes). Recommendations that can be gleaned from the few studies of early childhood initiatives are summarized below.

For some young children, L2 instruction in an early childhood programme may be limited to playful activities involving a few words, songs, or games in L2 as a small part of the programme, while for others, L2 may be the medium through which the programme is delivered. In either case, several studies have shown that young children’s L2 acquisition is better acquired in informal programme settings and in daily routines than in formal instructional settings. Nicholas and Lightbown (2008) and others explain that young children (under about the age of 8 years) do not learn a second language in the same way that older children and adults learn a second language. Also, their second language learning will vary depending on how much they have developed literacy in their first language (typically, not much before the age of 8 years). Nevertheless, young children who have learned a first language come into programmes where they are exposed to a second or additional languages with insights (although implicit) about the nature of language and the relationships between language and social context. Early childhood educators need to recognize the implicit understandings and skills that young children already have about language in order to build upon these strengths and maximize their potential for learning a second or additional language.

Practitioners and investigators have reported on young children’s willingness to innovate and ‘play’ with language, and to draw upon whatever resources are available to them in order to meet the communication demands of their interlocutors. Lightbown and Spada (1990) emphasize the need for early childhood practitioners to provide appropriately more complex language input for children, so that they discover the

regularities of the linguistic features with which they can play, and to avoid over-simplified varieties of the language to suffice. Nicholas and Lightbown (2008) suggest the use of games such as tongue twisters to explore pronunciation, and poetry or song to rehearse grammatical information. In a study of second language instructional strategies in preschools, Tabors and Snow (1994) identified the importance of a consistent and predictable organizational structure, a language rich environment in which teachers encourage both production and comprehension, and involvement of children in the programme who already speak L2, thereby ensuring that children have access to input and interaction with 'socially appropriate language partners' (p. 123). Following a review of age-related differences in second language learning, Munoz (2007) emphasized using language that is clearly contextualized and involves simple cognitive operations or action sequences.

Individual differences among infants and young children tend to be great and it is important for early childhood practitioners to observe and informally assess each child and respond with developmentally appropriate cognitive and language stimulation tailored to each child. Research shows that children go through several stages when acquiring L2 and that there is typically a stage in which they do not communicate much verbally at all. The duration of this stage seems to be longer for younger than for older children. A child-centred and individually responsive approach affords each child the time he or she needs without pressuring children to respond verbally. However, non-verbal communication should be interpreted by the caregiver and expressed in words. Children's telegraphic communications should be corrected and expressed by the caregiver using expanded verbal expression. Research shows that bilingual code-mixing - initially across short utterances and subsequently within longer utterances - is widespread among young children and generally should not be a cause for alarm or intervention (Genesee, Paradis & Crago, 2004). Children should be given linguistic as well as affective support to learn and use both their L1 and their L2 fully. Continuous, consistent, and rich exposure to both languages is important for full bilingual development. Early childhood educators must convey a positive attitude about children's L1, and reinforce the child's self-esteem as a bilingual learner.

How can teachers be recruited and trained to deliver mother-tongue based bi/multilingual programmes suitable for young children (i.e., under 8 years of age)?

Recruitment of effective early childhood care and development practitioners who are fluent in the mother tongue of children in a community is critical for programme effectiveness and is perhaps the greatest challenge for implementing mother tongue based bi/multilingual programmes for young children and their families. Practitioners must be found with appropriate knowledge and skill to deliver a play-based programme that is developmentally appropriate for very young children, and who are fully fluent in L1. This is not always possible, and flexible solutions must be encouraged to meet the needs of children and families in each community. In some communities, it may be possible to find community members who are fluent in the children's mother tongue and who can be given training in early childhood care and development on an in-service basis (i.e., while employed to deliver the programme). In some communities, it may be possible to recruit prospective practitioners and deliver a cohort-based training programme in early childhood care and development before they begin to work with young children and families (Ball & Pence, 2006). Practitioner placement must also be considered. Practitioners who speak a particular local language should be employed to work in locations where that language is spoken by young children and families. Where no trained practitioners are available who speak the mother tongue of children and families who can benefit from an early childhood programme, practitioners should be encouraged to enlist the assistance of community members who are trustworthy and who speak and (ideally) can read the local language, to work alongside the practitioner and to read to the children. In communities where programme sustainability depends on in-kind contributions from the communities, participation by local language speakers may be built in as a significant contribution. It is not uncommon to find community members, especially parents and grandparents, playing substantial roles in early childhood programmes both to assist with language translation and to enhance the local cultural relevance of songs, games, stories and other curriculum content for young children and families.

What are the implications of these findings for increasingly popular second language immersion programmes?

Immersion programmes began to gain attention following the success of French immersion programmes for Canadian English-speaking children in the 1960s (Lambert & Tucker, 1972). Since then, the success of immersion programmes has been widely documented (Genesee, 1987; Swain & Lapkin, 2005).

It is essential to distinguish between immersion programmes where students' mother tongue is a minority language with low prestige and programmes serving students whose mother tongue is a majority language with obvious value in their personal lives, future education, and work opportunities. In the latter case, mother tongue development outside school is virtually assured. This situation contrasts sharply with that of many minority language children, whose local language may be of lower priority than the majority language from a utilitarian standpoint. Thus, findings about immersion programmes in Canada and the United States may not be generalizable to immersion programmes for minority language children in the majority world. Immersion students from minority language groups may lose L1 ability when they have a substantial part of their education in L2, unless they are immersed outside of school in interactions using L1, and they receive formal instruction in L1 at school.

However, even for majority language children in immersion programmes, research shows that, compared to late immersion, early immersion does not necessarily result in better second language skills at the end of secondary school if learners do not have opportunities to continue to develop their second language skills throughout adolescence (Genesee, 1987; Turnbull, Lapkin, Hart, & Swain, 1998). Also, to develop native-like production skills, immersion students require some period of formal instruction in the language as a curriculum subject, in addition to being taught in L2.

Can children with atypical developmental conditions and learning challenges acquire multiple languages?

A goal of Education for All is to ensure quality education for all children, including those with atypical conditions or development (UNESCO, 2008c).

Genesee (1976, 1987) found a low correlation between measures of intelligence and measures of second language speaking and listening comprehension. That is, regardless of intelligence, children appear to be equally capable of learning to understand and speak a second language in their primary school years. However, children in immersion programmes appear to acquire written skills in L2 to an extent consistent with their measured intellectual abilities (Genesee, Paradis & Crago, 2004).

Researchers have found few differences between bilingual children with specific language impairment and their monolingual counterparts. Bilingual children with speech-language impairment do not acquire language more slowly than monolingual children with speech-language impairment. Rather, they will show the same patterns of impairment in both languages (Genesee, Paradis, Crago, 2004). Investigators in the field of speech-language pathology (Kay-Raining Bird, Cleave, Trudeau, Thordardottir, Sutton, & Thorpe, 2005; Thordardottir, Ellis Weismer, & Smith, 1997; Thordardottir, 2002) reported two studies suggesting that children with Down Syndrome and other serious learning challenges can become successfully bilingual.

While acknowledging the shortage of empirical evidence, Genesee, Paradis, and Crago (2004) speculate that, "All things considered, children with severe cognitive or sensoriperceptual challenges are likely to experience more success with dual language learning if they are preschool age and have more language exposure outside school than similar children whose second language learning is dependent on school experiences" (p. 53). Genesee (1987) and others argue that these children can become bilingual, given suitable ecological conditions to support their learning: motivation, a communicative context, and long-

term educational support. Available research indicates that these same ecological conditions facilitate bi/multilingual learning for all children.

Special considerations regarding endangered indigenous languages

Mother tongue-based education differs significantly from education in an indigenous language that is spoken rarely if at all in children's homes and communities. Nevertheless, many of the same hypotheses and trends that dominate research in mother tongue-based education are found in early studies of indigenous language education programmes.

Leading scholars on the world's languages (Crystal, 2000; Dixon, 1997; Krauss, 1998) predict that of the approximately 6,000 languages presently spoken in the world, perhaps only half to one-tenth will be spoken by the end of the 21st century (Crystal, 2000; Dixon, 1997; Krauss, 1992, 1998; UNESCO, 2008e). A series of colonial incursions across the globe (Nunan, 2003) has resulted in the loss or endangerment of hundreds of indigenous languages in a trend that some linguists have characterized as 'linguistic genocide' (Skutnabb-Kangas, 2000). As McCarty (2008) has explained, while indigenous children seldom learn their heritage language, these languages "are nonetheless languages of identity and heritage, and in this sense can and should be considered mother tongues" (p. 201). Increasingly, mother tongue bilingual education programmes for indigenous children are being implemented as part of a worldwide movement to recover, develop, and sustain indigenous languages.

In 2002 and 2003, UNESCO asked an international group of linguists to develop a framework for determining the vitality of a language in order to assist in policy development, identification of needs and appropriate safeguarding measures. This Ad Hoc Expert Group on Endangered Languages elaborated a landmark concept paper entitled "Language Vitality and Endangerment" (UNESCO, 2003b), which established the nine criteria shown in the diagram reproduced from the UNESCO Atlas of the world's languages in danger (2009).

Figure 3. Criteria for assessing language vitality



No single factor is sufficient to assess the state of a community's language. However, taken together, these nine factors can determine the viability of a language, its function in society and the type of measures required for its maintenance or revitalization.

Some scholars have suggested that the best indicator of the sustainability of a language is not the number of current speakers, but the frequency of intergenerational transmission of the language to the youngest members of a community (Barrena, Amorrortu, Ortega, Urgana, Izagiree, & Idiazabal, 2007, 2007; Norris, 2009). Over the past half century, indigenous peoples have worked to reclaim their languages and to promote language transmission to young children through a variety of strategies (Hornberger, 1996, 2002, 2005; McCarty, Watahomigie, & Yamamoto, 1999), including: curriculum development (Kirkness, 2002); teacher training (Jacobs, 1998; Johns & Mazurkewich, 2001; Suina, 2004); and the development of print, multimedia, and online resources (Morrison & Peterson, 2003; Wilson & Kamanā, 2001)⁶. Indigenous people have explored a range of delivery models, including:

- ◆ Immersion in early childhood programmes (Aha Punana Leo, 2004; Jacobs, 1998; McKinley, 2003; Durie, 1997; King, 2001; McClutchie, 2007);
- ◆ Indigenous language immersion throughout primary and secondary school (Wilson & Kamanā, 2001; Harrison & Pap, 2005);
- ◆ Bilingual schooling (Boseker, 2000; Desjarlais, 2001);
- ◆ Adult-focused indigenous language immersion (Hinton, Steele, & Vera, 2002; Greymorning, 2005; Maracle & Richards, 2002); and
- ◆ Community-wide social events created as communicative contexts for use of the indigenous language (Hermes, 2007; Sims, 2005).

Distinctive challenges

While heritage mother tongue programmes share many challenges with other mother tongue educational programmes, indigenous language education initiatives face several distinct issues (UNESCO, 2008e). Predominant challenges include:

- (1) Lack of research on effective approaches to heritage mother tongue transmission: Research on bilingual education with other cultural groups is not readily generalized to the indigenous language context. Most often, bi/multilingual programmes involve two or more relatively vibrant languages. Indigenous languages, however, are under severe threat in many communities around the world. Systematic investigation of the effectiveness of indigenous language transmission approaches is necessary to guide programme choices. Innovative pedagogies and resources need to be created and tested to ensure that programmes are motivating and relevant for each new generation of learners.⁴
- (2) Absence (or loss) of written versions of many indigenous languages: Many indigenous language groups have developed or are working to refine existing writing systems (Brand, Elliott, & Foster, 2002; Hinton, 2001). These efforts also involve modernizing indigenous languages to incorporate contemporary expressions and concepts to capture young people's attention and interest without reverting to the majority language (Anthony, Davis, & Powell, 2003; McIvor, 2006).⁵
- (3) Dearth of speakers of endangered indigenous languages: While many linguistic groups can turn to a homeland for support in language transmission efforts, indigenous people have only themselves to count on as linguistic and cultural resources. However, in many communities, there are few if any highly proficient speakers of the heritage language, limiting opportunities to practice the language in normative communicative contexts, to recruit effective teachers, and to develop a full range of age-appropriate resources.

- (4) Practical challenges associated with teaching children with mixed languages or vernaculars: Linguistic dominance fosters the conditions that promote the evolution of mixed languages, such as creoles and pidgins, as well as vernacular or localized varieties of the colonial language.⁶ Investigators of indigenous English dialects in Australia (McConvell, 1994) and Canada (Ball & Bernhardt, 2007, 2008) have documented the challenges for teachers when children in their classrooms speak one or more variety of 'Aboriginal English,' which may be perceived by uninformed teachers as deficient or delayed versions of 'standard' English (Gould, 2008; Moses & Wigglesworth, 2008). Creoles, pidgins, and vernaculars should be properly embraced as legitimate mother tongues and included in policies and programmes addressing language preservation and successful transitions to school (Malcolm & Kaldor, 1991).

Research findings on heritage mother tongue-based programmes

As the GMR (2008a) reports, bilingual education has been found to improve schooling outcomes of children from Indigenous communities in many countries (p. 120).

Research on the linguistic and academic outcomes of developmental, heritage mother tongue-based bilingual programmes must be interpreted with reference to the knowledge that learners in these programmes were already acquiring using the majority language from birth in their homes and communities.

An early study in a Canadian context assessed a Mohawk immersion programme (Holobow, Genesee, & Lambert, 1987). Students in this programme not only gained proficiency in Mohawk, but by Grade 4, after only one year of formal instruction in English, they performed comparably to their non-immersion Mohawk peers on standardized tests of English. These findings are consistent with those reported in a review of Indigenous language programmes across the United States (McCarty, 2002), in which children were reported to have developed proficiency in both their indigenous language (Navajo) and English.⁷ In brief, McCarty (2002) concludes that heritage mother tongue-based schooling can fulfil the dual roles of promoting and supporting students' proficiency in English and in working towards heritage language recovery.

Usborne, Caouette, Qumaaluk, and Taylor (in press) have found that skills gained in early instruction in the indigenous language are transferable to skills in a majority language. These researchers found that the greater the students' proficiency in Inuktitut during their early years of schooling, the greater their proficiency in French or English and Inuktitut in subsequent years. By contrast, in a longitudinal, experimentally controlled study, Wright, Taylor and Macarthur (2000) found that Inuit students who were educated entirely in English or French did not develop English or French skills that were equivalent to the Inuktitut language skills acquired by students in an Inuktitut-only language programme. In short, students who were not educated in their indigenous language were weak both in Inuktitut and the majority language, English or French. These findings are consistent with those reported for students in Mi'kmaq immersion programmes across Cape Breton, Nova Scotia: students who were strong in the Mi'kmaq language were also strong in English (Smith, Peck, Usborne, & Taylor, 2008).

Hawaiian-medium instruction has yielded equally impressive academic results. In the 1960s and 1970s, as part of a broader reform of civil rights, a 'Hawaiian renaissance' took root. In 1978, Hawaiian and English were designated co-official languages in the new state constitution, which also mandated the promotion of Hawaiian language, culture, and history (Warner, 2001). Parents and language activists established 'Aha Pūnana Leo,' family-run preschools that enabled children to interact entirely in Hawaiian with fluent speakers in 'much the same way that they were in the home in earlier generations' (Wilson & Kamanā, 2001). Parents of children in the Pū nana language nests successfully lobbied for Hawaiian-medium tracks in the schools, generating a need for ongoing recruitment and development of native-language teachers and materials. Hawaiian-based education now serves approximately 2000 students. Wilson and Kamanā report on the Nāwahīokalani'ōpu Laboratory School in Hilo, a full immersion programme extending from early childhood through high school, in which use of Hawaiian has priority over use of English (Wilson &

Kamanā, 2001; Wilson, Kamanā & Rawlins, 2006). Nāwahī students score as well as or better on standardized English tests than their non-immersion peers, and the school has a 100% high school graduation and college attendance rate.

Increasingly popular immersion programmes or language nests do not necessarily offer a model for mother tongue-based programmes that will meet the needs of all children and communities. These programmes often involve children learning a heritage mother tongue that differs from the language they have learned at home from birth. To date, there is insufficient evidence of the effectiveness of these programmes to rally large-scale support. However, well-established programmes such as the 'Aha Pūnana Leo offer a promising practice that should be implemented and studied in other language communities where there is demand and enough fluent speakers to support programme delivery. There are a range of possible programme models; as yet, which programmes are most likely to fit best and yield the best learning outcomes is a question that cries out for more research.

PARTICULARITIES OF MOTHER TONGUE-BASED BI/MULTILINGUAL EDUCATION IN THE EARLY YEARS

SCIENCE OF EARLY CHILDHOOD DEVELOPMENT

Scientific knowledge about the developing brain, the human genome, and the impact of early childhood experiences on later learning, behaviour, and health have converged to create a powerful argument for investing in programmes to provide optimal conditions for children's growth and development in the early years before formal schooling (Shonkoff & Phillips, 2000). These early years lay the foundation for a lifetime of learning, physical and mental health, responsible citizenship, economic productivity, and parenting the next generation. Optimal development refers to children's ability to acquire culturally relevant skills, language, and behaviours that allow them to function effectively in their current context and to adapt successfully to change.

THE SCOPE OF EARLY CHILDHOOD CARE AND DEVELOPMENT (ECCD) PROGRAMMES

Initiatives to support health and development in the early years range from prenatal nutrition and education programmes focused on mothers, to community-wide programmes for environmental safety and recreation for families. Policy reforms targeting the conditions for optimal early childhood development range from birth registration and parental leave policies, to labelling ingredients on food formulas for toddlers. Early childhood programmes range from in-home visiting to formal kindergarten. Mounting evidence supports the potential cognitive benefits of out-of-home (i.e., centre-based) early childhood programmes for children three years of age and older if these programmes are of high quality and congruent with children's language and culture (Heckman, 2006). Though there is some evidence to the contrary, the preponderance of evidence shows that families who are impoverished, facing high stress, and/or who lack access to safe, reliable, nurturing care for infants and young children are most likely to benefit from such programmes (Grantham-McGregor, Cheung, Cueto, Glewwe, Richter, & Strupp, 2007; Jolly, 2007; Magnuson, Ruhm & Waldfogel, 2006).

The research on early childhood development consistently shows that the nurturing and teaching style of the primary caregivers at home and in out-of-home programmes have the strongest influence on children's motivation and learning. Whether home- or centre-based, every kind of early childhood programme provides opportunities to increase awareness of the need to facilitate young children's language development and to support families in teaching their children their home language, whether it is a minority, majority, national, vernacular, or mother tongue heritage language. Research points to three important features of parent-child interaction that promote early language development: (a) supporting the child's initiative and autonomy in communicative interactions and responding with genuine interest and acceptance (Beller, Stanke, Butz,

Stahl, & Wessels, 1996; Cazden, 1974; Snow, 1977); (b) providing early and regular exposure to books, and especially, reading to children (Wade & Moore, 2000); and (c) asking targeted questions (who, what, when, where, how) about a child's experiences and expressions to stimulate conversational and narrative competence (Snow & Kurland, 1996). Parents and early childhood practitioners can be encouraged to use these guidelines in one-to-one interactions with young children. An intervention to stimulate early language development among 1-3 year-old children in German daycare centres successfully used these guidelines (Beller, Stahnke, Butz, Stahl, & Wessels, 2006).

As noted, the literature on programmes addressing bilingualism and multilingualism in children focuses overwhelmingly on children in formal education. However, we do know that the conditions that support children's language acquisition in their homes and communities differ markedly from those they encounter when they enter the formal, structured ecology of school. Further, children's cognitive development is significantly more advanced by the time they enrol in formal schooling—in particular, their capacity for metalinguistic analysis, which begins to develop around the age of 6 or 7 (Ferreira & Morrison, 1994).

LANGUAGE-FOCUSED POLICIES AND PROGRAMMES IN ECCD

Language promotion policies are seldom aimed at very young children, even though young children are most open, in terms of their attitudes, to learning different languages. A review of textbooks widely used in Canadian and American post-secondary training for early childhood educators found little or no mention of supporting language diversity among children in home- or centre-based programmes, even in texts that featured the term 'diverse world' or 'diversity' in the title. Early childhood educators receive little or no training in how to support children to continue to develop proficiency in L1 if it is not the language spoken by the practitioner and/or the majority of children in the programme. This is a significant gap in the field.

RESEARCH ON BI/MULTILINGUALISM BEFORE SCHOOL ENTRY

While decades of research in developmental psychology and linguistics have focused on how children learn their first language, almost no research highlights the conditions that support young children to learn more than one language in the early years. Although many children grow up in multilingual households and communities, few guidelines or models for early childhood programmes support children's bi/multilingual development, even in North America, where the resource development for the field of early childhood education is most abundant. In addition, few guidelines exist, through research, policies or structured programmes, which support primary caregivers to raise their children to be bilingual or multilingual, or to continue to develop L1 while participating in early childhood programmes delivered in a different language.

Several studies have suggested that preschoolers who are learning more than one language show delays in language acquisition. For example, a Canadian study (Thordardottir, Ellis Weismer, & Smith, 2003) compared the English language competencies of 11 monolingual preschoolers and 7 French-English bilingual preschoolers who had equal exposure to both languages and who were closely matched on variables such as maternal education and age. The bilingual preschoolers scored significantly lower on all measures. Several recent studies have documented the distributed nature of the early bilingual lexicon (e.g., Lin & Johnson, 2005), in which many words are known in only one or the other of the child's languages. The gap between monolingual and bilingual preschoolers is thought to close by school entry. However, methodologically sound longitudinal research with large, demographically diverse samples of young children is needed to determine the pace of bilingual acquisition in preschool-aged children.

There is little reported research on initiatives for families of infants and caregivers in early childhood programmes, beyond the studies of immersion programmes for indigenous populations reviewed earlier. The Indigenous language revitalization movement has stimulated a fresh look at how early childhood

programmes might assist, not only in the intergenerational transmission of children's heritage mother tongues, but in supporting minority language children to retain and develop L1 while preparing for formal schooling in a majority language. This emerging focus has raised new questions about which models work best to promote early bilingual acquisition, and about the people, training, and resources that are more supportive of this process in the preschool years.

Infant development workers, home visitors, family daycare providers, and early childhood educators need training, ongoing professional development, and resources to encourage them to support parents' use of L1 and bilingual/multilingual language acquisition in the home. In Canada, the Toronto District School Board distributes the DVD and booklet, *Your Home Language: Foundation for Success*, a resource produced in 13 languages. This material provides minority language parents with information about dual language learning, the importance of their home language, the nature of bilingualism, and the role of both mothers and fathers in working as a team to facilitate their children's bilingual language development (Chumak-Horbatsch, 2008).⁸ The contribution of storytelling to facilitate mother tongue development in the early years has been underscored, following findings reported by several investigators (Eickelkamp, 2008; Johnston, 2006; Kabadayi, 2005). Parents in bilingual or multilingual homes often find it easier to manage their different languages by using context specific communication systems, including a 'one parent-one language' practice, using a particular language in particular settings, or at particular times or occasions. There is no research to support or contradict these language management strategies in terms of the ease with which children learn, and research shows that children will tend to mix the languages they are learning across contexts (Genesee, Paradis, & Crago, 2004). However, if these are tools that families find useful, then there is no systematic evidence arguing against them.

Early childhood services in Wales offer a promising model of heritage mother tongue promotion. In Wales, every child has access either to Welsh-medium or bilingual schools, while English-medium schools teach Welsh as L2 from age five to 16 (Wyn Siencyn, 2007). The Mudiad Ysgolion Meithrin – the Association of Welsh-medium playgroups (www.mym.co.uk) have prioritized early bilingualism and the regeneration of Welsh cultural activities in their programmes. In addition to playgroups, the organization operates nurseries, immersion settings, and drop-in centres for infants, toddlers, and caregivers. The organization has trained over 300 early childhood practitioners in the Welsh medium to deliver Welsh immersion programmes.

Early childhood practitioner training typically develops an understanding that younger children do not reflect consciously on how they use language, including the definitions of words, how meanings are conveyed or change with various word choice or combinations, or how the languages they speak differ in terms of their structure or rules (Wehren, DeLisi & Arnold, 1981). In contrast, older children (over about 7 years of age) can reflect on language forms and rules in order to differentiate between two languages they are learning (Diaz & Klinger, 1991). Practice guidelines for early childhood practitioners recognize the distinctive way that preschool-aged children learn new things, although these guidelines in regards to learning a second language are very general. For example, early childhood practitioners are encouraged to: (a) promote children's efforts to communicate and to learn the main language spoken in the early childhood programme; (b) avoid mistaking language differences with communication deficits; and (c) avoid negative attitudes associated with their implicit hierarchy of language status (e.g., Dale, 1976; Edwards, 1981).

Tabors and Snow (1994) reported several instructional strategies that are effective in bilingual preschool programmes, including: a consistent and predictable organizational structure; a language-rich environment that encourages comprehension and production; and the involvement of children in the classroom who already speak the target language. Reflecting on age-related differences in second language learning, Munoz (2008) recommended adequate practice activities in L2 for both younger and older children. Activities for young children place greater emphasis on language that is associated with doing things, that is grounded in the context, and that involves simple cognitive operations or actions. Older children can benefit from strategies that separate language from immediate activities and that employ more complex cognitive operations.

Nicholas and Lightbown (2008) have also identified distinctive features of second language learning by younger (age 2 to 7 yrs.) compared to older children. They emphasize that while young children play with the forms and meaning of language, they often misinterpret signals about meaning and other people's responses because they do not yet have control of the features of the new language. In these circumstances, caregivers and teachers need to recognize and build on the children's knowledge of their first language.

Bilingual learning initiatives for preschool-aged children may especially benefit children who are already exposed to multiple languages in their homes. However, programmes that aim to teach children a majority language to prepare them for school, without at the same time supporting the continued development of L1, risk causing subtractive bilingualism—the largest concern associated with 'early start' programmes and curricula (see, for example, research reported by Lambert, 1974, 1980; Wong Fillmore, 1991a). As this literature review underscores, children's first language skills can be undermined or lost if they are not supported through formal instruction and/or practice with highly proficient and literate speakers of the language. If a child's mother tongue is not maintained and developed over time, he or she may someday be unable to use the language and, indeed, may have no memory of ever having known it (Pallier, Dehaene, Poline, LeBihan, Argenti, Dupoux, et al., 2003).

Learning an additional language at a young age does not guarantee success in the absence of appropriate didactic principles, adequate resources, and educational continuity. It is far better to provide intense L2 instruction at a later age than to risk the attenuation of first language development—especially when one considers what is at stake. Many minoritised and Indigenous children have difficulty making a successful transition to school and fall behind children of the dominant language and culture. Second language instruction to preschool-aged children must be done well and maintained over time to facilitate these children's academic success. Effective programmes can benefit children's cognitive development, while maintaining L1 and helping them to acquire a majority language that promotes their social inclusion. If, however, the resources for an effective and long-term commitment to early second language learning are unavailable, then it is better to delay second language instruction until the children are 10 or 12 years of age (i.e., beyond early primary school), when their first language proficiency can provide a strong foundation for learning an additional language.

Lightbown (2008, p.8) has summarized the research on early childhood bilingualism as follows:

- (1) Children are capable of acquiring two or more languages in early childhood.
- (2) Languages don't compete for "mental space" and bilingualism doesn't "confuse" children.
- (3) Given adequate input and opportunities for interaction, the developmental path and the outcomes of multiple language acquisition are similar to those observed in the acquisition of a single language.
- (4) Some cognitive advantages are associated with the development of proficiency in more than one language.
- (5) Early learning is no guarantee of continued development or lifelong retention of a language: languages can be maintained or forgotten, depending on circumstances.

The length of time and eventual outcomes of L2 learning and L1 maintenance depend on many factors, particularly children's motivation to fit in and to communicate with peers who speak either language. Indeed, as Genesee, Paradis, and Crago (2004) point out, given sufficient exposure, most young children, regardless of their general intellectual ability, are successful in acquiring L2 and additional language if surrounded by same-age peers who speak the language(s).

Similarly, early childhood and primary school initiatives that are strongly rooted in the children's homes and communities are more likely to be effective. The Kaugel First Language First education programme in the

Western Highlands Province of Papua New Guinea is a good example (UNESCO, 2007b). This programme was created in response to the Kaugel peoples' concern that their children, who spoke only their Kaugel language, were doing poorly in the English-only education system. They established a First Language First programme in which children learned to read and write in their own language before they entered primary school. The programme has been maintained for more than 20 years under the sponsorship of the Kaugel Non-Formal Education Association, comprised of parents and local leaders. After children have become proficient in reading and writing in Kaugel, they continue their education in the English school system.

TRAINING EARLY CHILDHOOD PRACTITIONERS FOR MOTHER TONGUE BASED BI/MULTILINGUAL PROGRAMMES

Much has been written about training early childhood educators, especially for kindergarten and early primary school, in majority world countries. The UNESCO (2007a) Global Monitoring Report, 'Strong Foundations: Early Childhood Care and Development' provides an overview of some major initiatives. Promising policies and programmes of training typically emphasize a shift from didactic, 'teacher-centred' and academically focused approaches to approaches that are participatory, 'child-centred', holistic and developmentally appropriate and encourage hands-on learning and learning through play.

Training initiatives often aim to increase the level of education of caregivers and teachers and the amount of training specifically in ECCD. For example, in China, in 1989 the government established an integrated professional training system with multiple forms and levels (e.g., pre- and in-service training, degree and non-degree, short- and long-term), in which kindergarten teachers must graduate from secondary schools and pass an examination that leads to a required early childhood teaching certificate (Corter et al., 2006; China Ministry of Education, 2003; Wong & Pang, 2002). Minimum education requirements, standardized pre-service training, and regulation are strategies used in many countries to upgrade the quality of programme provision as well as to build the public and political profile of ECCD and boost levels of participation. However, this can create a challenge in settings where it is difficult to recruit adults into employment in ECCD, where the baseline education level of most adults is low, and especially where there is priority on recruiting adults who are highly proficient in speaking and writing (where there is a written system) the mother tongue of children who the ECCD programmes are intended to benefit.

At the same time, there is understandable concern that mother tongue based ECCD programmes should not provide 'sub-standard' programmes delivered by under-qualified caregivers and teachers. This is a dilemma that must be negotiated in each setting, recognizing that quality of programme provision does not always depend upon the level of pre-service education and specialized training in ECCD. Trade-offs may be necessary at first while policies may maintain a goal of highly educated and specially trained staff. As Johnston and Johnson (2002) report, the best language speakers are often not trained as ECCD practitioners and may need support in bilingual instruction. In-service training is an approach that is practical, accessible to the practitioner, grounded in real-life examples and conditions, and potentially effective in many situations.

Despite positive trends in training and professional development of practitioners in ECCD, engaging parents and other caregivers more actively in children's development and learning and working with linguistically and culturally diverse children are two areas that have been identified as lagging behind (UNESCO, 2007a). Using the mother tongue of children and families may be a key to increasing parents demand for and involvement in ECCD. Evidence from Bolivia, Guinea-Bissau, Mozambique and the Niger shows that parents are more likely to communicate with teachers and participate in their children's learning when local languages are used (Benson, 2002).

Where there are no trained ECCD practitioners who are fluent in the mother tongue(s) of children in the programme, soliciting assistance from family and community members who are fluent in the mother tongue is a recommended approach. They can volunteer or be paid to assist in ECCD settings and also help to

support mother tongue language and literacy development in the home. For example, to address shortages of bilingual teachers in Western Europe (e.g., in Denmark, the Netherlands, Sweden and the United Kingdom), 'bilingual assistants' work in pre-schools with new immigrant pupils and their parents to help strengthen L1 and build familiarity with the official language (OECD, 2001). For example, speaking and listening activities, especially bilingual story-telling and reading may be effective. For example, the ECCD practitioner can read a story in one language, then in another. Monolingual teachers can engage children's family members in reading or telling stories in L1.

An effective parent involvement approach produced positive results in an early but still illustrative demonstration project in the USA in which Spanish speaking mothers were recruited as 'parent-teachers' within a bilingual-bicultural learning format in a programme for 2-3 year olds. Specific curriculum objectives were to enhance Spanish and English at auditory and oral levels, to enhance these skills via a Mexican American format, to instil cultural pride, and develop social skills. The programme was evaluated through pre-and post-tests administered to the children, observations of child participation during the language exercises, analysis of Spanish-English occurrences in the classroom, and an assessment of mothers' individual planning based on daily curriculum guides. The results showed increases and improvements on all four dimensions. Of particular note, mothers showed increased confidence in being able to provide effective assistance to their children's bilingual learning (Garcia, Trujillo, & Batista, 1974). Another effective approach that has been reported is to recruit older children to read to their younger siblings in L1 (Bloch & Edwards, 1999). Relying on family and community involvement is never a reason, however, to lose sight of the critical need to recruit multilingual community members into practitioner training programmes and to train monolingual practitioners in linguistic diversity.

RESOURCE DEVELOPMENT

Books and learning materials in other languages or dual-language books (even home-made ones) are important to promote bilingualism and to raise the status of the languages spoken by children and their families.

WORKING WITH FAMILIES

Effective education responds to the learning needs of individual children and the goals and needs of local families. Collaboration among all those involved in education is essential to achieving education for all. Unfortunately, early childhood practitioners typically receive little training, and often little incentive, to reach out to and collaborate with parents, community leaders, programme sponsors, or practitioners in other sectors. Parents, in particular, have too frequently been marginalized in the process of education. Their isolation is likely to be exacerbated in the case for parents of minoritized and indigenous children. While early childhood education training programmes typically include training on the importance of involving families, the focus of most current programmes is on how to deliver developmentally appropriate, child-centred programmes. Training for practitioners specifically for working in infant development programmes tends to be more family-centred, but these remain few and far between as most countries devote little funding to programmes for children less than 3 years of age. Thus, there remains a gap in understanding effective approaches to involving families.

Yet, families are the heart and hearth of children's early development. Parents and other carers are children's first teachers, and the home environment is where children are exposed to their first language or languages. When children attend programmes that are not primarily delivered in their first language, it is in the home where children can continue to develop their proficiency in their first language. Parents can provide the best insurance against the risk that children will lose their first language when they learn subsequent languages. Parents, and the community as a whole, can provide support and resources for early childhood programmes and primary school to provide mother-tongue instruction. It is imperative that the field of mother-tongue

based bi/multilingual education place as a top priority the training, delivery and study of effective approaches to involving families in young children's early education and transition to schooling.

Many studies have illustrated vast differences across cultures in parental beliefs about how children learn, their goals for children's development, and their approach to raising their children (e.g., Harkness & Super, 1996; Heath, 1993; Miller, 1988; van Kleeck, 1994). It follows that there is no one approach that will fit well in reaching out to and involving parents in mother tongue based bi/multilingual early education programmes in varying cultural contexts. A first principle of outreach to parents is to show respect, listen, and communicate openly with parents about the roles of language in their child's early development and the critical roles that parents play in supporting children's language development. Parents do not need to be steeped in the 'science of early childhood development' in order to effectively stimulate their child's language acquisition and help to prepare them for school-based learning. As reviewed earlier, research has shown that there are a few highly effective behaviours that parents can engage in to promote language development in the home (Hart & Risley, 1995). Parents and other carers can be urged to speak frequently to children, using a full version of the language, listen to children's talk and encourage them to expand on their commentaries, ask children questions about their everyday experiences (e.g., so-called 'W' questions – what, where, when why), and expose their children to print, especially by reading to the child. Once a child is participating in a programme outside the home, parents should be encouraged to continue to use their home language with the child, in order to ensure that the child continues to develop their proficiency in L1 and to protect against the potential for L1 attrition as the child begins to acquire second or third languages outside the home.

CHALLENGES AND OBSTACLES

Despite over 50 years of advocacy on the part of UNESCO (e.g., UNESCO 1953), mother tongue based bi/multilingual education is still unusual.

It is generally believed that this approach is too costly to implement, that it prevents children from learning other languages, and that it impedes children's academic success. Promoting minority languages is also thought to foster social and political division (Robinson, 2005). However, multilingual education can promote greater social tolerance among linguistic groups (Benson, 2002).

The foregoing literature review highlights specific challenges often faced in minority and indigenous language-based bi/multilingual education initiatives. Key challenges include:

- ◆ Students, parents, and teachers may resist schooling in L1.
- ◆ A multiplicity of languages in the community may exacerbate the challenge of providing mother tongue schooling for all children.
- ◆ People may disagree about which one of several different trade languages should be taught as the 'majority' language.
- ◆ The minority language community may have low status and be subject to discrimination and prejudice, making acceptance of mother tongue instruction difficult to win and creating reluctance among mother tongue learners to use and demonstrate proficiency in the language.
- ◆ Appropriately trained teachers may be in short supply, and there may be few speakers of the language who are proficient for academic instruction who can be recruited to teach.
- ◆ Lack of incentives for teachers.
- ◆ Educational resources in the language may be lacking.
- ◆ L1 may be an unwritten language.
- ◆ L1 may not be generally recognized as a legitimate language.
- ◆ New terminology for modern academic discourse may need to be developed.

The difficulty of implementing mother tongue based bi/multilingual programmes in the early years is a circular one. As long as there is a lack of political will to create and implement a policy allowing these programmes, the human resource capacity, curriculum and learning resources, and popular demand for these programmes will be lacking. The key step of formulating a national policy allowing mother tongue based bi/multilingual programmes and the implementation process for that policy will set in motion the gradual development of capacity, and resources as the languages are used in family centred programmes, early childhood development programmes, pre-primary, and throughout primary schools.

Pressure from parents to have their children taught in international languages for perceived economic gains is perhaps the greatest factor undermining the will of policy makers to push for mother tongue based bi/multilingual education. As long as children's first languages are not promoted in parent education and support programmes and in learning curricula and materials for young children, many parents will understandably persist with their perception that their home languages are not suited to contemporary economic, technological and educational processes, and they will not give priority to their home language as the *primary* language in raising their children to be ready for school and for life. At the same time, the cost of school failure among minoritized and indigenous children is immense. As reviewed earlier, high rates

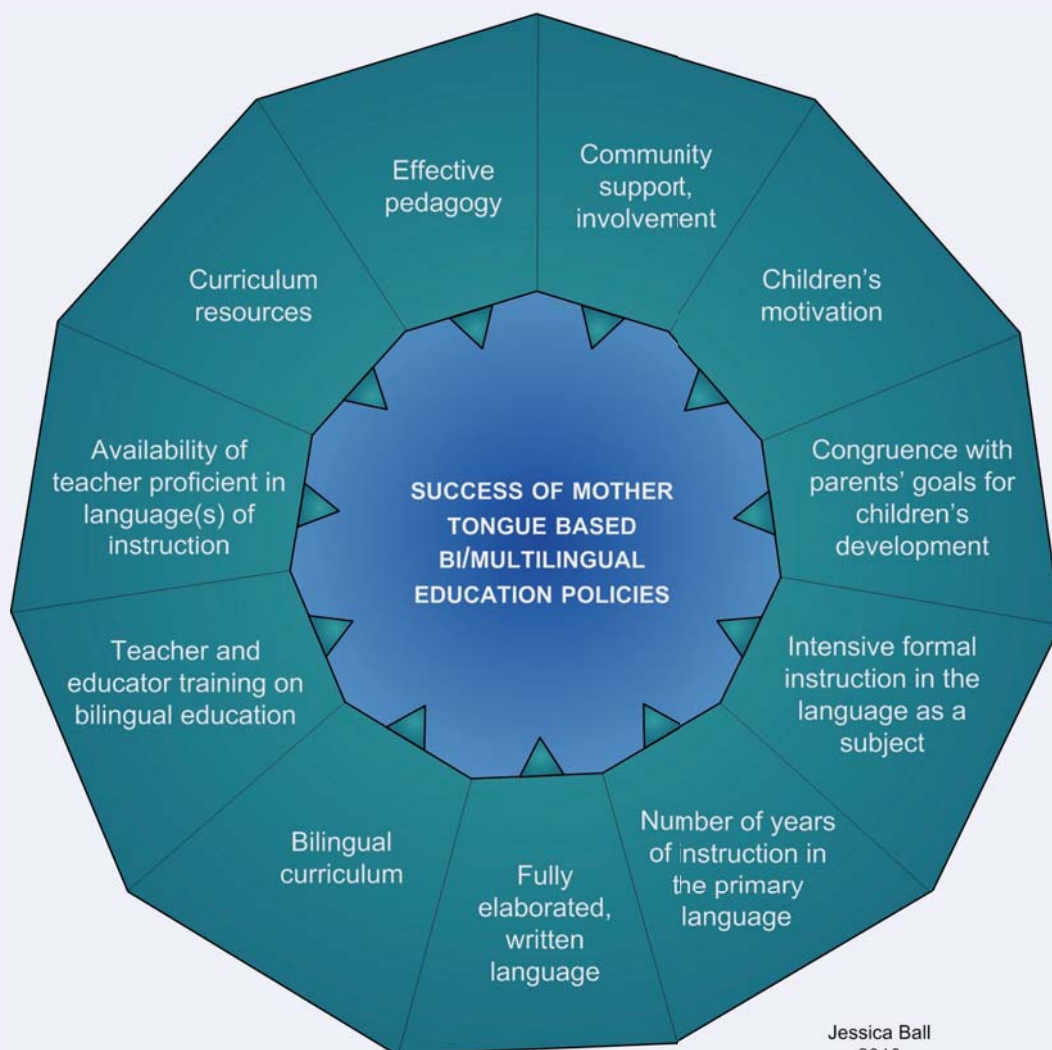
of failure are attributable in large part to offering education in languages that children do not speak, often using curriculum content and learning materials that children cannot relate to their everyday experiences. Awareness raising campaigns can help parents to understand the fundamental antithesis between valuing education for their children and devaluing mother tongue based education.

In many families and communities, young children grow up in multilingual environments. The challenge for education systems is to adapt to the complexities of multilingual children, families and communities, and to provide quality education that is responsive to children's needs, while balancing individual needs with the family's goals for children's development, as well as economic and political demands. Although uniform solutions, such as a single language of instruction, or delivery of "one over-arching curriculum to all classes" - in the manner suggested in Recommendation 32 of a UNESCO (2008d) concept paper on inclusive education - may be the simplest approach in terms of administration and management, engaging parents and children in education, and ensuring that children learn skills and knowledge that are relevant for their success in life, requires flexibility and adaptability in the provision of early childhood learning programmes.

GOOD PRACTICES AND LESSONS LEARNED

This review identifies several key parameters that can affect supply, demand, and outcomes of mother tongue-based bi/multilingual education initiatives. Figure 4 shows the multiple stakeholders and resource elements that need to come together to support success of mother tongue-based bi/multilingual education. The Pu_nana Leo programme in Hawaii (Wilson, Kamana, & Rawlins, 2006) is a good example of an effective, sustainable, and evolving heritage mother tongue based bilingual education programme in the early years that resulted from the intersection of many of these elements, including government policy, political will, language activism, parent demand, community involvement, teacher training, resource development, and cultural pride. The mother tongue based bilingual programme in Mali (Pedagogie Convergente, UNESCO, 2008c) and in Papua New Guinea (UNESCO, 2007b) also illustrate the intersection of these many factors.

Figure 4. Factors affecting success of mother tongue-based bi/multilingual education policies



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2010

COMMUNITY INVOLVEMENT

Early childhood and primary school initiatives that are strongly rooted in the children's families and communities are more likely to be effective. Parent demand was the impetus for the instigation of both the 'Aha Pu_nana Leo programme in Hawaii (Wilson, Kamana, & Rawlins, 2006) and the Kaugel First Language First programme in Papua New Guinea (UNESCO, 2007b). This grassroots demand was met by political will on the part of local government. The programmes were only able to get started through the participation of parents and other community members who were fluent in the children's first language and who were passionate about seeing the programmes succeed both in order to preserve their language and to turn around the high failure rate among their children in schools where they were being educated in a language they did not know. These programmes have grown exponentially over two decades and they continue to be governed in part by parents and local community leaders.

A COMMUNITY DEVELOPMENT APPROACH

Through the field of early childhood care and development, we have witnessed the demise of programmes that promote ideals and methods that are not congruent with parents' understanding of how children learn, what children need to learn, and their own roles in promoting learning. Successful programmes are more likely to be those that raise awareness of the potential for mother tongue based bi/multilingual early childhood programmes and primary school to help parents attain their own goals for children's success in life. Awareness can be advanced through small demonstration projects involving the children of 'early adopters', including collection and dissemination of evidence of the outcomes of these pilot projects in terms of children's retention and success in school. The value and viability of mother tongue based early education can be also be signalled through projects that involve parents in the creation of books and posters for children written in their mother tongue, and primers for children in early primary grades written in their mother tongue that children can bring home and share with their parents. Once interest is kindled, this must be met with local and national policy that allow and encourage mother tongue based early childhood programmes.

In many contexts in the majority world, the current upsurge of resistance to colonialism and revival of indigenous and other languages that have been suppressed through colonial policies and practices can be capitalized to encourage movements which afford priority to first languages.

The successful language revival movement in Wales is an example of this kind of grassroots language revitalization movement motivated by a desire to reclaim the language that was suppressed almost to extinction by British colonial insistence on English. The Mudiad Ysgolion Meithrin - the Association of Welsh-medium playgroups (www.mym.co.uk) have prioritized early bilingualism and the regeneration of Welsh cultural activities in their programmes. In addition to playgroups, the organization operates nurseries, immersion settings, and drop-in centres for infants, toddlers, and caregivers. The organization has trained over 300 early childhood practitioners in the Welsh medium to deliver Welsh immersion programmes. Children in Welsh medium early childhood programmes are assured of a smooth transition to formal schooling because the Welsh government provides every child with access to either Welsh-medium or bilingual schools, while English-medium schools teach Welsh as L2 from age five to 16 (Wyn Siencyn, 2007).

STRENGTHENING LOCAL CAPACITY FOR MOTHER TONGUE BASED EARLY CHILDHOOD PROGRAMMES

A national policy allowing and supporting mother tongue based early childhood programmes must invest in training candidates who are fluent in the mother tongue. These fluent and trained early childhood practitioners can play primary roles in infant and child development and family support programmes. Using a ladder career development approach, successful early childhood practitioners can be offered advanced

in-service or pre-service training to become early primary school teachers. A career ladder, community-driven approach was used successfully in strengthening capacity for early childhood education among indigenous peoples in Canada (Ball & Pence, 2006).

HARMONIZATION

Harmonization of closely related languages and dialects has been used in many locations around the world to address some of the practical challenges of mother tongue based education, such as teacher training and resource development (e.g., Prah, 2002). Sensitivities about whose dialect or orthography is privileged must be addressed, so that there is general acceptance by a variety of parents whose children will receive the developed materials and teaching approaches. This point has been emphasized by activists in sub-Saharan Africa (Kioko, Mutiga, Muthwii, Schroeder, Inyega, & Trudell, n.d.).

TRANSLATION

To meet needs for curriculum and resource development, translation of already approved and available learning material for various subjects is one approach that has been used effectively in some locations. For example, the Kenya Institute of Education produced one book and had it translated into the various languages, surmounting the economic obstacle of producing different books in every language of the students and satisfying the need for learning and teaching resources in a centralized curriculum. Translation played a similarly large role in the development of Kiswahili literature (Mulokozi, 2004).

COMMUNITY INVOLVEMENT

Involving community members has worked effectively in many instances to produce locally relevant resource materials and teaching strategies in L1, as well as to garner the enthusiasm and support of parents for mother tongue based programmes, while reducing the cost of producing materials in expensive, cosmopolitan contexts. For example, Inuit Elders and early childhood educators worked together on creating books in the local language (Inuktitut) and illustrated by community members, capturing stories that the community valued and wanted to pass on to their children, and pictures that showed familiar home environments, common objects, and local scenery (Avataq Cultural Institute (2006). In the remote, rural Kyrgyz Mountain Areas, a project called Reading for Children was launched in 2007 with a goal of providing opportunities for parents and other family members to introduce young children to illustrated books and stories in their own languages. The project worked with Kyrgyz writers and illustrators to create books in local languages (Aga Khan Foundation, 2008). As well, works by children, parents and teachers were selected and published under the title, 'The Book Written by Ourselves.' Community members are trained as facilitators of parent-child reading, and they deliver workshops for parents and other carers of 3 to 10 year old children. In Papua New Guinea, Klaus (2003) reports that the national government has been able to implement mother tongue based multilingual education in hundreds of local languages partly by involving communities themselves in the development of materials.

PARENT EDUCATION AND COMMUNITY AWARENESS RAISING CAMPAIGNS

Good pedagogy is responsive to local needs and goals for children. According to Baker (1996), the rationale behind language education is based on perceived priorities. Languages chosen for inclusion in education are those that are perceived to have some socio-economic or educational advantages over other languages. A mother tongue based bi/multilingual education in the early years should include L1 as well as at least one

other language that has socioeconomic advantage. Parents need to be assisted, through parent education, demonstration projects, and community-wide awareness raising campaigns, to see the value for children to continue to develop proficiency in L1, and reassured that, despite some initial delay in developing proficiency in the *lingua franca*, their children are more likely to succeed in acquiring both L1 and additional languages if they are given the opportunity to participate in mother tongue based bi/multilingual pre-primary and primary education.

Infant development workers, home visitors, family daycare providers, and early childhood educators need training, ongoing professional development, and resources to encourage them to support parents' use of L1 and bilingual/multilingual language acquisition in the home. In Canada, the Toronto District School Board distributes the DVD and booklet, *Your Home Language: Foundation for Success*, a resource produced in 13 languages. This material provides minority language parents with information about dual language learning, the importance of their home language, the nature of bilingualism, and the role of both mothers and fathers in working as a team to facilitate their children's bilingual language development (Chumak-Horbatsch, 2008).⁹

DOCUMENTATION AND EVALUATION

A clear lesson coming out of this review is that much more needs to be done to investigate promising approaches to training early childhood practitioners who are fluent in local languages and to implementing programmes using mother tongue based bilingual and multilingual approaches for young children before they enter primary school. These investigations must be holistic and longitudinal. As well, studies are needed to document and determine the effects of initiatives at the family level that promote mother tongue acquisition and maintenance from infancy and through children's formal education.

Efforts must be made to involve community members in these investigations so that they can see and judge for themselves the value of mother tongue based bilingual and multilingual education for supporting children's retention and engagement in schooling and their academic success. Evidence that children can succeed in school and gain the language skills and knowledge needed for their adaptation and advancement in the larger social and economic world is ultimately what is likely to increase parents' demand for and participation in mother tongue based bi/multilingual programmes.

RECOMMENDATIONS FOR UNESCO POLICY GUIDELINES

The foregoing analysis of the literature supports some general directions for UNESCO policy and programme support, illustrated in Figure 4. There is a great deal of literature on working with parents and other family members to support effective parent-child interactions, as well as a well developed literature on family and community involvement in choosing programme designs and participating in monitoring and evaluating programme delivery. These are foundations upon which to build the core strategies for working to promote mother tongue based bilingual and multilingual education in the early years.

KEY ELEMENTS

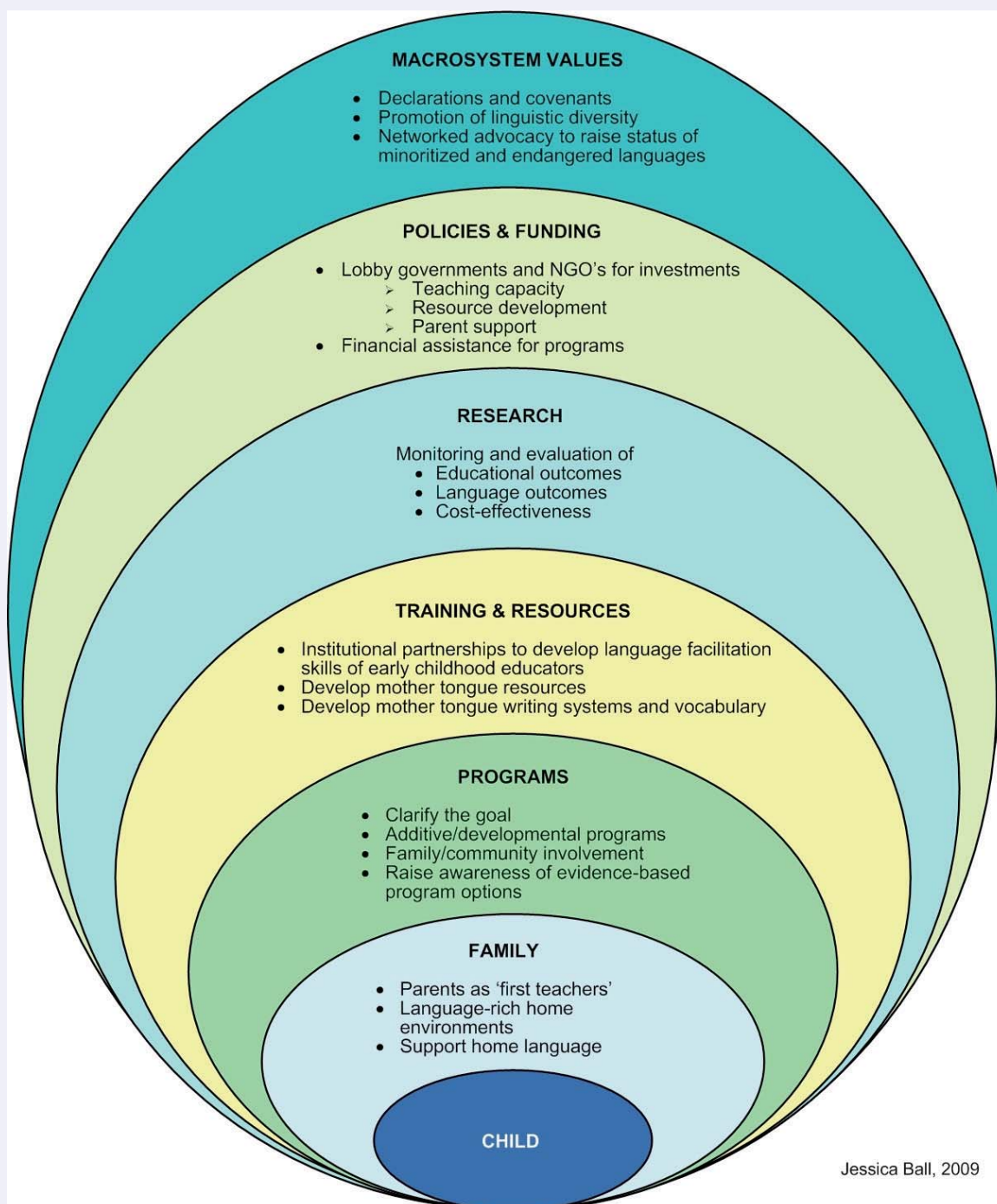
To help inform policy guidelines, this analysis concludes with recommendations for policy guidelines, including key elements and a suggested outline. Highlights of the recommendations are to:

- ◆ Carry out awareness raising campaigns on the importance of the development and use of mother tongue-based instruction.
- ◆ Support the critical role of governments in promoting effective mother tongue-based bi/multilingual education programmes.
- ◆ Promote clear, sustained political commitments to bi/multilingual education in policy frameworks and administrative contexts at national and local levels.
- ◆ Encourage mother tongue development to the level of cognitive academic language proficiency to scaffold additional language learning.
- ◆ Recognize mother tongue acquisition, rather than acquisition of a dominant national or international language, as the first priority in judging children's achievement in preschool and throughout primary school.
- ◆ Recruit teachers who are fluent in the language of instruction at the level of cognitive academic language proficiency in reading, writing, and speaking.
- ◆ Provide pre-service and in-service teacher education to ensure that teachers can engage in effective pedagogy, be culturally competent, have subject-matter knowledge for the academic level they teach, and can teach energetically with very young children.
- ◆ Support pedagogical improvements to facilitate the success of the language-in-education model.
- ◆ Promote policies that position parents (and other family members) as 'first teachers' and that engage parent and community involvement at all stages of programme planning, implementation, and evaluation.
- ◆ Promote precision in the use of a common conceptual vocabulary for describing language-in-education models to avoid confusion between early-exit (subtractive) and late exit (additive) bilingual education.

ANNOTATED RECOMMENDATIONS

Figure 5 shows the spheres of influence within which UNESCO can act to promote quality mother tongue based bi/multilingual education programmes in the early years. Key strategies within each sphere are elaborated subsequently.

Figure 5. Spheres of influence on mother tongue based bi/multilingual programme success through policy and programme support



RECOMMENDATIONS REGARDING THE CHILD

Learning requires a basic level of health and psychological readiness to learn on the part of the child. Societies should ensure that young children's learning capacity is optimized through the provision of nutrition, health care, general physical and socio-emotional support required to participate actively in and benefit from their education. UNESCO reiterates its recommendations regarding provisions for optimizing inherent children's learning capacities set forth in 'Strong Foundations: Early Childhood Care and Education' (UNESCO, 2007a).

RECOMMENDATIONS REGARDING THE FAMILY

Learning does not take place in a vacuum. Learning outcomes depend greatly upon the quality of the environment in which a child is growing and developing. National and local leaders should examine what factors outside of early childhood programmes and formal schooling are affecting children's capacities to learn, and how to influence these factors. Among the most salient and influential aspects of a child's early learning environment, parents or other primary caregivers are no doubt the most potent.

Support parents as children's 'first teachers'

UNESCO affirms the critical role of parents as children's first language teachers, raise awareness of parents' need for information about dual and plural language acquisition, and encourage parents to give priority to their children's acquisition of L1. At the same time, UNESCO promotes controlled comparative research to investigate the impact and value of different strategies to support parents' roles.

RECOMMENDATIONS REGARDING PROGRAMMES

Underscore the goal of mother tongue-based bi/multilingual education programmes

UNESCO seeks to establish operational definitions of what is meant by 'learning' a mother tongue and a majority language. Cummin's (1984) operational definition of 'cognitive academic language proficiency' (CALP) clarifies that 'learning a language' means being able to speak, read, and write fluently on academic (or complex) topics. If this is the goal of language-in-education policies, then programmes designed to support mother tongue development should do much more than support rudimentary competency in L1.

UNESCO (2003a, 2008a) emphasizes the central role of mother tongue instruction in achieving quality Education for All and affirms research demonstrating that use of L1 is crucial to effective learning in school. At the same time, UNESCO (2003a) has a stated commitment to the use of "multilingual education" to support full participation in the regional, national, and global economies and social worlds. These position statements should not be misconstrued to mean that UNESCO accepts 'short cut' transition or transfer programmes into L2; rather, UNESCO advocates for the fundamental role of literacy and academic proficiency in L1 as the foundation of academic success in any language. UNESCO holds that children ought not to be compelled by language-in-education policies to sacrifice their right to develop L1 in favour of acquiring a majority language. 'Short cut' transition programmes tend to result in subtractive bilingualism. UNESCO works to raise awareness of the need to support children in becoming fully literate and highly proficient in their first language to create a foundation for the acquisition of additional language(s).

Clarify the number of years required to become proficient in a language

Creating a strong linguistic foundation typically requires at least six years of formal schooling in L1 as the medium of instruction. Current research calls for a revision of UNESCO's guideline of providing mother tongue instruction up to age 6 to 8 years, pointing instead to the need for mother tongue instruction up to primary year 6 or 8.

Emphasize additive/developmental and maintenance programmes

Mother tongue-based bi/multilingual education is rare in most parts of the world. When children are continuously learning and using L1 in their homes and communities, education in an additional language does not necessarily threaten L1. In these situations, various additive/developmental programme approaches should support children to continue developing their proficiency in L1, while learning a majority language. UNESCO aims to raise awareness of the need to support the development of cognitive academic language proficiency in L1 through a period of intensive, high quality formal instruction in the language as a curriculum subject.

Promote family and community involvement in planning, implementation and evaluation processes

UNESCO aims to raise awareness of the need for programme design, delivery, and evaluation methods that involve the community. Parents and other community members are the key stakeholders in policy decision-making about approaches and programmes that will be supported with funding, advocacy, personnel, and resources. Programme choices should respond to the particular goals and needs of the population being served, as well as the circumstances and resources available (Baker & de Kanter, 1981). Relevant, responsive programmes are more popular, effective, and sustainable when they are grounded in the needs and desires of the community members whose children are the intended programme beneficiaries. Among other advantages, community-involving implementation processes promote community members' identification with the formal education process. Moreover, each teaching method should be tested and evaluated in each new situation. As Benson (2009) emphasizes, models developed to accomplish certain aims in one sociolinguistic context do not necessarily accomplish the same aims in a different context.

RECOMMENDATIONS REGARDING TRAINING AND RESOURCES

Support development of resources for parents, early childhood educators, teachers and children

UNESCO advocates collaboration between minority language communities and organizations and agencies to develop resources to support mother tongue-based education in preschool- and school-aged children. Minority language communities have the single most important resource for mother tongue-based education programmes: fluent speakers of the language. However, minority and endangered language communities cannot go it alone. As reported by UNESCO (2008b), successful mother tongue-based education programmes often involve several key collaborations between minority communities and outside organizations and agencies. Malone (2003) suggests a generalized curriculum development resource that could be adapted in community-based education programmes to support culturally appropriate instruction. Sharing a similar motivation, Bonset and Rijlaarsdam (2004) have developed a tool for teachers to redevelop mainstream curricula to better support mother tongue-based bilingual curricula.

It is recommended that at a national level, a programme of training for early childhood practitioners be created that prepares staff to support mother tongue maintenance in the home and to deliver mother tongue based bilingual programmes in communities. This programme should be delivered in communities with modifications made in each delivery setting to incorporate local knowledge and adjust programme ideas and practices to local circumstances, languages, and needs.

There are many early childhood training programmes around the world that emphasize play-based, child-centred, developmentally appropriate practices that can be drawn upon, carefully selecting those elements that are culturally suitable and those that need to be revised to fit local understandings about how children should be supported during their early years, roles of family members, and local circumstances. No training programme should be wholly imported from a foreign context.

Priority should be placed on recruiting candidates for training who are fluent in the local language and who have other capacities that make them well suited for work with the young children and families who are the intended beneficiaries of the ECCD programmes. Incentives are also needed to attract and retain these especially qualified individuals.

Partner with institutions that provide teacher training to develop language teaching capacity among early childhood educators

UNESCO advocates collaborations among government and non-government agencies with universities, colleges, and other teacher training institutions to create and deliver innovative, specialized programmes to train mother tongue speakers to work as teachers of very young children, including preschool-aged children. Some emergent training models include the collaborations between Pūnana Leo and Hawaiian universities (Wilson et al., 2006, p. 42), and the partnership between First Nations in Canada and the University of Victoria in developing a certificate programme in teaching indigenous languages (Ball & Pence, 2006).¹⁰

Support development of writing in L1

UNESCO encourages the development of writing systems for mother tongue languages, where written forms do not exist. A written form of L1 is a prerequisite for using the language in formal education. UNESCO encourages interested minority communities to work with linguists and others to develop alphabets and to standardize and update terminology and spellings across varieties of the language, drawing on linguistic research and corpus planning.

RECOMMENDATIONS REGARDING RESEARCH

Support research that is respectful and useful in communities while also contributing to knowledge

UNESCO calls for efforts to fill the gap in research on mother tongue-based bi/multilingual early education practices. As Malone (2003) emphasizes, in the area of language-in-education, research needs to identify the practices of effective practitioners in their everyday work with children.¹¹ A host of issues require clarification, including: What do mothers and fathers do to support speech and language acquisition in their homes, including mother tongue, heritage mother tongue, and bi/multilingual learning? How do children's language skills develop when they enter early childhood programmes, and subsequently formal schooling, and encounter different languages? Research on such questions is urgently needed—funding decisions are already being made about the pros and cons of various 'immersion' and bilingual early childhood programmes, based on very little research. Future research should be conducted in collaboration

with families and/or early childhood programmes, following a rule articulated by many minority groups: ‘Nothing about us without us!’ (Ball, 2005). Studies of mother tongue-based bi/multilingual education extend our understanding of language acquisition and maintenance, while providing insights about practical strategies to facilitate and support bilingual and multilingual language acquisition in young children.

Help to develop monitoring systems to accumulate and showcase evidence of cost effectiveness

UNESCO seeks to allay fears about the costs of mother tongue-based bi/multilingual education. Government leaders need to know that mother tongue-based bi/multilingual education programmes can be cost-effective after the necessary start-up investments in teacher training and resource development have been made. Available outcome data indicate superior outcomes for children in these programmes, as reflected in multilingual learning and matriculation rates of both majority and minority language children. Indeed, a 2007 report of a UNESCO (2007c) meeting on enhancing learning identifies research and development activities to be promoted by UNESCO and other partner organizations, including generating a robust knowledge based on learning in varying conditions in developing countries, drawing lessons learned (UNESCO, 2007c). This report stressed that these efforts should lead to effective collaboration and knowledge sharing networks involving north-south and south-south researchers and organizations.

RECOMMENDATIONS REGARDING POLICIES AND FUNDING

Engender political will

The political environment of mother tongue-based bi/multilingual education largely determines its success or failure. Clear, sustained political commitment from national and local authorities is critical, as demonstrated in policy frameworks, administrative contexts, and public announcements. Low political will may be manifest in low financial backing and/or regressive policies relating to mother tongue-based bi/multilingual education. UNESCO can play an important role in building the political will for governments to create, enact, and resource progressive policies and programmes.

Encourage long-term financial planning and external financial assistance when needed

UNESCO can encourage outside agencies to fund efforts to implement or maintain promising mother tongue-based initiatives. The introduction of mother tongue-based bi/multilingual education has financial implications. Long-term financial planning and commitment are essential, especially in the initial stages. The processes necessary for an effective programme include: development of minority languages, development of teaching and learning resources for minority languages, and the training of teachers and other personnel to develop, implement, and monitor mother tongue-based bi/multilingual education policies. While the benefits of a thorough approach to mother tongue-based education can outweigh the costs (UNESCO 2008b), some governments may not be able to provide the necessary financial support because of low revenues and several competing priorities, and may require additional support.

Lobby governments and NGOs for investments to develop teaching capacity

Mother tongue-based bi/multilingual education requires adults who are highly proficient in L1 and L2, and who are also effective as educators of very young children. Individuals with this combination of skills

are rare, especially in settings where L1 is endangered. UNESCO urges governments and NGOs to provide competitive salaries and benefits, incentives, recognition, and ongoing training opportunities to adults with these skills.

Cultivate partnerships

UNESCO (2008b) has found that successful models of bilingual education require the collaboration of a range of participants with different kinds of skills, interests, resources, and availability. Essential partners are local organizations that provide parent education and support and early childhood programmes, as well as local schools and educational governing structures. Other important partners include regional educational governing structures, national governments, and donor organizations. UNESCO will help to mobilize partnerships with early childhood educators and teaching training institutions that develop capacity for working with parents and delivering programmes to young children.

MACROSYSTEM VALUES

Network with other advocates

UNESCO will continue its work with other supporters of mother tongue education and language revitalization (e.g., SIL International, NORAD, ACALAN, and others) to raise the status of minoritised languages and the profile of successful mother tongued-based education programmes. Advocacy is necessary to change the perception that minoritised languages are inferior to majority language(s) and that children's education and life chances will suffer if parents emphasize L1(s) at home and at school. As Trudell (2008) notes, advocacy is required at multiple levels, including in communities, with social elites, with government officers, and with those with power over financial and knowledge resources.

CONCLUSION

UNESCO has long recognized that the language of instruction as well as knowledge of languages play key roles in learning. In order to promote quality in children's opportunities to learn, UNESCO's Global Monitoring Report (2008a) underscores the need to "recognize the importance of mother tongue instruction in early childhood and the first years of primary school" (p. 4). In addition to the goal of equitable access to educational achievement for all, UNESCO advocates that the goal of protecting children's first languages and preserving the world's linguistic diversity also requires intensive efforts to ensure that children have the right to learn in their mother tongue. Contemporary issues in language maintenance and the goal of Education for All call for immediate practical solutions to increase the availability of quality mother tongue based bi/multilingual education for young children. The current review was undertaken with a view to informing efforts to operationalize the existing normative frameworks, established in several United Nations human rights conventions and other standard setting instruments cited at the outset of the current review.

While more evidence from methodologically sound, longitudinal research with varied samples of children and teachers is needed, existing studies provide a basis for developmental psychologists and linguists to draw some tentative conclusions of a general nature, as follows:

- (a) children's L1 is important for their overall language and cognitive development and their academic achievement;
- (b) if children are growing up with one language, educational provisions need to support them in becoming *highly proficient* in that language before engaging in academic work in L2; and
- (c) becoming highly proficient (e.g., achieving CALP, as reviewed earlier) appears to take *six to eight years of schooling* (i.e., at least until the end of primary year six).

Indeed, some educators argue that only those countries where the language of instruction is the learner's L1 are likely to achieve the goals of Education for All.

Existing research suggests that mother tongue-based bilingual education programmes benefit children's language skills and overall academic achievement, along with their self-confidence and cultural pride. Mother tongue-based bi/multilingual programmes enable learners to begin their education in the language they know best. Later, a *lingua franca* and an international language can be introduced as subjects of study and eventually as additional media of instruction. Research shows that in programmes where children's overall educational achievement is superior to children educated only in a majority language, the children receive instruction mostly in L1 throughout primary school, are introduced to a majority language as a subject of study during primary school, and continue to develop their ability to communicate and learn in both languages throughout secondary school.

UNESCO recognizes that acquiring a language involves learning the culture that is expressed through the language. Using a home language preserves cultural identity, while acquiring additional languages promotes intercultural communication and understanding. In situations where a community is struggling to maintain or revive a threatened minority or indigenous language, meaningful and effective education in this language can have very positive linguistic and psychological effects.

UNESCO acknowledges that many families want and expect their children to become proficient in L1 and to become bilingual or multilingual, whether they are developing typically or have learning difficulties or developmental disorders. The current report provides an overview of research on some of the more pressing questions that policy-makers must consider in deciding how best to support children's rights to mother tongue education, equitable opportunities for academic achievement, and parents' goals for their children's language acquisition. Theory, research and experience in the field support the principle that no one approach will be best in all circumstances. Parents of very young children need to have choices about which language(s) they will use to socialize their children and which language(s) will serve as the media for their children's formal education. However, families need access to the best available information, presented to them in a way that is readily understandable, about the potential impacts of different educational choices upon their children's linguistic and educational outcomes and, ultimately, their capacity to succeed in life (Tembe & Norton, 2008). UNESCO identifies this as area where immediate investments in awareness raising campaigns could yield increased demand for mother tongue based bi/multilingual family support, infant development, and early childhood learning programmes. There are several documented examples from around the world where parents' demand, grassroots activism, and community-level contributions in the form of parent participation and production of learning materials have influenced policy makers to allow and invest in mother tongue based early learning initiatives.

UNESCO emphasizes that bi/multilingual education programmes will only be effective if they are delivered by skilled early childhood educators and teachers who are fully fluent in L1 and who have access to language-rich resources, including an extensive written version of L1. In addition, children must be motivated to learn L1 and be encouraged by their parents to do so as a first priority of their education. In many settings, investments are necessary to promote discussions among parents and other community members about the perceived value of L1, including their hopes and concerns about the use of their home language in their children's early years and throughout primary school. Home-based, family-centred language acquisition is the foundation of children's success in early learning and formal schooling. Some of the most successful documented programmes feature opportunities for parents to develop proficiency and literacy in L1, so that they can facilitate their children's first language acquisition.

Discourse about language in education goes well beyond educational policy. The issue of mother tongue-based instruction is technical, political, and ideological—and for parents and communities, extremely personal as well. While supporting the academic success and linguistic empowerment of minoritised children is an oft-stated goal, not all societies are prepared for the social and political ramifications of realizing these goals. Political will and ongoing government support are key to developing ongoing, effective programmes in mother tongue-based, developmental bilingual learning and to realizing the potential benefits of these programmes on long-term educational outcomes and social inclusion.

An essential step in convincing governments, educators, and parents of mother tongue-based bi/multilingual education is to document—through systematic and meaningful data collection—effective policies and practices and make these findings available to policy-makers and educators. While mother tongue-based bi/multilingual education programmes have been established in many minority and indigenous language communities around the world, they are far from common (Benson, 2009). Moreover, research on bi/multilingual education for preschool-aged children is scarce. UNESCO calls for investments in pilot projects in communities that are keen or inquisitive, including systematically documenting and evaluating these projects using methodologically sound research.

Mother tongue based bi/multilingual education initiatives for young children, especially those in the early years before formal schooling, are still in their infancy. However, research and experience to date have indicated the promise of this approach to advancing our shared goals of preserving and optimizing cultural and linguistic diversity and promoting the success of all children in learning and in life.

GLOSSARY

Additive bilingual individuals: A bilingual person with high competencies in both languages.

Additive bilingual environment: Language learning environments, including family, community, and/or school settings, that encourage acquisition of children's native or home language as the primary language while they acquire an additional language.

Aptitude: Language aptitude refers to how well, relative to others, an individual can learn a foreign language in a given amount of time and under given conditions. Language aptitude is operationalized by means of various analytical capacities and working memory, which are considered necessary for the acquisition of vocabulary and the implicit structures of a language.

Attitude: A viewpoint or psychological position assumed about an object or idea, such as one's viewpoint regarding an approach to teaching young children language.

Balanced bilingual individuals: Persons with a high degree of linguistic and academic competence in both languages, or with the competence appropriate to their age in both languages.

Bilingual individual: Ability to speak/understand (and sometimes read/write) at least two languages.

Bilingual education: Formal use of at least two languages for literacy and instruction (UNESCO, 2003). Ideally, literacy and learning begin with the learner's first language, and L2 is introduced gradually. Bilingual education need not include a local language; however the most common type of bilingual education (also called mother tongue-based bilingual education) attempts to use the learners' mother tongue to some extent in the curriculum. The more extensive the use of L1 for instruction, the 'stronger' the bilingual education programme is considered to be (Malone, 2008).

Bilingual language acquisition: The process of acquiring two languages.

Circumstantial bilinguals: Bilingual children whose first language is not well recognised.

Code-switching (also known as code-mixing): The use of more than one language in the same utterance or in the same stretch of conversation. When the elements occur in the same utterance, this is referred to as intrautterance code-mixing, and when they occur in two different utterances in the same conversation, this is referred to as interutterance code-mixing (Genesee, Paradis, & Crago, 2004).

Competencies knowledge: Abilities or skills in language or other subjects of the school curriculum.

Contrastive hypothesis: Posits that similar structures in the first and second languages facilitate acquisition of L2, as knowledge of these features can be transferred.

Corrective feedback: Repeating a child's incorrect or incomplete sentences in the correct form.

Curriculum: Teaching plan, content, and instructional materials for an education programme.

Dialect: Manner of speaking a language that varies according to region or social group. Also sometimes called a ‘variety.’

Dominant bilingualism: Greater competence in one of the two languages.

Dominant group: Most powerful social group of the country due to population (numerical majority), economics (wealth), and/or politics (power).

Dominant language: Language spoken by the dominant social group, or language that is seen as the main language of a country. The language may have official or national language status even if it is not spoken by a numerical majority of the national population.

Dual language learning: Simultaneous acquisition of two languages from birth (or beginning in infancy) or the acquisition of L2 after L1 has been established.

Dysphasia: A language disorder in which there is an impairment of speech and comprehension. It is caused by brain damage, usually in the left side of the brain, which is responsible for language and communication.

Elicit bilingualism: Bilingual children whose first language is socially recognised.

First language schooling: Educational programme that uses L1 for reading, writing and learning (also called mother tongue-based education).

Foreign language: Language that is not spoken in the immediate environment of the learner.

Heritage language: Language of a person’s ethnolinguistic group. The language may or may not be spoken by members of the group in the community in which a person is currently living—for example, Turkish in the case of Turkish children living as immigrants in Germany.

Heritage mother tongue: An ancestral language that may or may not be spoken in the home and the community. McCarty (2008) has proposed the term *heritage mother tongue* to embrace the conceptualization of language as the living root of contemporary cultural identities. McCarty (2008) takes the view that a person may be seen as having a heritage mother tongue as a result of their familial or ancestral ties to a particular language as well as by exerting their agency in determining whether or not they are heritage language learners of that heritage language and heritage culture. McCarty explains that heritage mother tongue is the living root of contemporary identities, regardless of whether one speaks the language.

Among indigenous peoples in North America, mother tongue and heritage language are intermeshed concepts. In the United States, heritage language speakers include immigrant, refugee, diasporic, and indigenous groups (Cummins, 2005). Former colonial languages have also been added to this list (Wiley, 2005). The 2000 Heritage Language Research Priorities Conference Report states that “the term ‘heritage language’ . . . may refer to any ancestral language that may, or may not, be spoken in the home and the community” (p. 335). A troubling implication of this definition is that heritage language speakers may speak or understand the ancestral language, or have no spoken proficiency in it. As Wiley (2005) explains, the lack of consensus about definitions of heritage language and mother tongue is due to the fact that “labels ascribed by academics, applied linguists, and missionaries to languages have not always been the same as those used by their speakers in the community” (p. 595). Fishman (2001), McCarty (2008), Valde (2001) and Wiley (2001) take the position that an indigenous language should be conceived as a heritage language on the basis of personal and collective affiliation with it (see also Fishman, 2001; Valdes, 2001; Wiley, 2001). Hornberger (2005) argues that heritage language learners “are defined not only by their familial or ancestral ties to a particular language, but also by exerting their agency in determining whether or not they are heritage language learners of that heritage language and heritage culture” (p. 607). Some have argued the terms ‘ancestral’ or ‘heritage’ language are problematic because they hark back to a long-ago time and a faraway

place, making heritage languages passé in the 'here-and-now' of the modern, technologizing world. Garcia (2005) calls this 'rear-viewing' and expresses concern that the term "relegates languages other than English to a powerless position – backward and unimportant" (p. 605).

Home language: Language spoken in the home (see also L1, mother tongue). Some people have more than one home language.

Identity hypothesis: Theory postulating that L1 does not influence the acquisition of the structures of L2.

Illiterate person: Person who has not yet had the opportunity to learn reading and writing in a language s/he understands.

Immersion education: A model in which the learner is completely 'immersed' in a language that is not L1 for most or all of the programme day (i.e., most or all of the curriculum and caregiving interactions). According to Thomas and Collier (1997), when a learner is from a majority language community, immersion education can be quite effective, but when a learner is a minority language speaker, immersion can significantly hinder academic learning.

Implementation: The process of mobilizing people and resources to carry out a new programme.

Indigenous person: Person or group descended from the original or early inhabitants of a region or country.

Interdependence hypothesis: Assumes that L2 is developed on the basis of an intact first language. According to this hypothesis, children who do not have an intact first language when they begin to learn L2 will have difficulties in acquiring L2. Thus, competence in L2 is dependent upon the level of development of L1.

Interlanguage hypothesis: Views the language of the learner of a second language as an independent and variable system, which contains elements of the first and second language as well as its own distinctive ones.

Language minority: Group of people who share a language and often have less power in society due to population (numerically fewer), economics (less wealth) and/or politics.

Language socialization: How children are raised in their family and/or community to become competent members of their social group. Socialization occurs through the use of language (Schieffelin, 1990).

Late immersion: Educational programmes for majority language students that provide at least 50% of instruction, including reading, writing and academic subjects, through the medium of a second/foreign language, beginning in middle or high school.

Literacy: Ability to read, write, calculate, and otherwise use a language to do whatever is needed in life.

L1: First language, native language (also called mother tongue, home language, local language). Refers to language(s) learned from birth.

L1 majority L2 learners: Elicit bilinguals.

L1 minority L2 learners: Circumstantial bilinguals.

L2: Second language, non-native language, language of wider communication, or foreign language. Often refers to contexts where the language is spoken in the wider society outside the home; in bilingual education, L2 refers to the second (official, foreign) language introduced after the L1. For ethnolinguistic minorities, the L2 is usually an official and/or national language.

Lingua franca: Widely spoken language used for communication between ethnolinguistic groups; for example, Tok Pisin in Papua New Guinea.

Local language: Language spoken in the immediate community. Sometimes refers to languages that are not yet fully developed in written form.

Mainstream: Language and culture of the dominant group. Often refers to schools designed for members of the dominant group that do not meet the needs of linguistic minorities.

Maintenance bilingual education or multilingual education: An education programme that aims to use both (or all) the chosen languages as media of instruction throughout all the years covered by the programme (Corson, 1999). Maintenance bilingual education is also referred to as additive bilingual education, because L2 is added to, but does not displace, L1 as a medium of instruction.

Majority language: A majority language refers to the language spoken by a dominant social group whose language is used for discourse in political, trade or international affairs. While we might refer to this as a 'national language,' some countries have several national languages. India, for example, has 12, while South Africa has 23.

Medium of instruction: Language used for teaching and learning the school curriculum.

Migrant individual: Person or group that has moved from one region to another.

Minoritised language groups: Members of ethnolinguistic groups that have been positioned by dominant members within the society in which they are embedded as different from the 'norm' or the group defined as the 'majority.' Typically, governing systems function to ensure that members of minoritised groups have minimal influence over decisions that affect them. Efforts may be made to submerge their distinctive identity, goals, and needs through assimilationist policies or neglect.

Minority or minoritised language: A minority language is a language spoken by a population group that is not one of the socially or politically dominant groups in a country. In developing countries, most mother tongue-based bilingual education programmes are directed at children who belong to an ethnic minority group with one or more languages that are not used in political, economic, or international discourse. This term is sometimes used to refer to the language of a numerically large group that is not dominant.

Mobilization: The process of organizing a community (and its supporters) to work together to plan and implement a programme.

Morphology: The field of linguistics that studies the internal structure of words. (Words as units in the lexicon are the subject matter of lexicology.) While words are generally accepted as being the smallest units of syntax, it is clear that in most, if not all, languages, words can be related to other words by rules. For example, English speakers recognise that the words *dog*, *dogs*, and *dog-catcher* are closely related. English speakers recognise these relations from their tacit knowledge of the rules of word formation in English. They intuit that *dog* is to *dogs* as *cat* is to *cats*. Similarly, *dog* is to *dog-catcher* as *dish* is to *dishwasher*. The rules understood by the speaker reflect specific patterns (or regularities) in the way words are formed from smaller units and how those smaller units interact in speech. In this way, morphology is the branch of linguistics that studies patterns of word formation within and across languages, and attempts to formulate rules that model the knowledge of the speakers of those languages.

Mother tongue (MT): Also known as L1 or home language; defines mother tongue as the language which a person has acquired in his/her early years and which normally has become his/her natural instrument of thought and communication. Also known as L1 or home language. Thus the term 'mother tongue' commonly refers to a child's first language, or the primary language spoken by the child as a result of learning it in his/

her home from primary caregivers. Definitions often include the following elements: the language(s) that one has learnt first; the language(s) one identifies with or is identified as a native speaker of by others; the language(s) one knows best; and the language(s) one uses most. Importantly, a child's earliest experiences with a language may not conform to the 'standardized' or 'formal school version of the language, but may instead be a variety of a main language. Varieties often involve different forms of a language spoken by rural versus urban residents. Thus, the variety of a 'mother tongue' used in formal education may differ slightly or substantially from the variety of the same language that a child learned at home.

Mother tongue-based instruction: In mother tongue-based instruction, the medium of instruction is the child's mother tongue, or first language. *Basing* instruction in a language means that that language is used to teach most subjects in the curriculum and to interact in the programme environment. In contrast, mother tongue instruction may mean that the programme includes explicit instruction in L1 as a subject of study.

Mother tongue-based bi/multilingual education: Mother tongue-based bi/multilingual education is concerned with providing early instruction "in a language children will understand and then [adding] L2 for wider communication" (Dutcher, 2003, p. 4). In this conceptualisation, proficiency in L1 is used as a foundation for learning a regional, national or international language based on the principle that children learn more easily in a language they already control. Mother tongue education is legitimised by the salutary effects of providing a basic education in the child's own language (Dutcher, 2003, p. 1, 4). Mother tongue-based bi/multilingual education is called developmental bilingual education by some investigators and educators (Genesee, Paradis, & Crago, 2004).

This term, more than the term bilingual education, conveys the practice of relying primarily on learners' mother tongue (i.e., basing education in L1 as a foundation for learning), with some introduction of L2 in part of the curriculum, often as a formal subject of study. Ideally, literacy and learning begin with the learner's first language, and L2 is introduced gradually. Bilingual education need not include a local language; however, the most common type of bilingual education aims to use the learner's mother tongue to some extent in the curriculum. The more extensive the use of L1 for instruction, the 'stronger' the bilingual education programme is considered to be (Malone, 2008). (Also sometimes called 'bilingual education.')

It should be noted that this conceptualisation only imperfectly fits the situation of contemporary indigenous communities in colonized countries where a colonial language (or several languages) has become the medium of everyday life and, most often, the child's first language and the language of public schooling.

Multilingual education (MLE): Formal use of more than two languages for literacy and instruction (UNESCO, 2003a). Ideally, this begins with developing L1 and gradually adding other languages. Countries with multiple regional languages of wider communication or more than one official language may support multilingual education that includes children's mother tongues and the more widely spoken languages of the nation. As with bilingual education, a multilingual education programme is considered 'stronger' as L1 is used more extensively as a medium of instruction.

Multilingual individual: Ability to speak/understand (and sometimes read/write) more than two languages.

National language: Language considered to be an important, widely spoken language in a country; sometimes also an official language. Example: India recognizes two official languages (Hindi and English) and 22 national languages. Bahasa Malayu is both a national language and an official language of Malaysia.

Non-governmental agency (NGO): Organization that is not part of any national government, often for community development.

Official language: A language that is given a special legal status in a particular country, state, or other territory. Typically a nation's official language will be the one used in that nation's courts, parliament and administration. However, official status can also be used to give a language (often indigenous) a legal status,

even if that language is not widely spoken. For example, in New Zealand the Māori language has official status under the Māori Language Act even though it is spoken by less than five percent of the New Zealand population. Non-national or supra-national organizations such as the United Nations and the European Union may also have official languages.

True official languages are those designated as such by a regulation or law, such as the Māori Language Act or the Welsh Language Act 1967. However many languages are considered to be *de facto* official languages, meaning that although a language may have no official status in a particular country, it is the most commonly used language in that country and the one usually used in official settings. One example of this is the English language in the United States. The US has no official language (although 30 US states do), but because English is used for most official matters and the most commonly spoken language, it can be considered the official language in practice if not in law. The same is true for Australia.

An official language is not to be confused with a national language, although the national language may be official if given legal recognition by the government.

The practical effects of a language's 'official' designation vary, and often depend on how widely the language is spoken. In some cases only the official language(s) may be used in court, the education system or other settings, whereas in other cases official status merely allows for that language to be used. For example, the Māori Language Act allows Māori to be used in legal settings, but the vast majority of New Zealand legal proceedings are still carried out in English despite English having only *de facto* official status. In other countries in which the official language is more generally but not universally spoken, such as the Republic of Ireland and Wales, state publications and signage must be available in the official language as well as the dominant language. Official language status usually increases the likelihood that a language will be widely taught in schools, and in many cases (for example Ireland) the official language is a compulsory subject. This is not always the case, however. For example, in Democratic Republic of Congo, the official language is French, while there are four recognized national languages, which are used a media of instruction in addition to French.

Official language status is often connected with wider political issues of sovereignty, cultural nationalism, and the rights of indigenous peoples and ethnic minorities. For example, the campaign to make English the *de jure* official language of the United States is often seen as a way of marginalizing non English-speaking minorities, particularly Hispanic and Latino Americans, whereas in the Republic of Ireland the decision to make the Irish language an official language was part of a wider programme of cultural revitalization and Gaelic nationalism. Various indigenous rights movements have sought greater recognition of their languages, often through official language status.

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Phonological awareness: The conscious sensitivity to the sound structure of a language. It includes the ability to auditorily distinguish parts of speech, such as syllables and phonemes. The ability to blend and segment phonemes is critical to the development of decoding and spelling skills. Phonological awareness is an important and reliable predictor of later reading ability and has been, therefore, the focus of much research.

Semilingualism: A concept suggested by Cummins (1986) suggesting a condition of partial learning of one or more languages, such that the individual is not fully proficient in any one language. This concept has been the subject of intense controversy and has been challenged on empirical grounds.

Separate development hypothesis: Posits that, after a mixing of the languages in the first two years of life, the two languages develop independently of each other as separate systems.

Socioeconomic status (SES): An economic and sociological combined total measure of a person's work experience and of an individual's or family's economic and social position relative to others, based on income, education, and occupation. When analyzing a family's SES, the household income earners' education and occupation are examined, as well as combined income, versus with an individual, when their own attributes are assessed. Socioeconomic status is typically broken into three categories, high SES, middle SES, and low SES to describe the three areas a family or an individual may fall into. When placing a family or individual into one of these categories any or all of the three variables (income, education, and occupation) can be assessed. A fourth variable, wealth, may also be examined when determining socioeconomic status. Income, occupation and education have shown to be strong predictors of a range of education and physical and mental health outcomes.

Specific language impairment (SLI): An atypical pattern of development in which a child has delayed or non-normative language development. Children with SLI have typical intelligence, sensory processing, and social-emotional behaviour, and no obvious neurological impairment.

Submersion: Use of a second/foreign language for all instruction, with little or no help for learners.

Subtractive bilingual environments: Language learning environments, including family, community, and school settings, that are associated with loss of L1 as a result of learning L2. Bilingual children in these environments usually lose identification with the culture associated with L1. This process occurs in children from minority ethnolinguistic groups, such as immigrant or indigenous children, when they acquire a majority group language. Subtractive bilingualism usually results in monolingual proficiency in the majority language.

Successive language acquisition: The acquisition of L2 in early childhood when the first is already acquired or in process of being acquired.

Sustainability: Setting up a programme so that it has long-term viability.

Threshold level hypothesis: States that, under certain conditions, bilingualism can have a negative effect on school success and that positive results can only be achieved when children are sufficiently competent in their first language.

Time-on-task hypothesis: Assumes that success in L2 is positively related to the amount of contact with L2. According to Hopf (2005), the learning time available to a student is limited. Therefore, the offer of additional lessons in L1 reduces the time available to learn L2. Consequently, the time spent in learning first language skills must have a negative effect on the acquisition of L2.

Transfer: The notion that skills learned in L1 can contribute to competence in related skills used in other languages. For example, one only needs to learn to read once; the skill is transferred to reading L2.

Transitional bilingual education or multilingual education: An education programme that aims to provide learners with a planned transition from one language of instruction (as the primary or only medium of instruction) to another language of instruction (regardless of grade). That is, one language is phased out and another language is phased in to replace it.

Unwritten language: Language that is spoken, but not yet used for reading/writing.

Variety: Manner of speaking a language that varies according to region or social group (also 'dialect').

Vernacular: the form of a language that a regional or other group of speakers use naturally, especially in informal situations. A localized variety of a language.

Writing system: Graphic representation of a spoken language (also 'orthography').

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NOTES

- 1 Goal 1: Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.

Goal 2: Ensuring that by 2015 all children, particularly girls, children in difficult circumstances, and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality.

Goal 6: Improving all aspects of the quality of education and ensuring excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy, and essential life skills.
- 2 Refer to Glossary.
- 3 Genesee's research on cross-language transfer of phonological awareness has important practical implications for individualizing instruction. This research suggests that assessments of children's phonological awareness in their mother tongue tend to predict their early decoding and comprehension skills in L2. Results on these early assessments can help teachers to individualize instruction early on. Given awareness that common skills transfer from L1 to L2, teachers have an opportunity to offer extra support to the students who need it most and to give all children their best chance to succeed in mother tongue-based bi/multilingual education.
- 4 Examples of contemporary multimedia resources include an Arapaho version of the Disney movie *Bambi* (Greymorning, 2001); an all-Navajo radio station (Yaunches, 2004); television programming for children in Inuktitut in Canada's Arctic; and Apple Computer's first operating system in an Indigenous language – Hawaiian (Warschauer, Donaghy & Kuamoyo, 1007).
- 5 Recent examples include a Cree Health Board in Quebec tasked with creating new words for health terms such as 'pancreas' and 'insulin' (Bonspiel, 2005) and a Hawaiian computer project (Warschauer et al., 1997) which led to the creation of new Hawaiian words such as 'upload' (hoʻyouka—the same word for loading a canoe) and 'save' (mälama—part of a phrase that means 'to take proper care'). Regarding research to inform the development of program approaches, many dominant culture education systems and governments continue to be reticent in supporting Indigenous language revitalization. Thus, few longitudinal studies have assessed the impact of any strategies on language transmission or revival (Whaley, 2003).
- 6 Approximately 500 Creole languages exist, including, for example, English-based creoles such as Hawaiian Creole, Tok Pisin in Papua New Guinea, and Jamaican, and French-based creoles such as the ones spoken on Mauritius and Haiti, and in parts of the southern United States. In northern Australia, children of the 'stolen generation' from different Indigenous language groups were forced to live in English-only cattle stations, and a cattle station pidgin evolved as the *lingua franca* (Meakins, 2008; O'Shannessy, 2008). Children who speak a vernacular of the majority language may have been socialized at home to use language in particular ways that may make them seem resistant or almost phobic about participating in typical whole-classroom discourse (Ball & Bernhardt, 2008; Moses & Wigglesworth, 2008). Creoles, pidgins, and vernaculars should be properly embraced as legitimate mother tongues and included in policies and programs addressing language preservation and successful transitions to school. Training for speech-language pathologists and therapists for young children also needs to recognize these varieties, not as defective versions of the dominant language that need to be corrected, as some governments, educators, and speech-language pathologists may think, but rather

as distinct mother tongues that warrant protection as well as support under mother tongue-based bilingual education policies.

- 7 One of the better-documented Navajo programs operates in the Window Rock Unified School District in Arizona. When the program began in 1986, less than one-tenth of the five-year-olds entering primary school were considered 'reasonably competent' speakers of Navajo, and one-third was judged to have some passive knowledge of the language (Arviso & Holm, 2001; Holm & Holm, 1995). At the same time, many of these students were considered 'limited English proficient'; they possessed conversational proficiency in English but had difficulty with decontextualized academic English (Arviso & Holm, 2001). Given these circumstances, the co-founders of the program chose a voluntary immersion program similar to those developed for Hawaiian and Māori. Starting with a Kindergarten to Year 5 Navajo-immersion track in an otherwise all-English public elementary school, the program evolved into a full immersion Kindergarten to Grade 8 program (Johnson & Legatz, 2006). In the younger grades, all instruction, including initial literacy, occurs in Navajo. English is introduced in the second grade and gradually increased until a 50/50 distribution is attained by Grade 6. Johnson and Legatz (2006) explain that this approach afforded maximum exposure to the Dine' language to maximize the acquisition of the Dine' language (heritage mother tongue) as L2. Longitudinal program data show that Navajo immersion students consistently outperform their peers in English-only classrooms on assessments of English reading, writing, and mathematics. They also develop strong oral and literacy skills in Navajo (Holm & Holm 1995; Johnson & Legatz, 2006; McCarty, 2002). Thus, immersion students are accomplishing what research on second language acquisition predicts: They are acquiring Navajo as a second, heritage language without compromising their English language development or academic achievement (Holm & Holm, 1995). Further, Holm (2006) states that "What the children and their parents taught us was that Navajo immersion gave students Navajo pride" (p. 33). The Navajo Nation in the United States has mandated Navajo-medium instruction in all its federally funded Head Start preschools. Some schools that extend from Kindergarten to Grade 12 also have Navajo immersion programs. McCarty (2008) describes a program involving Navajo immersion from Kindergarten to Grade 2, and a gradually introduced bilingual (English) program from Grades 3 to 6 incorporates tribal standards for Navajo language and culture, along with state-required content area standards. It also emphasises a 'Dine' language- and culture-rich environment, including in lunch rooms, playgrounds, hallways and the bus (Johnson & Legatz, 2006). Like Hawaiian immersion, a key program component is the involvement of parents and other caretakers, who commit to spending time interacting with their children in Navajo after school.
- 8 "*Your Home Language: Foundation for Success*", DVD distributed by Toronto District School Board. <http://www.ryerson.ca/mylanguage/resrouces/dvd/>
- 9 "*Your Home Language: Foundation for Success*", DVD distributed by Toronto District School Board. <http://www.ryerson.ca/mylanguage/resrouces/dvd/>
- 10 Certificate in Aboriginal Languages Revitalization. <http://www.uvcs.uvic.ca/calr/courses.aspx>
- 11 Malone (2003) proposes the Most Significant Changes technique as a research and evaluation tool. The process involves story-based learning with frequent community interaction. (See: <http://www.mande.co.uk/docs/MSCGuide.pdf>)