



Mother tongue-based multilingual education: Towards a research agenda

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Young children learning in a language that differs from the language of instruction (LoI) in formal schooling comprise one of the fastest growing segments of the global population. What is at stake? Is this subtractive education, in the sense that children lose the opportunity to become linguistically competent members of their families and communities and to gain access to the cultural heritage that is their birthright? Under what circumstances and with what resources can MTB-MLE be an effective, additive approach whereby children become proficient in their home language while laying the foundation for learning in additional languages? What are the costs and benefits of alternative approaches in varying situations and at different levels, from the individual, the family, community, school, region, and nation?

What are meaningful yet efficient ways to measure costs and benefits? What are the implications of MTB-MLE for recruiting, educating, and mentoring teachers and teacher assistants and for creating and evaluating curricula in diverse language classrooms? What are the contributions of family and community in formal and non-formal MTB-MLE, and how can these be measured? A coordinated program of research could shed light on these kinds of critical questions in order to guide policy, inspire innovative projects, and guide practice.

Setting a research agenda for MTB-MLE is timely given the slow and uneven progress 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 UNESCO has encouraged mother tongue instruction in early

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.

childhood and primary education since 1953 (UNESCO, 1953). Yet monolingualism in official or dominant languages is the norm around the world (Arnold, Bartlett, Gowani, & Merali, 2006; Wolff & Ekkehard, 2000). In its report, 'Strong Foundations: Early Childhood Care and Education', UNESCO (2007) points out the overlooked advantages of multilingual education right from the start. When young 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 have been found to stay in school longer, achieve better, and repeat grades less often when they are taught in their mother tongue (UNESCO Bangkok, 2005).

Research in the global North 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 in the global North 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' programs 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 programs as

'transfer' programs to distinguish them from early transition programs, which can properly be referred to as 'transition' programs.

The success of mother tongue based bi/multilingual initiatives appears to depend upon 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.

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 (2008a) 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 programs in the mother tongue. However, most examples focus on the primary school level. There are very few studies of learning in the early years and during the transition to school, and few studies of MTB-MLE approaches as children reach upper secondary education. Overall, methodologically robust research on MTB-MLE in the global South is lacking. Little research attention has been given to the roles that informal and non-formal education and family interaction can play in promoting literacy, numeracy, and higher order cognitive skills of young, linguistically diverse children. There are few studies that provide a measure of the relative contributions of the various factors upon which successful MTB-MLE may depend, in various contexts, with various populations. Finally, there is a need for better communication about research on language issues in education as it becomes available, so that practitioners, policy makers and donors can be informed by evidence.

Children's capacity to learn multiple languages

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. What does research show about children's capacity to learn more than one language? Several seminal studies in the global North 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.

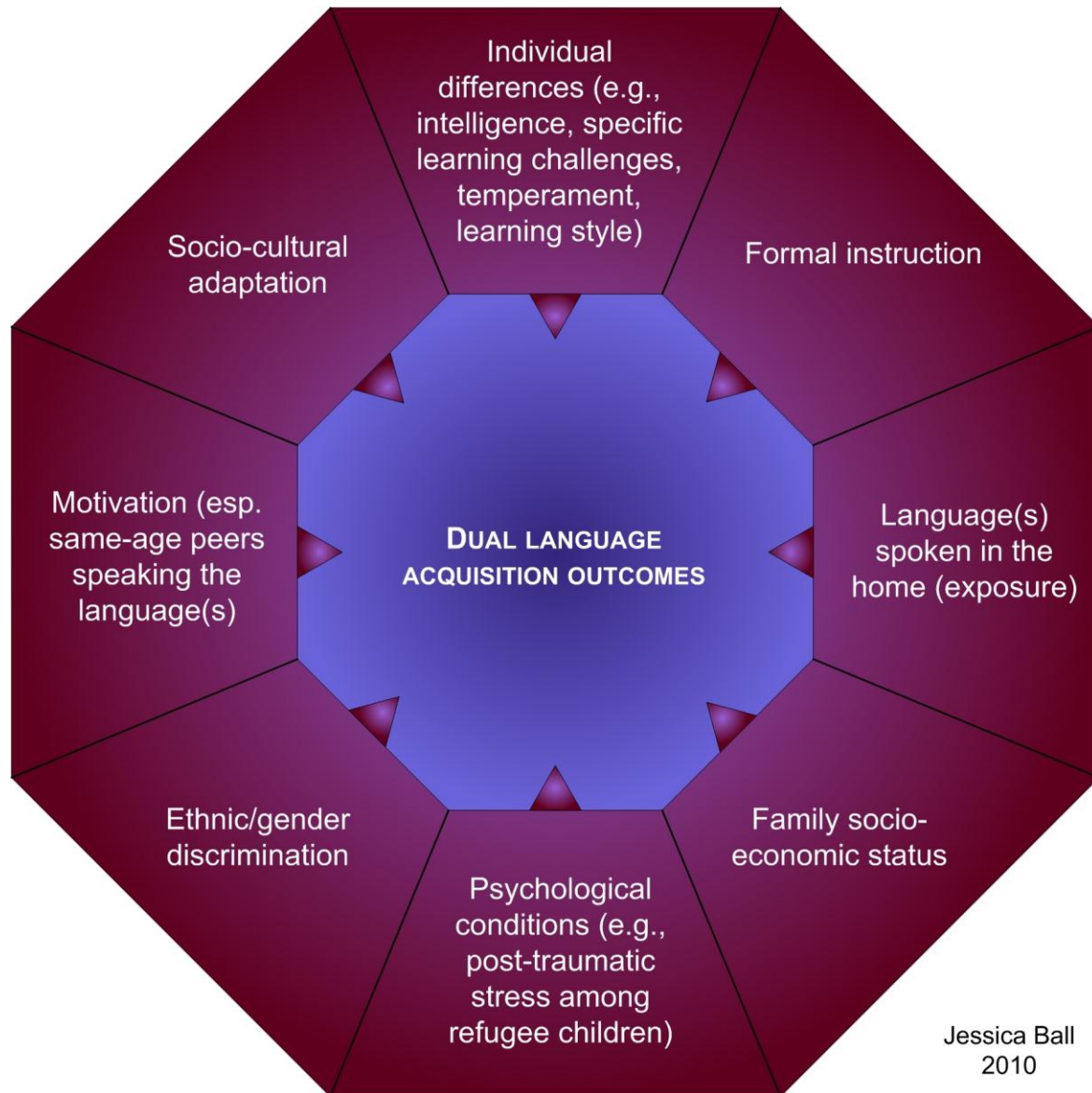


Figure 1. Factors affecting children’s dual language acquisition outcomes.

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 programs 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. 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 programs. These special circumstances involve *language recovery*, which poses a number of special challenges and needs. Some of the most promising early childhood and primary school programs 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.

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).

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.

This area of inquiry highlights several considerations when designing policies and programs 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 education.
- Possible differences between what parents say they want and their actual language behaviours with their children are important for advocates of the primacy of mother tongue acquisition in education.
- 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 program models

Bilingual and multilingual programs 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. Programs 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 program 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 program choices, including political agendas, costs, teacher training, standardized testing regimes, and so on. Table 1 describes the most common program 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
➤ The learning program 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’)
➤ 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
➤ 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 programs 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 program 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.

Research-based knowledge about bi/multilingual education outcomes

Questions about the effects of bilingual and multilingual education for young children are complex. Usually, outcomes depend on a host of factors, including those shown in Figure 2.

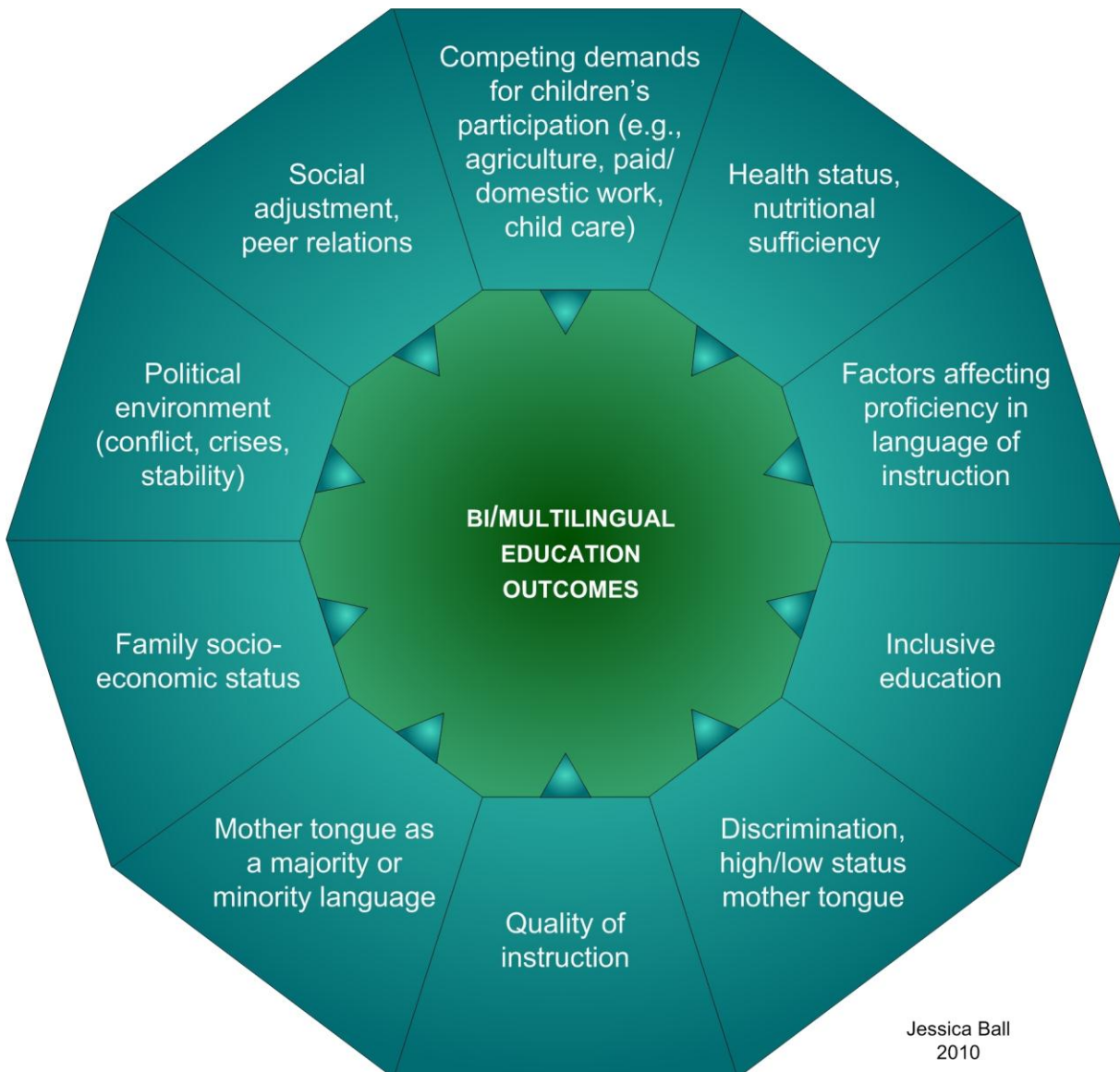


Figure 2. Contributors to bi/multilingual education outcomes

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, and within the context of schooling in the global North:

- (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.

Good practices and lessons learned

Several key parameters can affect supply, demand, and outcomes of mother tongue-based bi/multilingual education initiatives. Figure 3 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 program in Hawaii (Wilson, Kamana, & Rawlins, 2006) is a good example of an effective, sustainable, and evolving heritage mother tongue based bilingual education program 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 program in Mali (Pedagogie Convergente, UNESCO, 2008b) and in Papua New Guinea (UNESCO, 2007b) also illustrate the intersection of these many factors.

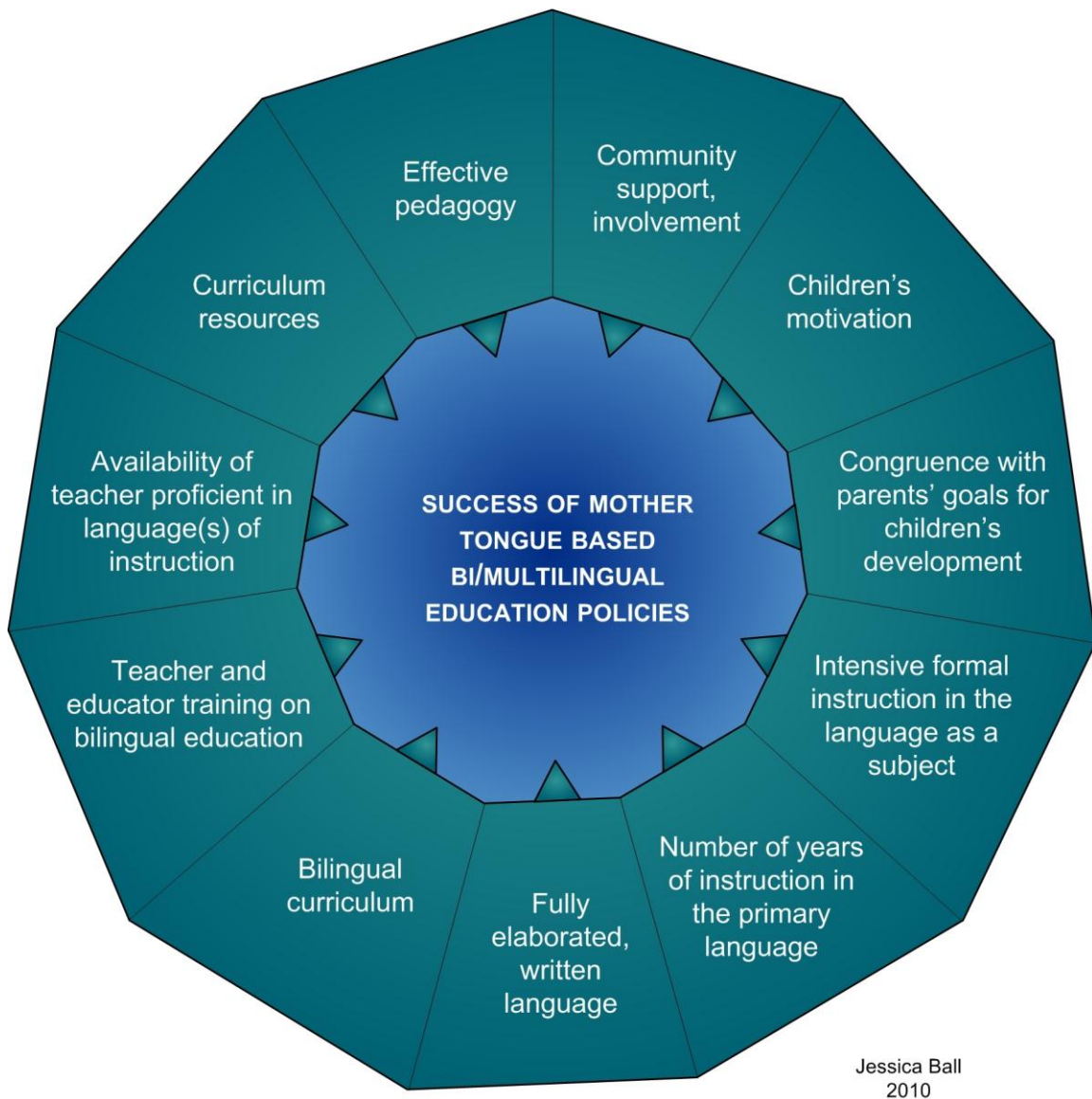


Figure 3.
Factors affecting success of mother tongue-based bi/multilingual education policies

Spheres of influence for promoting quality MTB-MLE

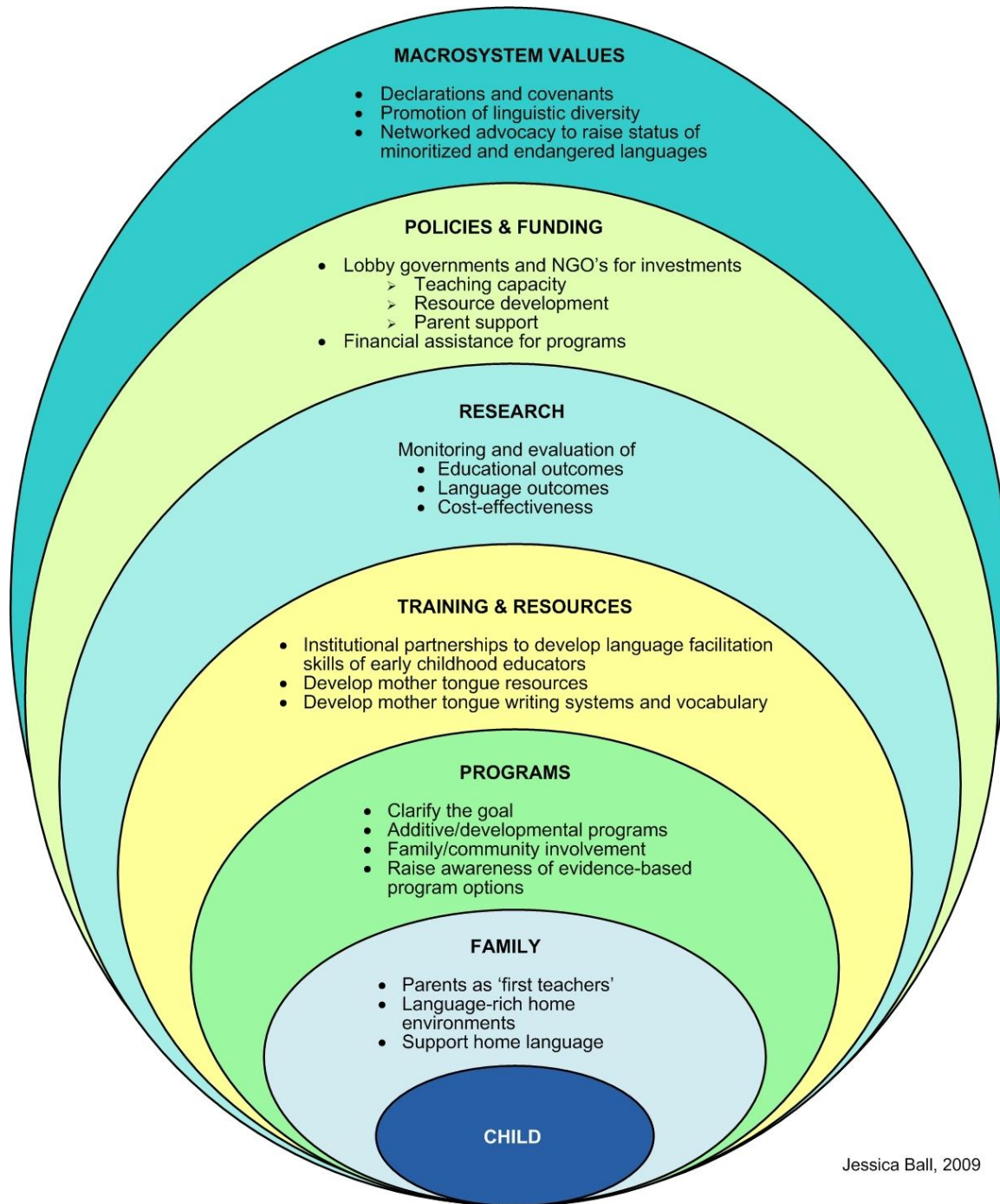


Figure 4. Spheres of influence on mother tongue based bi/multilingual program success through policy and program support

An essential step in convincing governments, educators, and parents to explore the full potential of mother tongue-based multilingual education is to document—through systematic and meaningful research—effective policies and practices and make these findings available to

policy-makers and educators. These efforts should lead to effective collaboration and knowledge sharing networks involving north-south and south-south researchers and organizations.

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 programs 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. Within the United States, many attempts at controlled empirical studies have methodological shortcomings, including (but not limited to!): (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). Another challenge has been inconsistencies and incommensurable measures of pedagogical practice and learning outcomes, reflecting the absence of a coordinated program of research and lack of communication and collaboration among researchers and research organizations. 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 programs for the same-aged children; or (c) observations of changes in children's capacities before and after a new program model is implemented. These are good initial steps that need to be refined and expanded in order to provide a basis for conclusions about effectiveness.

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. Questions need to be asked about what are the most important outcomes and how best to measure them in various teaching and learning contexts. As well, how should assessment of pedagogical effectiveness take into account variation in the pace of children's growing competence in core skills including reading, writing, numeracy and problem solving when they are acquiring - and learning through - multiple languages?

Glossary

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 program is considered to be (Malone, 2008).

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

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.

Heritage language/mother tongue: 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.

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

Immersion education: A model in which the learner is completely 'immersed' in a language that is not L1 for most or all of the program day (i.e., most or all of the curriculum and caregiving interactions).

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.

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

Maintenance bilingual education or multilingual education: An education program that aims to use both (or all) the chosen languages as media of instruction throughout all the years covered by the program. 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.

Minority or minoritized 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 programs 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.

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 program environment. In contrast, mother tongue instruction may mean that the program 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-based bi/multilingual education is called developmental bilingual education by some investigators and educators (Genesee, Paradis, & Crago, 2004).

Multilingual education (MLE): Formal use of more than two languages for literacy and instruction (UNESCO, 2003). 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 program is considered 'stronger' as L1 is used more extensively as a medium of instruction.

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.

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 program 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.

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