

Language of instruction in schools in LMICs: A systematic review



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Introduction

Over the last 50 years, schooling has expanded dramatically in most low- and middle-income countries (LMICs). However, while children are in school more than ever before, on average, over 50% of them are not acquiring foundational literacy and numeracy skills, and that proportion is expected to increase to 70% over the coming years due to the Covid-19 pandemic.¹ Although a myriad of factors contributes to this learning poverty, the role of language is essential as all learning happens in and through language.

Research Aim

This systematic review, funded by the Centre of Excellence for Development Impact and Learning and supported by UK aid from the UK Government, examined the impact of language of instruction (LOI) policies – especially LOI transition policies – on literacy and biliteracy outcomes for primary school children across LMICs. Nearly 40% of students in LMICs are educated in languages they do not use or understand (World Bank, 2021). In addition, nearly all LMICs students need to transition to a new LOI by the end of upper primary school, even though very little is known of when and how this transition should be made.

There is now substantial evidence that mother-tongue based multilingual education (i.e. the child is taught in their own home or familiar language) has multiple benefits (Thomas & Collier, 2017; Nag, Vagh, Dulay, & Snowling, 2019). At the same time, there is a well-established link between skills in a postcolonial language and socioeconomic mobility leading to high demand for earlier and earlier introduction to international post-colonial languages in schools (Azam, Chin, & Prakash, 2010; Coleman, 2011). Other factors that complicate LOI choices include linguistically heterogenous classrooms, lack of teaching and learning materials, limited trained teachers, and lack of political or community will (Piper, Zuilkowski, & Ong'ele, 2016; Trudell & Piper, 2013). This systematic review focuses on reconciling these evidence gaps by examining the impact of LOI choices – especially mother tongue education as well as the timing of transition to a new LOI – on primary school literacy outcomes in LMICs'

This study aimed to answer the following research questions:

Primary Research Questions:

1. What are the short- and long-term impacts of initial LOI choices on literacy and biliteracy outcomes, and how do they differ across various LMIC contexts?
2. What are the short- and long-term impacts of LOI transition on literacy and biliteracy outcomes, and how do they differ across various LMIC contexts?
3. What qualitative factors support effective implementation of LOI transition policies and practices?

Secondary Research Question:

What are the evidence gaps about the role of LOI choices in bilingual and multilingual educational contexts in LMICs?

Methodology:

We considered studies with interventions comprising LOI choices made by educational policies or programs that directly aim to increase children's literacy outcomes in bilingual or multilingual LMIC education contexts. The three main categories of studies were those that focused on teaching in mother tongue with later transition, teaching in a

¹ World Bank. (2021). Learning losses from COVID-19 could cost this generation of students close to \$17 trillion in lifetime earnings. Press Release. Retrieved from: <https://www.worldbank.org/en/news/press-release/2021/12/06/learning-losses-from-covid-19-could-cost-this-generation-of-students-close-to-17-trillion-in-lifetime-earnings#:~:text=6%2C%202021%E2%80%9494This%20generation%20of,Bank%2C%20UNESCO%2C%20and%20UNICEF.>

non-mother tongue language, or teaching in two or more languages. The interventions included early learning programs for mother tongue education, official language of instruction policies, teacher training for mother tongue programs or bilingual or multilingual education programs, technology-based interventions for mother tongue or bilingual or multilingual education programs, among others.

We focused this systematic review on studies that had interventions for primary and secondary school aged children in low- and middle-income countries. We included studies about the effects of LOI choices regardless of the educational status or skill level of children at the time of the intervention. We looked at studies conducted between the years of 1995 and 2020, which had been published either in English or Amharic.

Findings

What studies are included?

This review includes studies that evaluate the effects of mother tongue-based language of instruction policies and language of instruction transition policies on students' biliteracy and multilingual literacy skill development. We reviewed both quantitative and qualitative studies of LOI interventions in LMICs for a total of 45 high-quality studies, including 11 randomized controlled trials, 11 quasi-experimental studies, seven cross-sectional studies, and 16 qualitative studies. The studies were mostly carried out in sub-Saharan Africa and South and Southeast Asia across a total of 20 countries.

Map 1. Map indicating the country settings for the studies with quantitative methods



Map 2. Map indicating the country settings for the studies with qualitative methods



Does prescribing mother tongue-based instruction in primary school lead to improved literacy and biliteracy outcomes for students in bilingual and multilingual contexts?

Meta-analyses and quantitative narrative syntheses indicate that children are most likely to learn to read in their own mother tongue or in a language they understand best first. Specifically, mother tongue-based language of instruction interventions may improve students’ letter knowledge, word reading, sentence reading, and reading comprehension in the students’ mother tongue. It may also improve students’ word and sentence reading, and reading comprehension in a national language (language of wider communication, e.g., Kiswahili in Kenya). Lastly, it may improve students’ oral language proficiency, word, and sentence reading, reading comprehension, and writing in a later acquired language (often the post-colonial or international language, e.g., English in India). It is still unclear how much mother tongue instruction can support English (or later acquired language) vis-à-vis a focus on high quality teaching in the later acquired language. Furthermore, the systematic review revealed an evidence gap on how MT-based programs may impact later language literacy acquisition. Table I provides an overview of the main findings from our meta-analysis.

Table I. Overview of findings from meta-analysis

Literacy Outcome	Effect Size	Language Type
Oral Language Proficiency	0.05* (-0.06, 0.15)	Later Acquired Language
Phonological Awareness	0.65* (0.52, 0.78)	Mother Tongue
Letter & Symbol Reading	0.28 (0.03, 0.52)	Mother Tongue
Word Reading	0.02 (-0.04, 0.09)	Mother Tongue
Sentence Reading	0.19 (0.04, 0.34)	Mother Tongue
Reading Comprehension	0.29 (0.12, 0.45)	Mother Tongue
	0.32 (0.02, 0.63)	National Language
Writing	0.69* (0.56, 0.81)	Mother Tongue
	0.05* (-0.06, 0.15)	National Language

Note: Effect sizes shown in standardized mean differences (SMDs) and 95% confidence interval shown in parentheses. * denotes only one study used to derive effect size.

What factors affect how well mother tongue-based language of instruction policies work for biliteracy outcomes?

The qualitative studies suggest that presence of high-quality teaching and learning materials in the mother tongue coupled with improved curriculum and bilingual materials throughout the classroom are likely necessary for a successful mother tongue-based language of instruction program. Other factors such as political status of the language and orthographic and linguistic type are also critical, and programming should take into consideration the sociolinguistic and psycholinguistic milieu of the context prior to development. Programs with these elements receive positive reception and strong support by students and teachers alike as students and parents perceive that these programs improve teaching quality, increase student motivation in the classroom, and respondents report improvements in bilingual reading skills.

What's Next

The findings from a limited quantitative evidence base suggest that high-quality mother tongue program interventions may lead to gains in mother tongue reading outcomes. Furthermore, the qualitative results showed that high-quality inputs in programs for English as a later acquired language led to perceived gains in English language skills. However, given the lack of conclusive evidence on the trade-off between putting resources in high-quality English medium education versus high quality mother tongue education and then transitioning to English medium education, more research is needed before giving clear policy guidance on how to construct effective transition policies and programs. Finally, while we can say that literacy outcomes in the mother tongue improve when instruction begins in the mother tongue, more research is needed to determine when students should transition to a new language of instruction and how such decisions should differ by context.

The key area for future research for LOI transition would be to investigate with high quality studies whether – and if so, in what ways and why – mother tongue education programs impact literacy and other academic outcomes in not only the mother tongue, but also in the national languages and in post-colonial international languages. Furthermore, cost-effectiveness analyses are critical to help provide decision makers with the trade-offs that are inherent in determining how much time and resources should be spent teaching in one language versus another.

Key Implications

This study has resulted in key implications for decision makers globally. These implications include:

1. Decision makers should invest in high-quality curricula and teacher training in the MT.
2. Decision makers should provide school inputs (such as textbooks and other teaching materials) together with teacher training to improve MT literacy outcomes in children attending elementary school.
3. Decision makers should invest in further research on this topic, including investigating the impact of MT education on academic outcomes in the child's MT, the country's national language, and in post-colonial languages, to inform future LOI programming.

Contact

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