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Teacher Knowledge, Skills, and Attitudes

Related to Literacy and Language
that Influence Early Grade Literacy
Outcomes in Sub-Saharan Africa



Teacher Knowledge, Skills, and Attitudes Related to Literacy and Language that Influence Early Grade Literacy Outcomes in Sub-Saharan Africa

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Acronyms

ACALAN	African Academy of Languages
ADEA	Association for the Development of Education in Africa
AJOL	African Journals Online
CLA	Collaborating, Learning, and Adapting
DERP	Data for Education Research and Programming in Africa
DFID	United Kingdom Department for International Development
EGMA	Early Grade Math Assessment
EGR	Early Grade Reading
EGRA	Early Grade Reading Assessment
ERIC	United States Educational Resources Information Center
L1	Primary Language/First Language
L2	Secondary Language
LOI	Language of Instruction
MOI	Medium of Instruction
MT	Mother Tongue
NGO	Nongovernmental Organization
RCT	Randomized Control Trial
REEP-A	Research for Effective Education Programming in Africa
RQ	Research Question
SLA	Second Language Acquisition
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development
WCCES	World Council of Comparative Education Societies
WERA	World Educational Research Association

Definition of Terms

Term	Definition
L1 / primary language / first language / mother tongue	The language spoken at home
L2	The second language that a person learns to speak
Lx	The 2nd, 3rd, or any ordinal number of a language beyond the L1. This is a useful designation in highly multilingual societies where learners have complex language proficiency profiles
LOI	Language of instruction
LOI1	The initial language of instruction
LOI2	The subsequent language of instruction
Multilingual education	The use of at least three languages for teaching and learning: the mother tongue or primary language (L1), a regional language (or more widely spoken language), and an international language
Bilingual education	The use of two languages for teaching and learning, most commonly using the students' L1 the majority of the time in the first years of schooling while introducing the L2 first orally and then for literacy development
Early-exit bilingual education	Bilingual education that most commonly uses the students' L1 the majority of the time in the first years of schooling while introducing the L2 incrementally (first orally and then reading and writing) until Grade 4, at which time the LOI becomes solely the L2
Late-exit bilingual education	Bilingual education that most commonly uses the students' L1 the majority of the time in the first years of schooling while introducing the L2 incrementally (first orally and then reading and writing) through Grade 6, at which time the LOI becomes solely the L2
Local language	The language in most common use in the community
International language	Often the ex-colonial language (e.g., English, French, Portuguese, Arabic). However, English is increasingly being referred to as the "international language"
Official language	Language(s) endorsed by the government as official
Regional language	A language commonly spoken across a geographical region
Lingua franca/ common language	A language used to communicate within a country or across borders. Can be the ex-colonial language, official language, or a majority language
Code-switching	Alternating between languages within and across sentences, which often occurs in bi/multilingual classrooms. Within teaching, it includes translating, paraphrasing, clarifying, explaining and giving examples to facilitate student understanding
Translanguaging	Language use that encourages teachers and students to draw on fluid communicative practices between two or more languages so that they can maximize communicative potential through their linguistic repertoires (not seen as using separate codes)

Executive Summary

Despite some progress in early grade reading outcomes in sub-Saharan African countries, literacy levels remain low. One of the key challenges in improving learning outcomes is ensuring that teachers are prepared to effectively teach. For countries implementing bilingual and multilingual education, this entails teachers having the appropriate pedagogical skills and knowledge, literacy in the languages of instruction (LOIs), and willingness to teach in a local language.

Multiple challenges exist for effectively implementing bilingual and multilingual education. It is common to find a mismatch between teachers having the appropriate pedagogical skills and knowledge, ability to read and write in the LOI and willingness to teach in a local language. This could be due to several factors, including potential resistance to teaching in the local language and pressure from parents to teach in the regional or ex-colonial language instead of a local language. Additionally, mismatches exist between teachers' language and literacy skills, students' mother tongue (MT), and the designated LOI of the school. Data on teachers' local language proficiency is extremely limited. Many teachers struggle to teach in a language with which they lack reading and writing experience, as is the case across much of sub-Saharan Africa. Teachers may also lack the pedagogical knowledge and skills to effectively help their students develop language and literacy skills, especially when utilizing two or more languages.

The United States Agency for International Development (USAID) continues to put significant investment and effort into improving early grade literacy in sub-Saharan Africa and recognizes the need to examine critical issues on teacher effectiveness for early grade reading. This report responds to that need. Its objective is to examine and synthesize the literature base on the relationship between teacher knowledge, skills, and attitudes (KSA) regarding LOI and early grade reading outcomes in multilingual contexts in sub-Saharan Africa. The report aims to better understand the challenges in language policy planning and implementation, as well as to provide recommendations and identify research gaps. This framework report lays the groundwork for future USAID research activities in issues related to teachers and LOI in early grade reading.

Specifically, the report examines three primary topics: 1) Teachers' Language and Literacy Skills, 2) Teacher Pedagogical Knowledge and Skills, and 3) Teachers' Attitudes and Beliefs Towards Local Language Instruction. An integrative literature review approach was conducted that used key search terms to retrieve peer-reviewed literature and grey literature according to established criteria. A total of 77 articles were retrieved by the search terms and an additional 32 by other means (e.g., references and bibliographies). The 109 identified articles are included in a summary table and assessed based on inclusion criteria for relevance and quality standards. The review ultimately included 74 sources.

TEACHERS' LANGUAGE AND LITERACY SKILLS

Many countries in sub-Saharan Africa have LOI policies that promote the MT as the first language of instruction (L1) and the ex-colonial language as the second language of instruction (L2). However, there is often a gap between the official policy and its implementation, resulting in teachers not being equipped to teach in the designated LOI. Findings revealed widespread limitations in teachers' local language capacity for teaching in

bi/multilingual programs. Although teachers may have oral language skills in a local language, they frequently lack opportunities to become fully literate in a local language and to attend teacher preparation programs that use a local language as the medium of instruction. In many countries, entry and/or graduation requirements for teacher preparation programs are not rigorous enough to ensure teacher proficiency in a local language. Additionally, teacher deployment policies do not always consider local language proficiency as a criterion, resulting in a discrepancy between the school's designated LOI and the teacher's capacity to effectively help students learn their primary language. A systematic review is needed of efforts across countries to strengthen institutions and mechanisms for improved teacher local language capacity, as well as research on how to best support teachers with limited LOI language skills.

Data on teachers' local language proficiency across sub-Saharan Africa is extremely limited. While multiple studies have determined that the mismatch between the official LOI and teacher proficiency in that language is a challenge, very few included any type of assessment of teachers' language and/or literacy skills. Successful implementation of bi/multilingual education will depend on having adequate and accurate information to inform programming.

Teacher proficiency in the ex-colonial languages, which are often the students' second language (L2), varies within and across countries. In some countries, teacher proficiency is insufficient for ensuring that students can effectively learn these languages. This is a concern for students in the commonly used early-exit bilingual education model, in which students are supposed to develop their foundational language and literacy skills in the early primary grades, after which they are expected to learn all subject matter in the L2.

There is limited causal research on the relationship between student learning outcomes and teachers' language and literacy skills and practices in the LOIs. However, evidence points to teacher LOI proficiency being critical for student learning and shows that when teachers have limited LOI proficiency their teaching and learning practices tend to be less effective for student learning. More research is needed to establish causal relationships between teachers' language and literacy skills, in the LOIs and student learning outcomes.

TEACHER PEDAGOGICAL KNOWLEDGE AND SKILLS

Overall, teachers are not receiving adequate preparation to teach effectively in multilingual contexts. The development of competencies for teaching reading and writing in general is often insufficient or not part of teacher preparation requirements. Specific instruction for developing the L1 and L2 is especially lacking. There tend to be low expectations and standards for preparing teachers, ineffective in-service teacher education, a lack of teacher education institutions, and too few teacher educators who are equipped to impart the skills and knowledge teachers need for bi/multilingual instruction.

LOI should be more integrated in teacher training and requirements. Teachers need an understanding of literacy acquisition in a first and second language, how to use assessments to inform instruction, and first and second language teaching methods. Capacity building of teacher education faculty is needed, particularly in pedagogical knowledge for multilingual settings. In-service training should be aligned with the curriculum for bi/multilingual education and training should be provided evenly across geographical regions.

Research has shown that teacher education can have positive effects on student outcomes in multilingual contexts. Furthermore, outcomes from different approaches to training shed light on the most effective approaches. However, research gaps still exist, especially for large-scale and/or nationwide programs (rather than only pilot programs). Formative evaluative research has been useful for identifying the most effective strategies for training and coaching teachers, such as the Collaborating, Learning, and Adapting (CLA) approach to project implementation and scaling up. CLA can be part of the implementation process and monitoring and evaluation plan to create and adjust training materials and strategies to best respond to teachers' needs.

TEACHERS' ATTITUDES AND BELIEFS TOWARDS LOCAL LANGUAGE INSTRUCTION

It is known that favorable teacher attitudes towards local language instruction leads to more widespread implementation. Yet findings on teachers' attitudes were mixed. Some studies found that teachers prefer a combination of local language and the ex-colonial language for the LOI and some revealed a strong preference for the ex-colonial or regional language. Few countries studied evidenced teachers strongly preferring local language instruction, with the notable exceptions of Rwanda and South Sudan. In addition to teachers preferring not to teach in the local language due to a lack of proficiency, they often prefer the ex-colonial/regional language because of pressure from stakeholders. Historical and political contexts influence stakeholders (including decision makers) to emphasize ex-colonial language instruction over local languages, including beliefs about them being higher status and unifying (while local language LOI can be perceived as divisive). Teachers and other local stakeholders who were not part of the mother tongue LOI decision-making process were also shown to have less favorable attitudes towards using a local language for instruction. Involving teachers and local stakeholders in language policy decisions is important to ensure that there is agreement on the LOIs, which can help lead to more fidelity in its policy implementation.

There is a need for research that examines the relationship between teachers' beliefs about local language instruction and student learning outcomes as well as studies on how to effectively change attitudes and beliefs through interventions.

I. Introduction

Background

Developing basic literacy skills is the gateway to learning in childhood and beyond. It cultivates the necessary abilities to engage civically and enter the formal workforce. However, of the 387 million children worldwide who cannot read,¹ a large portion of them live in sub-Saharan Africa, which includes the ten countries with the lowest literacy rates for children and adults (RTI, 2015). There are various reasons for this, including political instability, drought and natural disasters, and extreme poverty. However, there are also causes directly related to the provision of education, such as a shortage of teachers and limited teacher capacity. The issue of teacher capacity is especially pronounced in contexts in which teachers are expected to respond to students' learning needs by having language skills in more than one language.

Populations within sub-Saharan Africa speak multiple languages within each country. Many educational systems have adapted to this by early provision of local language instruction most commonly through the early-exit bilingual education model. This approach provides early instruction mainly in a language the child understands. Usually, this is the students' first language (L1), which is often a local language. Oral language skills are developed in a second language (L2), which could be the ex-colonial language, an international language, or a regional language. L2 literacy skills are then progressively developed and, by Grade 4, students should be proficient in the L1 and L2.

Even though many sub-Saharan African countries have been implementing bilingual education, there are often mismatches between teachers' language and literacy skills in the local language and the students' L1. The students' L1 may not be the designated language of instruction (LOI) of the school. Furthermore, even if the students' L1 is the LOI of the

¹ 2011-2017 USAID Education Strategy Progress Report.

The Mismatch Between Teachers' LI Abilities, the LOI of the School, and the Students' LI Occurs for Several Reasons:

- Teachers may speak the LI but since they did not study it in school or in their teacher preparation, they lack the literacy skills to use it for instruction and to teach that language to students
- Teacher preparation programs often do not include courses for teachers to develop skills in a local language
- Teacher deployment policies do not consider the teachers' language abilities as a requirement for placement
- There is a lack of information, and/or information use, on teachers' language and literacy skills in regards to the LOI of the schools where they are teaching

school, the teacher may not be proficient in the LOI and thus not able to effectively help children develop LI literacy skills.

In addition to the challenges related to teachers' language and literacy skills and the LOI, there are also challenges in ensuring teachers have the pedagogical knowledge and skills to effectively teach. Teachers' knowledge encompasses pedagogical, content, and technological knowledge. Specifically, for literacy development, this entails having theoretical understanding of the development of oral language, cognition, reading, and writing (Kim, Boyle, Zuilkowski, & Nakamura, 2016). It also requires having the skills to put this knowledge into practice through effective teaching methodologies. Teachers that have the pedagogical knowledge and skills to effectively teach children are in high demand in sub-Saharan Africa. There are often low expectations and standards of qualifications for preparing teachers as well as ineffective in-service teacher education. Additionally, there is a lack of teacher educators and educational institutions equipped to impart the skills and knowledge teachers need for effective teaching in more than one language.

Finally, teachers must be equipped as well as willing to teach in the L1 and L2. Even when the official policy promotes using a local language for instruction in the early years of schooling, teachers often times do not implement the policy in the classroom due to a preference for using an ex-colonial or regional language instead of a local language. Reasons for unwillingness to carry out local language instruction vary on a country-to-country basis and stem from historical language policies, the political and cultural context, relations between different socioeconomic groups, and other factors.

The aforementioned challenges help to explain the persistent low literacy levels for primary school children in sub-Saharan African countries. In the initial five years of the Education Strategy (2011-2015), the United States Agency for International Development (USAID) improved the reading skills of 30 million children, of which 24 million are in sub-Saharan Africa. Despite these improvements, literacy levels in early grades remain low, and progress has been slow in the region. For USAID, enhancing reading skills in the early primary grades is a key education priority, and significant investment and effort continue to be devoted to improving early grade literacy. Currently, 17 countries in sub-Saharan Africa are implementing

USAID-supported projects to improve reading skills for children in primary grades. Additionally, such projects are in the process of being established in two additional countries in the sub-Saharan region (for a total of 19 countries), and many Africa USAID missions will be designing second-generation reading activities in the next few years.

This has prompted USAID to initiate a work stream that focuses on teachers and LOI. The research activities in this newly established work stream will further explore these critical issues, and examine teacher effectiveness for early grade reading (EGR) through the lens of the LOI. The work stream will focus on developing rigorous research that examines the linkages between teachers and language-related factors, which can impact the ultimate goal of children acquiring reading abilities. Through a range of interrelated activities, the research stream will assess the degree to which teachers in sub-Saharan Africa are prepared to teach reading at the early grade level. The research will also look at related issues, such as teacher deployment policies; whether and how teachers' language abilities are taken into consideration in school assignments; how factors such as levels of linguistic heterogeneity among students in the classroom and the availability of materials in the official LOI can impact teachers' effectiveness and student learning outcomes; and how various stakeholders' attitudes and beliefs about language use in education can influence policy and practice.

This framework report is the first study carried out under the new work stream and it will serve as a foundational document for future USAID research in this topic area. It seeks to synthesize and analyze a vast array of literature from topics related to teachers and LOI and to function as a resource for a range of stakeholders by highlighting key findings, identifying gaps, and providing recommendations for implementation and future research.

Study Objectives

This framework report is a review, analysis, and synthesis of the literature base on the relationship between language- and literacy-related teacher knowledge, skills, and attitudes and early grade reading outcomes in order to better understand challenges as well as gaps in research. The report examines the categories of knowledge, skills, and attitudes (KSA) in relation to teacher preparedness, which potentially influence a teacher's ability to deliver high-quality literacy instruction in multilingual contexts. Teacher knowledge refers to understanding effective literacy pedagogy, including general practices as well as considerations specific to the orthography of each LOI. It includes knowledge of second language acquisition (SLA) and how to teach a second language, or any language beyond the LI (otherwise referred to as L_x).² Teacher skills include both language and literacy abilities: oral proficiency in the languages of instruction and in the students' home language(s) as well as reading and writing proficiency in the LOI(s). The notion of "attitudes" in the context of this report refers to beliefs and attitudes towards specific languages, language in education policy, multilingualism, and the linguistic and learning needs of students. (See Table 1 for a complete description of the terms).

² In some cases, students may already know two or more languages. Thus, instead of referring to a second language, or "L₂", the term "L_x" is used to mean two or more languages.

Table 1. Definition of Terms: Teacher Preparedness

Teacher Preparedness	Description
Knowledge	<ul style="list-style-type: none">• Literacy pedagogy: Pedagogical knowledge for teaching reading and writing. Teacher knowledge of effective literacy pedagogy, including general practices as well as considerations specific to the orthography of each LOI.• Language pedagogy: Teacher knowledge of second language acquisition, the teaching of a second language (Lx), the teaching of literacy and of other content subjects in the students' Lx, and pedagogical approaches to the optimization of multilingualism in the classroom. Knowledge of the basic component of literacy development, including methods for instruction in multiple languages such as how to sequence oral and written language and literacy development in the L1 and L2.
Skills	<p>LOI proficiency:</p> <ul style="list-style-type: none">• Linguistic skills: Teacher oral proficiency in the LOI(s) and in the students' home language(s). This is inclusive of speaking/ expressive ability, listening comprehension, knowledge of vocabulary and syntax, pronunciation, pragmatics, etc.• Literacy skills: Teacher reading and writing proficiency in the LOI(s), including familiarity with the LOI orthography and writing conventions. <p>Teacher capacity to effectively teach reading and writing in the LOI in multilingual contexts:</p> <ul style="list-style-type: none">• Effective instructional practices for teaching reading and writing in LOI(s).• Effective instructional approaches (lecture, group work, individual work).• Teaching that leads to improved student literacy and other learning outcomes.
Attitudes and Beliefs	<ul style="list-style-type: none">• Teacher attitudes and beliefs towards specific languages, language in education policy and multilingualism.• Teacher attitudes and beliefs towards the transfer of literacy concepts from one language to another.• Teacher attitudes and beliefs towards the linguistic and learning needs of students.• Factors that contribute to teacher attitudes and beliefs (training, materials, policy, community factors, etc.).

Questions the Review Aims to Answer

1. What is known about the influence of teachers' language and literacy skills on students learning outcomes?
2. What is known about the influence of teachers' knowledge and skills for teaching multilingual education on students learning outcomes?
3. What is known about the influence of teachers' attitudes towards local language instruction and bi/multilingual education on students learning outcomes?
4. What minimum requirements/levels are recommended for teachers to effectively teach in multilingual contexts?
5. How can systems ensure that teachers are adequately qualified with regard to their knowledge, skills, and attitudes for teaching in a multilingual context?

This review draws from the research on teacher education and studies on the role of language in teaching and learning. The purpose of this investigation is to understand previous or existing efforts to identify factors that impact teacher effectiveness and to identify and describe recent or existing assessments designed to measure teachers' language proficiency and literacy skills.

This framework report is meant to shed light on and provide guidance for how to best prepare and support teachers for teaching in multilingual contexts, specifically in regards to improving early grade reading outcomes. Primarily it is to inform programming for primary education in multilingual contexts. Though the focus is on sub-Saharan Africa, the issues are applicable to other multilingual contexts as well. The review aims to serve as a resource for a range of stakeholders internationally engaged in improving the quality of teaching in multilingual contexts. This includes people who work with donor agencies, government institutions, international and multinational organizations, international development organizations, nongovernmental organizations (NGOs), and academic institutions as well as teacher educators, teachers, researchers, policy and program designers, and evaluators.

Methodology

The development of this framework report entailed a comprehensive literature review of existing research on teacher preparedness and student outcomes in multilingual countries in sub-Saharan Africa. This entailed an analysis of peer-reviewed articles, and grey literature (including USAID research and evaluations), to better understand program effectiveness, barriers, and successes in preparing teachers to teach in multilingual countries. Specific attention was given to extracting the implications for policy, program design, and project implementation.

To address predefined research questions, the method of an integrative literature review was utilized. This is one of the most comprehensive methodological approaches for reviewing the literature and allows for the inclusion of experimental, non-experimental, and theoretical literature to better understand a phenomenon (Whittmore & Knafli, 2005;

Souza, Silva, & Carvalho, 2010). This approach is favorable for the topic because it requires examination of a wide array of literature, as opposed to a narrower scope or analysis of studies with primary data sources and randomized control trials (RCTs), for which a systematic approach would be favorable.

Initial search terms were defined based on the research questions and, more specifically, drawn from the definitions of terms and overarching categories of LOI and teacher preparedness (as listed in Tables 1 and 2). These terms provided the basis and criteria for selecting key search terms and literature included in the study. The terms were further refined based on an initial review of the literature.

The first component of the search strategy was to expand and refine the predefined key search terms to create a more complete, final list for each of the categories. An initial review was conducted of comprehensive resources on the topic of teacher preparation and student achievement in multilingual contexts (e.g., Nordstrum, 2015; Ouane & Glanz, 2010; Truong, 2012). Furthermore, the search terms were tested to ensure that they were effectively locating the desired literature (Kable, Pich, & Maslin-Prothero, 2012), and some new search terms were added.

The search encompassed both peer-reviewed and grey literature. For peer-reviewed literature, the U.S. Educational Resources Information Center (ERIC) database served as the primary research source. Other less known but important databases utilized were the African Journals Online (AJOL) database, and journal websites such as the World Council of Comparative Education Societies (WCCES) and the World Educational Research Association (WERA).

Key resources for grey literature included the Global Reading Network Research and Publications databases and large international donor agencies such as United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Bank, United Nations Children's Fund (UNICEF), and the United Kingdom's Department for International Development (DFID). Other sources were theses and dissertations, conference papers, and research and reports produced by international and local nongovernmental organizations (NGOs) in sub-Saharan Africa. Academic networks located in sub-Saharan Africa were also utilized to identify relevant sources and research, such as the Association for the Development of Education in Africa (ADEA) and African Academy of Languages (ACALAN), as well as national Linguistic and Education Departments.

The key word search retrieved 77 articles. To guide and structure the literature search, a summary table was used to document the search process (see Annex 1 for a list of key search terms used and number of articles retrieved). Additional literature was obtained through conference presentations, sources referred by experts in the field, and through the bibliography of the retrieved articles. Thus, 32 more articles were added for a total of 109 articles.

Finally, interviews were carried out with several experts in the field to help ensure that unpublished, relevant literature and recent lessons learned from field implementation were sufficiently captured.

INCLUSION AND EXCLUSION CRITERIA

A screening criteria and rationale was established to ensure the relevance of the literature for the study's purpose. As the study examined the evidence base through the lens of LOI, countries that implement primary school instruction in more than one language were prioritized. (See Table 2 for complete inclusion criteria).

All literature identified through the criteria outlined in Table 2 was then assessed to determine whether the inclusion criteria and quality appraisal were met. The quality appraisal took into account methodological rigor, informational value, and generalizability. Literature meeting the articulated inclusion criteria and appraisal was consolidated in a summary chart identifying the citation (author and year), research focus, type of research, type of study, design/methodology, relevance to research questions, and if it met the quality appraisal. This summary chart served as a basis to determine if the particular articles were relevant, useful, and merited inclusion in the literature analysis. The summary chart also indicated which research question(s) the literature would help to address. Of the 109 identified articles included in the summary table, 74 were ultimately included in the review. (See Annex 2 for a list of articles assessed for inclusion in the review).

ANALYSIS

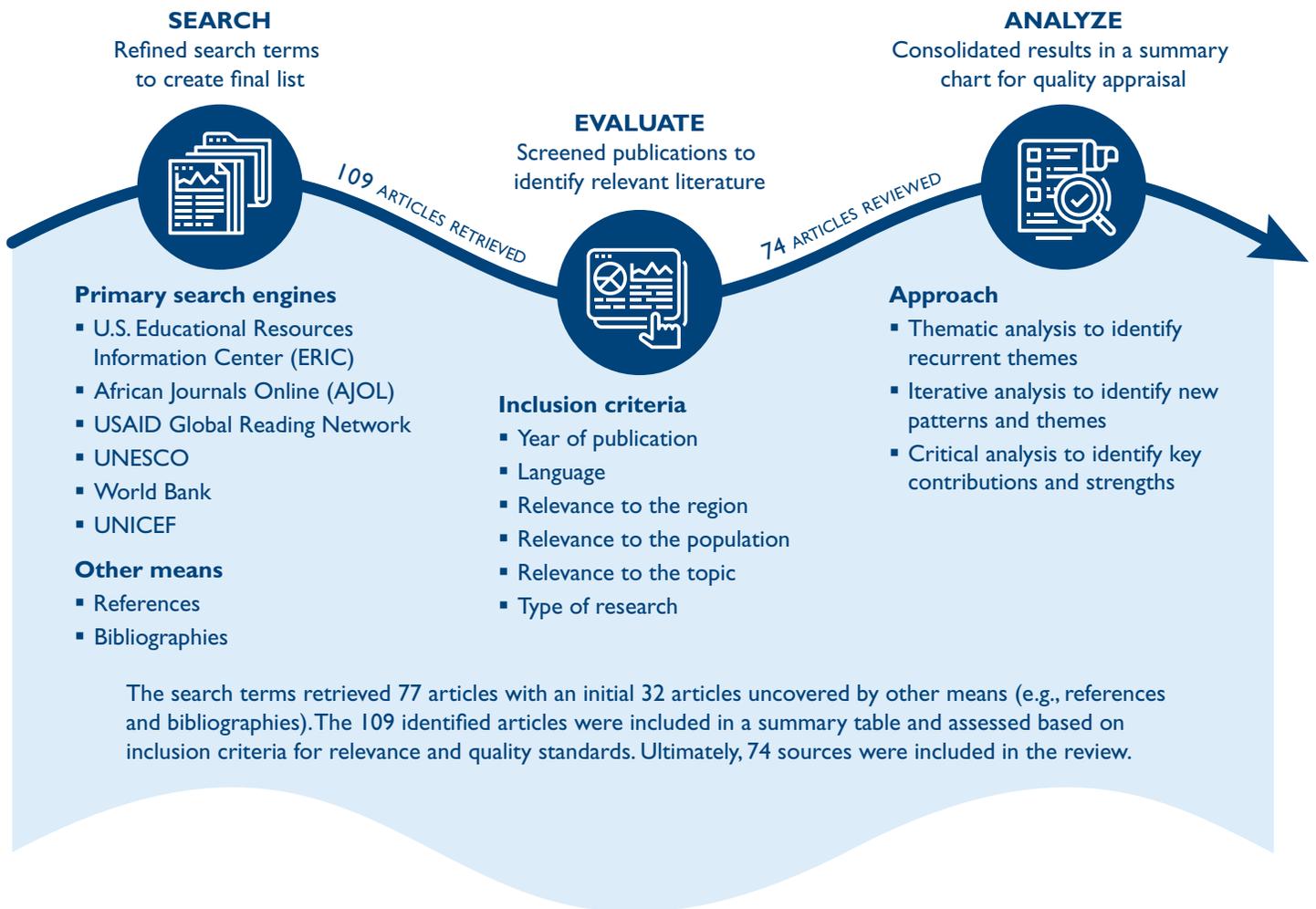
A thematic approach to analysis was employed. Findings from each study were extracted into the categories or domains identified by the pre-specified framework, which facilitated identifying findings most relevant to each research question (see Noyes & Lewin, 2011). The thematic analysis was used to identify recurrent themes in the literature and summarize the findings under different headings (Dixon-Woods, Agarwal, Jones, Young & Sutton, 2005). Matrices were used to summarize the literature based on pre-determined conceptual classifications according to the research questions and search terms. The summary matrices also facilitated the identification of research gaps.

Though categories were pre-determined based on the research questions and search terms, sub-categories emerged during the literature review process. These conceptual classifications helped to identify patterns and recurring themes. Through an iterative analysis process, new patterns and themes were identified (Miles, Huberman, & Saldana, 2014). A critical analysis of the literature and findings was conducted to thoroughly identify the key contributions and strengths in the literature, as well as research gaps and weaknesses (Torraco, 2005).

LIMITATIONS

There were several limitations that emerged regarding the available literature to include in the review. Much of the research on teacher preparedness and LOI is embedded within broader studies looking at multilingual education and student outcomes, as well as other factors that influence teacher effectiveness (e.g., lack of materials, etc.). There were far fewer articles that focused primarily on teacher knowledge, skills, and/or attitudes and beliefs for effective teaching in multilingual contexts in sub-Saharan Africa.

Additionally, there were limited studies addressing the research questions that have used control and comparison groups. For example, though there are a plethora of studies that examine student reading outcomes in sub-Saharan Africa, very few were found that examine the relationship between teacher knowledge and skills and student outcomes



in bi/multilingual classrooms. Those that did examine this relationship were often within the context of a pilot intervention. No studies were found that examined the relationship between teacher attitudes towards local language instruction and student learning outcomes.

Another limitation is that a significant share of the relevant research literature was concentrated in a select number of countries in sub-Saharan Africa (e.g., South Africa, Kenya, Ghana, and Mali); while it was much scarcer for other countries in the region. For example, while South Africa yielded over 30 studies, countries such as The Gambia and Cameroon yielded a small number of relevant studies. Even fewer studies were found on countries affected by conflict and crisis.

Finally, in regards to teachers' language and literacy skills in the first language of instruction (LOI1) and the second language of instruction (LOI2), there was a lack of research that measured these skills in a thorough and empirical manner (e.g., teacher language and literacy assessments). Studies that directly examined the relationship between teachers' language and literacy skills in the LOI1 and LOI2 and student outcomes were also limited.

Table 2. Inclusion Criteria

Category	Criteria
1. Year of Publication	The study must have been published between 2000 and 2018.
2. Language	Studies should be primarily in English, though studies in French or Spanish may also be included if highly relevant to the research questions.
3. Relevance to the Region	Although the primary focus is sub-Saharan Africa, articles and reports from other regions with similar contextual issues will be considered to complement the literature gaps, if they are relevant to specific issues related to teacher preparation and LOI.
4. Relevance to the Population	The study will focus on teachers working with children in early primary grades in multilingual contexts, though literature on teacher preparedness and student outcomes in upper primary (or above) may be considered when relevant to LOI (e.g., late-exit models of bilingual education).
5. Relevance to the Topic	<p>The central focus on the study must be teacher preparedness, rather than the many other factors and barriers for learning.</p> <p>Studies will be included that examine teachers' knowledge, skills, and attitudes as they relate to students' learning outcomes in reading and writing. However, other learning outcomes (e.g., math) may be included if they are related to issues of LOI.</p> <p>Studies and reports that examine the role of gender in teacher preparation, focusing on literacy instruction in multilingual contexts, will be taken into account.</p> <p>Studies examining costs of meeting the minimum requirements for teacher preparedness will be included, both as related to the costs of specific interventions and the costs of achieving sustainable systems that ensure teacher preparedness.</p>
6. Type of Research	<p>Empirical research that collected quantitative and/or qualitative data on teachers in multilingual contexts will be included.</p> <p>Case studies and accompanying documentation related to teacher preparation, student outcomes, and LOI will be included, as relevant.</p> <p>Existing meta-analysis and synthesis literature related to the topic will be included.</p> <p>Literature that provides a conceptual framework and justifies recommendations for bilingual and multilingual literacy development, as it relates to student learning outcomes and teacher preparation, may be included.</p>

Organization of the Report

The report is structured around three key issues within the field of LOI and teacher preparation in sub-Saharan Africa: 1) teachers' language and literacy capacity, 2) teachers' knowledge and skills, and 3) teachers' beliefs and attitudes. The first key issue is covered in Section II, which provides an analysis of the research on teachers' language and literacy skills in multilingual contexts in sub-Saharan Africa, with a focus on how these skills relate to student learning.

Specifically, Section II discusses:

- Teachers' language and literacy skills in the local languages
- Teachers' language and literacy skills in the ex-colonial languages
- Effects on student outcomes of teachers' language and literacy skills
- Challenges in ensuring L1 and L2 teacher language and literacy capacity
- Recommendations for planning, implementation, policy, and programming
- Recommendations for further research

Section III examines and synthesizes the literature on teacher knowledge and skills for teaching in bi/multilingual education and how this relates to student learning.

Specifically, Section III addresses:

- Teachers' knowledge and skills for teaching multilingual education
- Challenges in ensuring teachers' knowledge and skills for multilingual education
- Effects on student outcomes of teachers' knowledge and skills
- Recommendations for planning, implementation, policy, and programming
- Recommendations for further research

Section IV examines the literature on teachers' attitudes and beliefs towards multilingual education, in particular, local languages and ex-colonial languages. The section discusses:

- Findings on teacher attitudes and beliefs towards LOI
- Common explanations for LOI preferences
- Recommendations for planning, implementation, policy, and programming
- Recommendations for further research

Each section provides an analysis and summary of relevant literature, highlights key issues emerging from the research, and offers recommendations for planning and implementing effective bi/multilingual education as well as informing policy decisions. Additionally, each section includes a discussion of the minimum requirements for effective teaching and how systems can help ensure these requirements are met. Finally, a concluding section ties together the most salient issues to address in planning and implementation, and points to the most pressing needs for further research in the field to continue to disentangle the complex issues of teacher preparedness and LOI.

II. Teacher Language and Literacy Skills

Teachers' proficiency in the language(s) of instruction (LOIs) is a key element for children developing proficiency in the LOIs (Erling, Adinolfi, & Hultgren, 2017; Varly, 2010). However, many teachers in sub-Saharan African classrooms who are expected to teach in bilingual classrooms lack the necessary level of proficiency in one or both of the languages (Benson, 2004; Erling et al., 2017; Setati, 2005; Desai, 2016). This presents a particular challenge for sub-Saharan African countries, especially given that the majority of countries in sub-Saharan Africa have language policies and/or practices supporting local language instruction, also known as mother tongue (MT) instruction.³ In fact, it is one of the barriers for more widespread implementation of the local language policy.

Language policies and the degree of implementation vary across sub-Saharan Africa as illustrated in Table 3, which presents information for the majority of countries in the region.⁴

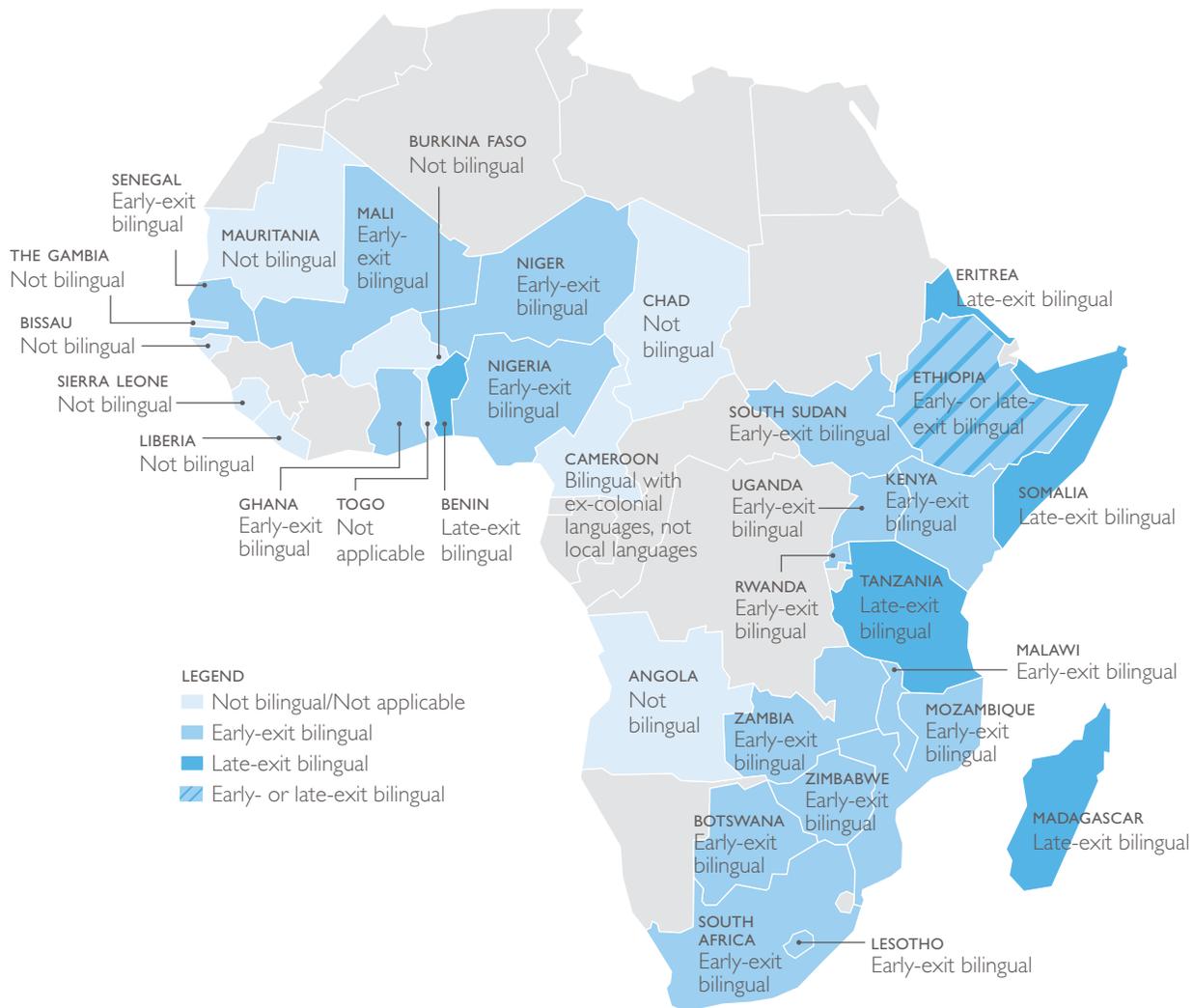
³ Local language instruction implies the use of one of the African languages that is used in the community/area, which is often the one that is used by the majority of the students. However, this does not mean that all children are learning in their mother-tongue language, which can differ from the designated LOI. In other words, some schools have children that speak more than one language and who vary regarding their mother tongue.

⁴ It is important to note that information in the literature on the degree of implementation was not always consistent, especially in countries where a lot of research has been conducted such as Ghana, Kenya, South Africa, Ethiopia, and Nigeria. More research is needed regarding the degree of implementation for the majority of countries. This table includes countries for which information was available to varying degrees.

Teacher Language and Literacy Skills

- What is known about teachers' language and literacy skills in the local languages?
- What is known about teachers' language and literacy skills in the ex-colonial languages?
- What is known about the effects on student outcomes of teachers' language and literacy skills?
- What are the challenges in ensuring I1 and I2 teacher language and literacy capacity?

Language Policy Models in sub-Saharan African Countries



Out of the 33 countries included in this overview, 21 reflect policies and/or practices of MT instruction. The majority of the countries have transitional models, in which instruction is provided in the students' L1 the majority of the time in the first years of schooling, while the L2 is introduced incrementally (first orally and then in reading and writing) until the LOI becomes solely the L2. The transition to instruction solely in the L2 can happen at any grade, but typically it happens at Grade 4 (known as an early-exit bilingual model) or in Grade 6 or 7 (known as a late-exit bilingual model). Though a high number of countries have policies supporting MT instruction, research findings reveal that many of them have low degrees of MT instruction implementation. It is important to note that for many countries, the research regarding the degree of implementation is very limited and/or reflecting different degrees of implementation in different regions but not comprehensive of the overall country.

Understanding teacher proficiency levels in languages of instruction is critical to identifying the mismatches between teacher language and literacy skills in the LOIs and the students' first language (L1). However, there is limited information on teacher proficiency levels. While

Table 3. Language Policies and Degree of Implementation in sub-Saharan African Countries

Country	Language policy	Model	Degree of MT policy implementation
Angola	No history of MT education	Not bilingual	Not applicable
Benin	MT is LOI through primary school; English is the LOI in secondary school	Late-exit bilingual	Low
Bissau	No history of MT education	Not bilingual	Not applicable
Botswana	National African language (Setswana) is LOI through Grade 2 or 3; then switch to English as LOI	Early-exit bilingual	Low
Burkina Faso	French is LOI at all levels	Not bilingual	Not applicable
Cameroon	Bilingual English and French with no mandate for use of local African languages	Bilingual with ex-colonial languages, not local languages	Not applicable
Chad	No history of MT education	Not bilingual	Not applicable
Eritrea	MT is LOI in Grades 1-5; English is LOI in Grade 6 and beyond	Late-exit bilingual	Unknown
Ethiopia	MT is LOI up to Grade 5, 7, or 9 (depending on the region); English is the LOI after	Early- or late-exit bilingual	Varies by region
The Gambia	No history of MT education	Not bilingual	Not applicable
Ghana	MT is LOI in lower primary (K-Grade 3); English is LOI in upper primary and beyond	Early-exit bilingual	Varies by region
Kenya	MT is LOI in lower primary school (Grades 1-3); English is LOI in upper primary and beyond	Early-exit bilingual	Low
Lesotho	MT is LOI in lower primary (K-Grade 3); English is LOI in upper primary and beyond	Early-exit bilingual	Unknown
Liberia	No history of MT education	Not bilingual	Not applicable
Madagascar	MT is LOI in Grades 1-5; French is LOI in Grade 6 and beyond	Late-exit bilingual	Unknown
Malawi	MT is LOI in K-Grade 4; English is LOI in Grade 5 and beyond	Early-exit bilingual	Low
Mali	Lo MT is LOI in lower primary (K-Grade 3); French is LOI in upper primary and beyond	Early-exit bilingual	Low
Mauritania	No history of MT education	Not bilingual	Not applicable
Mozambique	MT is LOI in lower primary (Grades 1-3); Grade 4 transition; Portuguese is LOI in upper primary	Early-exit bilingual	Low
Niger	MT is LOI in lower primary (K-Grade 3); French is LOI in upper primary and beyond	Early-exit bilingual	Unknown
Nigeria	<ul style="list-style-type: none"> • Pre-primary policy advocates for use of MT or local language of community, but it is not mandated • MT or language of the local community is LOI in lower primary (Grades 1-3); English is LOI in upper primary and beyond 	Early-exit bilingual	Low

Rwanda	MT is LOI in lower primary (K-Grade 3); English is LOI in upper primary and beyond	Early-exit bilingual	High
Senegal	<ul style="list-style-type: none"> • There is no official MT policy; French is the official LOI. • There is government support for MT LOI in lower primary (K-Grade 3) 	Early-exit bilingual	Unknown
Sierra Leone	No history of MT education; early or early medium MT pilot projects	Not bilingual	Not applicable
Somalia	Somali is LOI through primary	Late-exit bilingual	Not applicable
South Africa	<ul style="list-style-type: none"> • LOI policy advocates for use of home language but does not mandate use • Decisions about LOI are left to school governing bodies (extremely decentralized and localized) and learners choose which language to learn in and enroll in a school that has it as the LOI. English is the LOI at Grade 4 	Early-exit bilingual	Low
South Sudan	MT is LOI in lower primary (Grades 1-3); Grade 4 transition; English is LOI in upper primary	Early-exit bilingual	Medium
Tanzania	Kiswahili, though not the MT for much of the population, is the LOI for primary and secondary school.	Bilingual	Medium
Togo	Mandates MT as LOI in pre-primary; French as LOI starting in primary	Not applicable	Not applicable
Uganda	MT is LOI in lower primary (Grades 1-3); English is LOI in upper primary and beyond	Early-exit bilingual	Low
Zambia	MT is LOI in K-Grade 4; English is LOI in Grade 5 and beyond	Early-exit bilingual	Low
Zimbabwe	MT is LOI in first three years of primary; English is LOI from Grade 4 onward	Early-exit bilingual	Low

student proficiency in the L1 and L2 has been measured in many countries within the region, there is still no assessment of teachers' language and literacy proficiency in the LOI1 and/or LOI2 (Pouezevara, Pflapsen, Nordstrum, King & Gove, 2016). Furthermore, despite the LOI policies, many countries do not have policies in place to help ensure that teachers develop the skills to teach in the LOIs, such as deploying teachers to schools with a designated LOI that matches the teachers' capacity in that language and/or teacher training programs that develop skills in the L1 and/or L2.

This section aims to address these issues. It begins with a synthesis of literature that examines and discusses teachers' language and literacy skills in the local language of instruction as well as methodologies used to assess these skills. The following sub-section seeks to understand what is known about teachers' language and literacy skills in the second language, which is typically the ex-colonial language. Following this, research is discussed that aims to establish a link between teachers' language and literacy skills and student outcomes as well as teacher practices as they relate to limitations in teacher LOI proficiency. Finally, the main challenges regarding teacher language and literacy proficiency skills are highlighted, and recommendations to address and better understand these challenges are provided.

KEY CHALLENGES

LITERACY SKILLS IN THE LOCAL LANGUAGES

- ▶ **Data on teachers' local language proficiency across sub-Saharan Africa is extremely limited.**
- ▶ **There is a lack of formal training in reading and writing in a local language.**
- ▶ **In some countries teachers were found to lack the capacity to speak in the local language, which limited their ability to help their students understand content and learn.**
- ▶ **Overall, studies are limited in their geographical coverage and methodologies.**
- ▶ **Local language skills are not assessed for teaching in the local language of the community/school.**

Teachers' Language and Literacy Skills in the Local Languages

As mentioned above, one of the greatest challenges for effective implementation of a local language LOI policy is ensuring that teachers are equipped with adequate levels of literacy in the language(s) designated for instruction. Many teachers struggle to teach in a language in which they lack reading and writing experience, which is the case across much of sub-Saharan Africa (Jones & Barkhuizen, 2011; Seidu, Ayoke, & Tamanja, 2008; Akyeampong, Lussier, Pryor, & Westbrook, 2013; Chitera, 2010; Ouane & Glanz, 2011; Adekola, 2007; Stranger-Johannessen, 2017; Rosekrans, Sherris, & Chatry-Komarek, 2012; RTI, 2016; Erling et al., 2017; Woldemariam, 2007; Essien, 2014; Varly, 2010; Vandeyar & Killen, 2007; Paulson Stone, 2012; Heugh, Benson, Bogale & Yohannes, 2007).

Data on teachers' local language proficiency across sub-Saharan Africa is extremely limited. While multiple studies have determined that the mismatch between the official LOI and teacher proficiency in that language is a major challenge in the region, very few included any type of assessment of teachers' language and/or literacy skills. Additionally, the degree of information on this issue varies significantly by country, with a breadth of information for several countries in the region and little to no research in other countries. Of the 44 studies reviewed to address the research question "What is known about the influence of teachers' language and literacy skills on students learning outcomes?" only 16 assessed teacher's language skills, while just six assessed literacy skills. Of the studies that included some information on assessment, many did not explain the specific methodology used to measure teachers' language and/or literacy skills, and the findings tended to be based on teachers' self-perception, perceptions of other stakeholders, and/or classroom observation. Of the six studies that measured teachers' LOI literacy skills, only two actually used a literacy assessment tool; one measured English skills (Taylor, 2016) and the other measured local language and literacy skills (Seidu et al., 2008). (See Annex 3 for further information on how teachers' language and literacy skills have been measured across countries).

In their study of six countries, Akyeampong et al. (2013) found that trainees in Tanzania were not prepared to teach in multilingual classrooms, and in fact some trainees were not even familiar with the local language they would have to teach. They found that of the new teachers surveyed, only 8% in Senegal and 2% in Mali expressed any confidence about teaching reading in local languages, despite the fact that in many of the schools in Mali, these local languages were supposed to be used as the medium of instruction for the lower grades. In the same study, it was shown that a larger percentage of teachers felt prepared to teach reading in English only—68% in Uganda, 74% in Kenya, and 79% in Ghana. (Akyeampong et al., 2013).

In the case of Ghana, various studies showed that teacher capacity to teach in local languages is low (Hatch, Cao, Omoeva, Frazier, Moussa, Atintono, Nsoh & Owu-Ewie, 2018; Erling et al., 2017; Seidu et al., 2008; RTI International, 2015). Seidu et al. (2008) administered a literacy test to 2,418 teachers in 327 schools and found that only 18.6% were literate in an LI; 62.9% were partially literate and 18.4% were not literate in any LI. The capacity by grade showed that only 16.5% of all Grade K-3 teachers were fully literate in an LI; 64.2% were partially literate and 19.4% were not literate in any LI.

In general, LI reading skills were stronger than writing skills, but both were too low for effective LI instruction. The study indicated that 23.7% of teachers could not read in the LI, 27.7% were able to read with mistakes, and just under half of the teachers (48.6%) were able to read correctly. Additionally, 22% of teachers had no reading comprehension, 28.5% partial comprehension, and approximately half of teachers (49.5%) had accurate comprehension. Results in writing were weaker, with 26.9% of teachers unable to write in the LI, 38.5% able to write with mistakes, and just 34.9% of teachers able to write correctly. In terms of capacity within schools, they found that six of the 327 schools surveyed had no teachers who were literate in the LI. However, 100 had no teachers able to read and write with understanding and fluency in the LI. In other words, while the great majority had at least one teacher with some LI literacy abilities, almost a third of them lacked teachers with sufficient skills to effectively teach in the LI.

Many teachers in sub-Saharan Africa struggle to teach in a language in which they lack reading and writing experience.

A study conducted in Ghana ten years later (Hatch et al., 2018) had a substantially larger sample size but used self-reported information rather than teacher language and literacy assessments. The study used a national level sample including 100 districts and 7,105 schools, and administered questionnaires to head teachers, teachers, and students. The responses were analyzed in light of data on the designated LOI for each school and “match level” ratings were used (“high,” “medium,” and “low”)⁵. They found that 71% of schools have a student population using more than two home languages and only 29% have pupils that share just one home language. In terms of the match between the students’ language and the school LOI, 58% of the schools were high, 11% were medium, and 31% were low. Furthermore, 57% of schools have a match between the teachers’ ability to speak the LI and the designated LOI of the school, and 73% have a high teacher match, meaning more than 80% of the lower primary teachers at the school speak the LOI, 15% have medium teacher language match, 12% have low match, and 3% have zero match. Finally, in terms of the overall match (i.e. pupil and teacher share a language, which also matches the school LOI), 46% of schools have high overall match, 41% have medium match, and 13% have low overall match. There was a wide variation across geographical areas, with the lowest matches in the most urban areas (e.g., the capital city of Accra).

It is important to note that the researchers of the aforementioned study calculated the matching index based on teachers’ self-reported ability to speak the language, not their self-reported ability to teach in the LI. The study did not include observational data or teacher assessments that would serve as better proxies to determine teachers’ LOI language and literacy skills and thus their ability to teach in it. In other words, while a high percentage of teachers may be able to speak the LOI of a school, they may not have the literacy or

⁵ The match level is calculated in the following way: “high” is for schools in which more than 80% of teachers/pupils speak the language, “medium” is for schools in which 60%-80% of teachers/pupils speak the language, and “low” is for schools in which less than 60% of teachers/pupils speak the language.

pedagogic skills to support students' reading and writing acquisition in the local language (Erling, 2017). Speakers of the local languages might not have experienced formal learning through the language and be able to use it well in the written form.

The lack of formal training in reading and writing in a local language extends to other countries as well. In the case of Namibia, Cwi & Hays (2011) found that all 11 teachers in the project examined spoke the local language fluently, however they were not technically qualified by an accreditation process. Thus, the teachers did not have training in orthography and other aspects of language learning that are essential for teaching literacy development. Similarly, Jones & Barkhuizen (2011) found that in Kenya, teachers had difficulty writing in Sabao even though they considered themselves proficient in Sabao. Chitera (2010) found that in Niger, and across other African countries, though many teachers can speak the local language fluently and are enthusiastic, a large number of teachers are not proficient in reading and writing in the local language. Many teachers do not have the skills for teaching literacy in the local language, including reading and orthography (Chitera, 2010).

In some countries, teachers were found to lack the capacity to speak in the local language, which limited their ability to help their students understand content and learn, such as in the cases of South Africa (Essien, 2014; Vandeyar & Killen, 2007) and Nigeria (Adekola, 2007). Ethiopia is another example of a mismatch between teacher and student dialect background (Woldemariam, 2007). For example, teachers did not always speak the same dialect of Gamo as their students, which resulted in students having difficulty understanding their teachers. Furthermore, teachers used taboo words accidentally because they didn't have sufficient L1 proficiency in students' dialect, which caused major disruptions to the class. Finally, students reported that teachers have difficulty writing in the local language, which teachers also acknowledged as an issue. Both students and principals reported that teachers incorrectly evaluated student progress because of this limited writing ability.

The aforementioned studies examine local language and literacy skills in specific countries at a given moment. Overall, the studies are limited in their geographical coverage and methodologies. Local language skills are not assessed in the same way over time even within one country, data is often self-reported, and when data is observational, it is not systematic or based on a protocol. With the plethora of EGR programs employing bilingual education across sub-Saharan Africa, it is important and possible to have relevant and updated data to inform programming and decision-making. In their study examining four countries (Malawi, Tanzania, Nigeria, and Senegal) Pouezevara et al. (2016) found that teachers' local language skills are not assessed in EGR programs. In Malawi and Nigeria, teacher language skills are not part of the classroom observational tools. In Tanzania, teacher language skills are not included in the observation tool, nor are they one of the factors measured in the factors associated with Early Grade Reading Assessment (EGRA) and Early Grade Math Assessment (EGMA) performance. In Senegal, teacher language skills are also not measured.

In sum, findings revealed limitations in teachers' local language capacity for teaching in bi/multilingual classrooms in sub-Saharan Africa. Furthermore, while some attempts have been made to gather data on teachers' language and literacy skills for teaching in the local language, successful implementation of bi/multilingual education will depend on having adequate and accurate information to inform programming and teacher deployment.

Teachers' Language and Literacy Skills in the Ex-Colonial Languages

Bilingual programs aim to equip students with literacy skills in their first language (L1) as well as in an additional language (L2/Lx). In the case of sub-Saharan Africa, the L2 is most commonly the former colonial (or ex-colonial) language. However, in sub-Saharan African countries, many teachers are not fully proficient in the ex-colonial languages (Laguarda et al., 2013). In countries where English is the ex-colonial language, teachers often have low oral fluency in English (Trudell, 2016), and teachers' knowledge of English has been low in general (Ball, 2010). Low proficiency of teachers in the ex-colonial language creates a problem for learners, as they are not able to effectively acquire the language and literacy skills they need when the LOI shifts to the L2. Because transitional models (early- and late-exit bilingual) are the most common approaches for implementation of local language policy in sub-Saharan Africa, 4th-7th grade teachers must have the language and literacy skills to teach exclusively or predominantly in the ex-colonial language.

As in the case of local language proficiency, proficiency levels are not systematically assessed to ensure that teachers are prepared to teach the L2. Research conducted in Ghana revealed that teachers' competence in English was low, particularly in communities where the language is not widely used (Erling et al., 2017). The authors cite a needs analysis carried out by the British Council in Ghana in 2012 that found that "56% of teachers did not consider their English language ability to be sufficient for teaching, and 26% of head teachers reported that teachers' ability in English was a challenge to the teaching of English" (p. 51). However, the authors' observational data of Grade 4-6 classroom teaching led them to conclude that the 14 teachers who participated in the study had a fairly high English ability. The majority of teachers (93%) were at least "fairly competent" in spoken English; 36% (five) of the teachers were "very competent," and only one (7%) was considered to have limited competence in spoken English. The teachers who taught at the school in a diverse, urban setting were perceived to be the most competent in English. Again, this points to the need for standardized tools and assessment standards for teachers' language skills, in this case in the LOI2. It also points to the need for more research that comprehensively measures teachers' L2 abilities across each country within sub-Saharan Africa.

Research findings on teachers' English ability in South Africa coincide with findings of relatively low English abilities of teachers.⁶ For example, Alexander (2001) found that most teachers who are expected to use English as the LOI are not proficient in the language. Similarly, Desai (2016) found that English competency was low among teachers and that even though English is the official LOI starting in Grade 4, teaching usually occurred in Xhosa, one of the most widely spoken African languages in South Africa. Setati (2008) reports that teachers expressed having difficulty with English during college, which they attributed to their English studies not occurring early enough in primary school. Essien (2014) found that some pre-service teachers in the teacher education college had low proficiency in English. One study (Taylor, 2016) examined teachers' English abilities in

⁶ Only two studies (Vandeyar & Killen, 2007; Setati, 2005) found the teachers in their studies to have high proficiency in English, but both were very small samples (three and one, respectively) and the teachers (sample size three) were in urban schools.

performing different types of tasks and concluded that the level of most learners and teachers' proficiency in English is too low for the optimal use of English as the LOI at the secondary level. The study also found that Grade 6 teacher English reasoning proficiency on the Teacher SACMEQ⁷ exams was low.

The low proficiency of teachers in the ex-colonial language creates a problem for learners.

In Rwanda in 2008, English was mandated as the new LOI beginning in Grade 4, however teachers expressed that they did not feel proficient in English (Nkubito & Uwababyeyi, 2017). Many older teachers were concerned that they were not prepared to utilize English as the LOI and that it would be too difficult for them to learn. However, teachers who had studied English did not share the same anxiety regarding the new LOI policy. Head teachers also expressed concern about teachers' English proficiency in regards to the LOI. Based on study observations, Nkubito & Uwababyeyi (2017) found that teachers were not fully proficient in English and had to resort to Kinyarwanda, their MT.

Similarly, in Kenya, research revealed that teachers had limited writing and oral proficiency in English (Ogechi, 2009). In Nigeria, it also was observed that teachers had weak competency in English and were unable to communicate effectively in the language (Adekola, 2007).

In sum, levels of teacher proficiency in the ex-colonial language vary within and across countries. Yet according to the research reviewed for this study, speaking and writing proficiency levels remain low and are insufficient for ensuring that students can effectively learn these languages. This is a concern related to the language policy of the majority of countries within sub-Saharan Africa. Students develop their foundational language and literacy skills in the L1 in the early primary grades, but then are expected to learn all subject matter in the L2 in upper primary and beyond. This issue reflects a mismatch between policy and implementation, as in the case of teachers' local language proficiency.

Effects on Student Outcomes of Teachers' Language and Literacy Skills

There is a dearth of research that directly (and causally) examines the relationship between LOI proficiency and student outcomes. However, it is widely accepted that teachers are able to better engage students when they have a strong command of the LOI (Erling et al., 2017; Setati, 2005). Teachers who are competent in the LOI in lower primary bilingual classes are more competent in employing effective teaching practices (Erling et al., 2017). They are also better able to identify with and empathize with their students, leading to more

⁷ The Southern and Eastern Consortium for Monitoring Education Quality (SACMEQ) conducts a regional international comparative assessment that includes an assessment of teachers' skills.

engaged learning (Setati, 2005). While very few of the studies reviewed made a causal link between student outcomes and teachers' LOI proficiency, evidence did point to teacher LOI proficiency being a critical factor for students to effectively learn. Additionally, literature that examined teacher practices revealed that when teachers have limited LOI proficiency, their practices tend to be less effective for student learning.

Though not causal, studies have revealed that when teacher LOI proficiency is low, student learning also tends to be low. In a case study of a school in South Africa, Desai (2016) found that teachers had low proficiency in English, which was the LOI from Grade 4 on, and students had poor writing performance in English. In an evaluation of a project in Tanzania and South Africa,⁸ students showed greater learning gains in subject areas as well as greater understanding of the English language when their MT was the LOI for Grades 4-6, compared with the control group that utilized the early-exit model (where the MT was no longer the LOI starting at Grade 4). The author does not directly present this link to teacher language proficiency as causal, though notes that in the school studied, all teachers and school-management staff, as well as 99% of pupils, are of Khayelitsha ethnicity, and are Xhosa-speaking.

A qualitative study of three Grade 4 teachers in South Africa (Vandeyar & Killen, 2007) report that none of them spoke the languages of the students' MT, and thus used only English and Afrikaans for teaching. Though the study did not conclude a direct link, they found that students who did not speak English or Afrikaans struggled to understand what was happening in the class. They also report that the teachers' abilities to accommodate the students' linguistic and cultural differences for assessment were directly influenced by their own language abilities. Additionally, Makalela (2015) conducted a mixed methods study in South Africa on pre-service teachers learning a new local language, in which the control group was taught in a monolingual approach while the treatment group was taught using a translanguaging approach. In other words, the control group was taught using only a local language (Sepedi) as the medium of instruction while the treatment group was taught utilizing an approach that emphasized flexible use of the target language (Sepedi), the teachers' home languages, and English. This second approach allowed teachers to maximize communicative potential by drawing on their linguistic repertoires rather than using languages as separate codes. Higher vocabulary gains were found for the treatment group, suggesting that translanguaging was an effective method for teaching literacy in new languages.⁹

In Mali, research findings point to low teacher proficiency in local languages that were tied to low student outcomes. Varly (2010) cites a study in which the low student reading skills in the LI (local language and the LOI) was attributed to low teacher proficiency in the LI, among other variables. The study also revealed that the teachers' MT may be different from the LOI, teachers are not fully bilingual, and teachers lack training to teach in national African languages. Varly (2010) also reports his findings that examined the use of the national African languages as the LOI in Grade 2 classrooms, with snapshot classroom observations and students' EGRA scores (including 77 classrooms). The report states that the EGRA test administrators expressed a concern about the teachers' command of LOI, and noted that

8 "The Language of Instruction in Tanzania and South Africa" Project.

9 While this study was not conducted with children (i.e. primary students), it is a promising finding regarding student learning and the use of local language with a translanguaging approach.

even using the LOI, teachers could not teach the children to read. Findings revealed that teachers' methods and behaviors contributed to 2.25% of the variance in student outcomes. Teachers "behaviors" include qualitative comments by the evaluators about teachers' competencies (e.g., LOI proficiency and lesson structure) and class climate. In sum, although the research did not present causal evidence between teachers' command of the local language (LOI) and student outcomes, the qualitative data obtained regarding the teachers' LI command led the researcher to believe that this did have a negative effect on student reading outcomes.

There is very little research on teacher practices as they relate to limitations in teacher LOI proficiency.

Finally, in countries where teachers have very little capacity to teach in the ex-colonial language, bilingual education has shown to have better results. For example, a study of primary education in Burkina Faso (Lavoie, 2008) concluded that "bilingual based education is educationally more effective than monolingual education, which is in a language that is foreign to the pupils, and which parents and the community, as well as the majority of the teachers, do not master" (p. 673). Rwanda is another case in which both limited teacher capacity in the ex-colonial language (Nkubito & Uwabayeyi, 2017) as well as widespread familiarity with the local language (Kinyarwanda), make a strong case for the local language being the LOI in the lower and upper primary grades (Samuelson & Freedman, 2010; Brock-Utne, 2012b).¹⁰

TEACHERS' LANGUAGE AND LITERACY SKILLS AND THEIR CLASSROOM PRACTICES

There is abundant research on teacher practices in multilingual contexts in sub-Saharan Africa, but there is very little research on teacher practices as they relate to limitations in teacher LOI proficiency. One of the most common strategies that teachers use is code-switching, which is the practice of alternating between languages within and across sentences. Probyn (2009) notes that in South Africa, the use of code-switching is dependent on the teachers' proficiency in the LOI. Code-switching is less frequently used when teachers are not proficient enough in the LOI (McGlynn & Martin, 2009). Pouezevara et al. (2016) attribute teachers' use of code-switching to accommodating students' language deficiencies in the case of Senegal. As discussed in Section IV (Teachers' Attitudes and Beliefs Towards Local Languages), even though code-switching is used widely in many sub-Saharan African countries, it is generally not recognized as a valid pedagogical strategy or even a necessarily effective one. This contradicts research that demonstrates that code-switching in bi/multilingual classrooms can be an effective way to increase student understanding of and engagement with content (Makalela, 2015; Probyn, 2009; Setati & Adler, 2000; McGlynn & Martin, 2009).

¹⁰ Brock-Utne (2012b) argues that donor influence has played an important role in influencing the government towards a policy shift mandating English as the primary LOI.

Studies have shown that when the ex-colonial language, English, is the LOI in multilingual countries, it increases the likelihood of teachers' reliance on traditional classroom practices (Erling et al., 2017). It also increases teachers' reliance on what is referred to as "safe talk" (p. 35), which is classroom speech that allows participation without any risk of embarrassment for the teacher and the students. Thus, it maintains an appearance of "doing the lesson", while little learning is actually taking place. The authors state that "[T]eachers who are not confident in English have been found to rely more on drilling and memorisation, while using a wider range of teaching strategies when using their mother tongue" (p. 35). This suggests that if English (or another ex-colonial language) is the LOI, it is important to prioritize support for teachers to expand upon their pedagogical strategies and ensure these strategies are used in practice so that students can meaningfully engage with content.

In sum, though there is limited research on the relationship between student learning outcomes and teachers' language and literacy skills and practices in the LOIs, existing research has demonstrated that there is a relationship: when teachers lack the language and literacy skills necessary to effectively teach in the LOI1 and/or LOI2, students learn less and engage less with content.

Challenges in Ensuring L1 And L2 Teacher Language and Literacy Capacity

Current government requirements for ensuring that teachers have the language and literacy capacity to teach in the L1 and L2 vary across countries in sub-Saharan Africa, as does the degree of implementation of these requirements and policies. However, there are some common themes which include 1) the content and type of pre-service and in-service training, 2) credentialing requirements, and 3) teacher deployment criteria and decisions.

TEACHER PREPARATION

Even if a policy supports teacher preparation in local languages, a common challenge is insufficient preparation for teachers in the local languages they will be deployed to teach (Ouane & Glanz, 2011). Given this lack of adequate training, prospective primary school teachers are not able to effectively teach, monitor, and assess learners using the local language (Chitera, 2010). Some scholars attribute this lack of teacher preparation in the local languages to the dominance of ex-colonial languages in society in general, as well as specifically for education. For example, Chitera (2010) points out that most teacher training programs were developed at the time of independence and still train teachers to teach subjects in the colonial languages. Benson & Plüddemann (2010) underscore the irony of using ex-colonial languages to empower speakers of African languages. It also illustrates a mismatch between the language policy and teacher training practices. While efforts may be underway in some countries to incorporate local language learning into teacher preparation programs, this remains a substantial challenge for improving bi/multilingual education.

Kenya, South Africa, Ghana, and Nigeria are all countries with policies that support local language instruction. However, research indicates that teachers in these countries are not being prepared to teach in the local languages. Research on Kenya (Jones & Barkhuizen,

KEY CHALLENGES

LANGUAGE AND LITERACY SKILLS

Teacher Preparation

- ▶ Insufficient teacher preparation in the local languages they will be deployed to teach is a widespread challenge.

Teacher Requirements

- ▶ Across multiple countries in sub-Saharan Africa, teacher requirements are not necessarily indicative of teacher preparedness.

Teacher Deployment Policies

- ▶ Criteria for teacher deployment do not necessarily include teacher capacity for teaching in the local language of the community/school.

2011) found that teachers are only prepared to teach in English and their pre-service training did not prepare them to teach in a local language. Similarly, Setati (2005) reports a lack of teacher training for local language of instruction in South Africa. The author states that teachers involved with local language instruction have received no formal training on the language structure, or even how to write it, even though they may speak it fluently. In Ghana, there are still many teachers who lack formal training, despite the high demand for them to teach in local languages (Stranger-Johannessen, 2017). Finally, in Nigeria, only a third of teachers felt their teacher certification program had adequately prepared them to use Nigerian languages to teach all subjects in Grades 1–3. While 37% of teachers had received preparation for teaching initial reading and writing skills in English, only 27% had used a Nigerian language to carry out teaching practices (Adekola, 2007).

Additionally, in order for teachers to have the opportunity to learn and/or receive their teacher preparation in a local language, there must be sufficient capacity at the teacher trainer level. In Nigeria, teacher educators are often not fully proficient in Nigerian languages, greatly contributing to the lack of adequate teacher preparation in the local languages (Adekola, 2007). This is the case in multiple countries in the region, in which teacher education college professors were found to lack proficiency in the local languages (Akyeampong et al., 2013).

Teacher preparation training may be insufficient to enable teachers to teach in the ex-colonial language. The case of South Africa highlights the deficiencies in teacher preparation for teaching English as the LOI. A study of English curricula for pre-service teacher education offered at five universities in South Africa revealed that all but one offered academic literacy to student teachers due to the poor language and reasoning skills (in English) that students bring to the university (Taylor, 2016). However, unless student teachers choose to specialize in English teaching, the credits offered focusing on building English skills were quite limited (Taylor, 2016). Regarding English course content offered to students specializing in primary level English teaching, low levels of attention were paid to teaching English as a second language and learning how to use appropriate pedagogies for teaching reading and writing (Taylor, 2016, citing Reed, 2014).

TEACHER REQUIREMENTS

Across multiple countries in sub-Saharan Africa, teacher requirements are not necessarily indicative of teacher preparedness. As argued by Akyeampong et al. (2013), the credentialing process is more about signaling than actual command of skills and abilities; the focus is on the prestige and paper qualifications and there is a lack of performance standards in certification requirements. Similarly, in South Africa, the teacher minimum requirements were limited in detailing specific language skills required (Taylor, 2016). Though there is a requirement that teachers must specialize in the teaching of two languages (including a local language), there is no requirement for literacy instruction in the languages (Taylor, 2016). However, new requirements have begun to address what skills teachers need to enable them to teach in multilingual settings (Taylor, 2016).

Entry requirements may not be sufficient to ensure teachers have the foundation needed to develop literacy skills for effectively teaching in the L1 and L2. Ogechi (2009) posits

that in Kenya, entry requirements to teacher education colleges admit students with poor performance in secondary school, which may contribute to poor command of English language skills. Stranger-Johannessen (2017) also emphasizes the need to revisit entry requirements to colleges of education in the case of Ghana.

Conflict/ex-conflict countries may face particular challenges regarding teacher requirements. For example, the lack of transferability of requirements across international borders has been an obstacle to ensuring there are a sufficient number of teachers that meet official requirements. In South Sudan, teachers who acquired credentialing abroad in Uganda during the war found that their credentials were not recognized in South Sudan upon their return, so they were not paid according to their credentials (Laguarda, 2013). This issue is particularly critical in the context of sub-Saharan Africa where numerous countries face challenges in acquiring qualified teachers because of displacement and migration linked to conflict and crisis.

TEACHER DEPLOYMENT POLICIES

Teacher deployment policies and practices are key challenges to ensuring that teachers are proficient in the LOI of the school. Criteria for teacher deployment do not necessarily include teacher capacity for teaching in the local language of the community/school. For example, in Ghana, sex, age, experience, and qualifications are considered when making deployment decisions, while teacher capacity in the LOI is not necessarily considered (Seidu et al., 2008). In their study in Ghana, Seidu et al. (2008) found that only 18.2% of district directors considered LI fluency for selecting where to post teachers, and only 5.2% of head teachers considered LI fluency when assigning teachers to classes. Ghana also showed wide variation between regions in the degree with which teachers deployed to schools had the necessary LI language and literacy skills for those schools. Some schools had teachers who were native speakers in the designated LOI, such as the majority of teachers in Dagaare, Ewe, Kasem, and Nzema schools. Yet in others, most notable the Ga schools (in the Accra area) only about half of the teachers reported having “limited working ability” in the language and 20% said they did not speak the LOI at all (RTI, 2016).

This mismatch also occurs in Zambia, Kenya, and South Africa. According to Nkolola-Wakumelo (2013), in Zambia “current labour laws state that a person can be sent to work wherever a vacancy is available without regard to the language used in the area, so often Zambian language teachers are sent to areas where the language they know is not spoken” (p. 140). In Kenya, teacher deployment practices do not consider teachers’ proficiency in the local language of the catchment area (Piper, Zuilkowski, Kwayumba, & Oyanga, 2018). Finally, in South Africa, Setati (2005) found that classroom assignment and teacher deployment are contingent on ethnicity, not command of the local LOI language. As he states:

Gamo teachers were assigned to teach in Gamo classes, despite the fact that they did not have good command of the language, whereas qualified experienced teachers, despite their ethnic incompatibility, were rejected even though they spoke and understood the language well. Membership to the ethnic group was considered the principal criterion for recruiting teachers and administrators (p. 224).

In sum, the challenges to ensuring that teachers are equipped with the language and literacy skills to teach effectively in the L1 and L2 languages are largely due to policy, policy in practice, government and institutional requirements, and deficient information use for decision-making. Teachers lack the opportunity to become fully literate in a local language and the opportunity to attend teacher preparation programs that use a local language as the medium of instruction. Additionally, in many countries, entry and/or graduation requirements for teacher preparation programs are not rigorous enough to ensure teacher proficiency in the L1 and L2. Finally, it is common that teacher deployment policies do not consider local language proficiency a criterion, resulting in a mismatch between the school's designated LOI and the teacher's capacity to effectively help students learn the L1. The following section discusses ways to address such challenges.

Recommendations

There are several recommendations to help ensure that teachers have the necessary language and literacy skills to facilitate student learning that are applicable across contexts. These include policies and practices regarding teacher recruitment, deployment, preparation, requirements, and language support, as well as teacher and student language capacity mapping and assessment.

LANGUAGE MAPPING AND SKILLS ASSESSMENT

One of the most important issues found across countries is a lack of availability, and use of, accurate information regarding teachers' L1 and L2 language and literacy skills. Having this information is a first step towards ensuring effective implementation of bi/multilingual instruction. Because the designated LOI of the school is not always the students' MT, it is recommended that language mapping be carried out to determine the most appropriate LOI for each school (RTI, 2015). Then, a re-examination of the official LOI designation for each school can be assessed to ensure a better match between the students' MT, the designated LOI, and the teachers' L1 language abilities (Hatch et al., 2008). Also following the language mapping, a strategy should be developed to identify the languages spoken by teachers vis-à-vis the needs of the system. Teachers' language proficiency should be assessed prior to deployment to ensure they are proficient in the language(s) of instruction (RTI, 2015). Finally, in cases of language mismatches in which none of the officially approved local languages of instruction matches the students' MT, the status of other local languages should be re-examined to determine if they qualify for approval (Hatch et al., 2008).

Regarding English or other ex-colonial language and literacy skills, studies have demonstrated a wide diversity between rural and urban settings (Erling et al., 2017). In such settings, more comprehensive and nationwide assessments of teachers' English abilities (oral and written) are needed in addition to teacher L1 assessments.

In addition to language mapping, there are also ways to assess the language skills of teachers continually and as part of programming. Tools to assess teachers' language and literacy skills in the LOIs have been developed in some countries; these can be adapted and/or developed

for other countries and languages to systematically assess teachers' mastery of language and literacy skills for effectively teaching. This would allow accurate and up-to-date information to be obtained. There are many EGR programs being implemented across sub-Saharan Africa. Teachers' language and literacy skills in the L1 and L2 should be included in the classroom observational tools and L1/L2 literacy tests can also be administered to teachers as part of the monitoring and evaluation of these programs (Pouezevara et al., 2016).

In countries that have assessed or are currently attempting to assess teachers' language and literacy skills in the LOIs, it is recommended that a meta-study be carried out to identify which methods are being used in each country, and to determine the most reliable yet practical approach (in terms of cost, teachers' acceptance, and other factors) for conducting this type of assessment systematically and continuously. When LOI policies are put into place that do not realistically match the language and literacy capacity of the teachers in the new LOI, it is unlikely that implementation will be successful. New LOI policies should be analyzed in relation to teacher preparedness to effectively teach in the new LOI(s) (Nkubito & Uwababyeyi, 2017).

Finally, teacher educators must have the language capacities to effectively prepare teachers in the L1 and L2. There is a need to assess staff capacities in the colleges of education and how these capacities match with desired reforms of primary teacher education and training (Adekola, 2007).

RECOMMENDATIONS

LANGUAGE AND LITERACY SKILLS

Teacher Deployment and Recruitment

- ▶ Ensure teachers' language skills match the LOI.
- ▶ Active recruitment of multilingual teachers.

Ensure Quality Teacher Preparation in the L1 and L2

- ▶ Provide local language teacher preparation.
- ▶ Teacher educators must have local language skills.
- ▶ Ensure offerings for local language skill development.
- ▶ Ensure adequate preparation in the LOI2.

Establish Teacher Requirements to Ensure L1 and L2 Teacher Proficiency

- ▶ Establish local language exit requirements and incentives.

- ▶ Ensure teacher education curriculum is based on necessary knowledge and skills.
- ▶ Hire teachers locally.

Language Mapping and Skills Assessment

- ▶ Carry out local language mapping.
- ▶ Conduct ongoing LOI ability assessment.
- ▶ Assess LOI capacity of teacher educators.
- ▶ Ensure LOI capacity makes for feasible local language instruction.
- ▶ Provide language support for teachers
- ▶ Establish in-service local language capacity building.
- ▶ Implement school-based local language mentoring.
- ▶ Develop scripted materials for teachers to develop their local language abilities.

II. TEACHER LANGUAGE AND LITERACY SKILLS | 35

TEACHER DEPLOYMENT AND RECRUITMENT

It is essential to revise the teacher deployment process to ensure that teachers are assigned to schools and classrooms where they are equipped to teach in the LOI (Erling et al., 2017; Hatch et al., 2018; Seidu et al., 2008). Hatch et al. (2018) recommend that teacher deployment practices be revised to prioritize language alignment. They also argue that teachers should not be eligible for deployment if they have not passed a proficiency test in the local language LOI of the school. At the school level, teachers who speak and read in the local language LOI can be reassigned to the early grades (Hatch et al., 2018) and those who do not can be assigned to the upper primary level where students' competence in English is higher (Erling et al., 2017). These practices should be backed up by an official policy for teacher deployment to match the local language LOI of the school to teacher capacity (Seidu et al., 2008). So that school and regional staff can best support the implementation of the local language policy, it is important that actors at these different levels be aware of the policy (Seidu et al., 2017), including the LOI of the schools and classrooms. Finally, there is a need to examine teacher deployment decisions in relation to specific geographical regions of a country.

Recruitment of teachers with local language and ex-colonial language skills is another key component of ensuring that there are teachers with sufficient language capacity such that students receive instruction in their MT. There should be active recruitment on the part of the government to meet this need (Erling et al., 2017). Additionally, governments should develop and implement an efficient teacher recruitment strategy to increase local language teachers nationally (Seidu, 2008). Furthermore, recruitment should be based on information of where speakers of languages underrepresented in the teaching corps may be needed (RTI, 2015).

ENSURE QUALITY TEACHER PREPARATION IN THE L1 AND L2

To prepare teachers to teach in a local language, it is recommended that pre-service and in-service training be provided in the language used in the school (RTI, 2015; Mtenje, 2013; Woldermaria, 2017; Heugh et al., 2007). Teachers whose training uses the national African languages are more likely to have the technical and pedagogical vocabulary needed to teach curricular subjects and with confidence in their own language ability (Erling et al., 2017). Furthermore, student teachers should conduct their practical teaching experience in the local language (Ejeh, 2004).

In order to ensure that teachers are given adequate preparation in the local languages in their pre-service program, it is crucial that teacher educators are fully proficient in these languages (Ejeh, 2014; Adekola, 2007; Akyeampong et al., 2013). Teacher educators (or "tutors") at teacher training colleges should also be knowledgeable about approaches to teaching local languages considering their orthography and oral and written literature (Akyeampong et al., 2013). It is recommended that teacher educators have in-depth knowledge of at least one local language, how it should be taught as a subject in the school curriculum, and how to train teachers in this field of knowledge (Adekola, 2007). Finally, there is a need for specialized training for educational practitioners who can design and supervise MT education and will, in turn, train teachers to implement it.

There is also a need to ensure that the curriculum and teacher preparation offerings are adequate in preparing teachers to have a command of local languages. This entails enriching the curriculum content at teacher training colleges for L1 instruction (Seidu et al., 2008). Additionally, working with university language specialists to adapt teacher training has been shown effective for making sure that the teaching force is adequately prepared (RTI, 2015). They can help ensure the quality of the local language and bilingual curriculum as well as help equip teacher trainers and teachers to provide instruction in the local languages.

Just as it is essential that teachers have the language and literacy capacity to teach in the local languages, they must also be equipped to teach in the L2. It is not enough for students just to be taught in English; they should be taught in English by teachers who fully command the language and who have the required resources (Desai, 2016). Modules of English should be prepared separately according to the teachers' proficiency levels in English, and teachers offering the same subjects should be trained together to enable them to learn technical terms (Nkubito & Uwababyeyi, 2017). Additionally, teachers need opportunities in their pre-service training for ample practice in English. It is important that pre-service teachers are in an environment where they feel comfortable to speak English without fear of ridicule or criticism (Essien, 2017).

ESTABLISH TEACHER REQUIREMENTS TO ENSURE L1 AND L2 TEACHER PROFICIENCY

Teacher education curriculum should be revised based on what primary school teachers should know and be able to do, which includes teaching initial literacy and numeracy in a local language. They should know their own local language well and be able to prepare lesson plans and teach all subject content across the primary curriculum in that language (Adekola, 2007). Furthermore, teachers should be fluent in the L2, and be able to read and write it effectively. This could be accomplished by including a training certification program in the local languages within the pre-service curriculum. To ensure that teacher educators are qualified, programs for staff development at colleges of education should be developed to address the requirements for training primary school teachers, and linking their college work to practice in primary schools (Adekola, 2007).

Secondly, the language abilities of new recruits in the national African and ex-colonial languages should be assessed so that training can be tailored to their needs in a way that ensures they develop the competencies necessary for teaching both. Exit requirements should be put in place to ensure that newly trained teachers have the necessary skills in national African languages and the ex-colonial language.

Finally, in some cases, there may be teachers at a local level who are able to teach in the local language but, due to requirements, this is not allowed. For example, in Namibia requirements were adjusted so that village teachers who were not officially qualified to proceed to accreditation were allowed to do so (Cwi & Hays, 2011). Thus, while in some cases more stringent requirements may be preferable, in others, requirements may need adjustment to accommodate shortages of teachers proficient in the L1, including through building on local capacity. Entry requirements should emphasize both language competence



FURTHER RECOMMENDED RESEARCH

LANGUAGE AND LITERACY SKILLS

- ▶ Language mapping research across countries implementing local language instruction.
- ▶ Case study research on data availability and use for teacher preparation and deployment.
- ▶ Research examining the relationship between teachers' local language and literacy skills and student learning outcomes.
- ▶ Research on the effects on student learning of code-switching and translanguaging.
- ▶ Research on strengthening teachers' local language capacity: case studies and systematic reviews.

and cultural appreciation, which will require more flexible entry requirements (Adekola, 2007). In these cases, it is recommended that school-based management and ongoing in-service professional support be emphasized to compensate for deficiencies that these teachers may have in cases of more flexible requirements (Adekola, 2007).

LANGUAGE SUPPORT FOR TEACHERS

As policies and practices are put in place to ensure teachers' national African and ex-colonial language and literacy skills are strengthened within teacher preparation institutions and programs, **it is also important to provide support to teachers in the field at a local level who currently do not have adequate LOI language skills.**

Providing in-service teacher education that develops local language capacity for teachers is highly recommended (Seidu et al., 2008; Erling et al., 2017). This training and support are crucial for both current and new teachers to ensure the success of a new language policy (RTI, 2015). Furthermore, it is recommended that teacher training be provided within proximity to the school (Adekola, 2007). This can be done through establishing a policy for decentralizing teacher training, as in the case of Senegal (RTI, 2015).

School-based teacher mentoring and support for literacy in local languages are also recommended (Adekola, 2007; Nkubito & Uwababyeyi, 2017; Erling et al., 2017; Ball, 2010). One approach is to have a local language teacher or teaching assistant dedicated to language support by helping teachers develop local language vocabulary and reading and writing skills for teaching (Erling et al., 2017). This can be done through professional mentoring programs (Nkubito & Uwababyeyi, 2017) or through identifying individuals to provide language support at the community level (Hatch et al., 2018). It is important to ensure a good match between the teachers' specific needs and the mentors' capacity (Nkubito & Uwababyeyi, 2017). Such school-based language mentoring can also be provided for developing abilities to teach the ex-colonial language.

Materials in the local language can be designed to help teachers develop their capacity in that language. For example, based on the language capacity study in Ghana (Seidu et al., 2008), it was decided that highly scripted lesson plans should be developed in the L1 with translation in English (or relevant L2) to help teachers build their L1 language skills and to more effectively teach in the L1 (Rosekrans et al., 2012). If teachers are not provided materials in the language that matches the LOI of the school, they may resort to English (Erling et al., 2017). Thus, careful attention must be given to developing and distributing L1 instructional materials to teachers based on accurate and updated information (e.g., language capacity mapping and assessment and designated LOI). Finally, when teacher instructional materials are developed solely in the local languages (with no translation), it is important to ensure that teachers have adequate L1 capacity to use the materials for effective instruction (Jones & Barkhuizen, 2011).

Though many recommendations provided in this section are applicable across contexts, it is important to carefully consider the local context and adapt the approaches accordingly. Practices that work for multilingual contexts in one country may not work in another. Colonial legacies, historical contexts of language development, and the nature of the languages in consideration or used, as the LOIs in a country are all important in determining the best education policies and practices (Essien, 2017).

Future Research

Teachers' language and literacy skills in local LI languages have been researched in very few countries. Comprehensive research is needed for all countries aiming to implement local language instruction. This is equally true for teachers' capacity for teaching in the second/ additional language, whether that be an ex-colonial, national, or regional language.

Furthermore, very little research has been done that examines the relationship between teachers' language and literacy skills and student learning outcomes. Specifically, studies are needed to better understand the gaps in teachers' language and literacy abilities in the LOIs and how these imbalances can be addressed. It is important to examine which approaches to improving teacher language and literacy skills are the most effective at boosting student learning outcomes. For example, using qualitative methods such as classroom observation to capture teachers' use of LOI as it relates to student learning can be an effective approach (Varly, 2010).

Although studies in this report discuss teacher practices in bi/multilingual classrooms in sub-Saharan Africa, more research is needed on how practices such as code-switching and translanguaging impact student learning. For example, translanguaging was determined an effective approach for teachers to learn a local language (Makalela, 2015). Research should be conducted to find out whether translanguaging could have the same effects on younger learners who have not yet accumulated the same depth of cultural experience.

More research must be done to understand how to strengthen and expand teachers' language and literacy skills in the LOIs in a systemic and sustainable way. For example, further research is needed to understand how teacher training colleges can build student teacher capacity for local language instruction (Seidu et al., 2008). A systematic review is needed of interventions and efforts across countries to strengthen institutions and mechanisms for improved teacher local language capacity. Additionally, given the large volume of teachers with limited national African and ex-colonial language skills already working in the field, a study on how to best support teachers with limited language skills and how to upgrade those skills (e.g., in-service professional development, school-based management, etc.) is also recommended.

III. Teacher Pedagogical Knowledge and Skills

Effective teaching is one of the most essential components for student learning, especially in sub-Saharan Africa (Nordstrom, 2015; Pouezevara et al., 2016). Teaching quality is found to account for higher student achievement in sub-Saharan Africa compared with high-income countries, at a proportion of 27% across nine sub-Saharan African countries, versus 5-10% in high-income countries (Dembélé & Lefoka, 2007).

While access to education in sub-Saharan Africa has improved substantially over the last decade, learning outcomes remain low. There is an insufficient number of qualified teachers in the region, which could have a significant impact on education outcomes. There is still an urgent need for qualified teachers in sub-Saharan Africa to meet universal education goals. As Nordstrom (2015) points out, “[a]ccording to the UNESCO UIS, nearly 1 million primary and 1.6 million lower secondary teachers would be needed to achieve universal lower secondary education in sub-Saharan Africa by 2015; many more would be needed (due to attrition and population growth) if those goals were delayed until 2030” (p. 18).

While it may be clear that qualified teachers are in high demand in sub-Saharan Africa, defining what constitutes a high-quality teacher is difficult and presents multiple challenges. This difficulty is heightened in environments with multiple languages of instruction. This

Teacher Pedagogical Knowledge and Skills

- What is known about teachers' existing level of preparation for teaching in multilingual contexts and what are the gaps?
- What is known about the influence of teachers' knowledge and skills in teaching multilingual education on students learning outcomes?
- What does the evidence reveal in terms of recommendations to ensure that teachers are equipped to effectively teach in multilingual settings?

section defines what constitutes a qualified teacher for teaching in a multilingual context. It examines qualifications, knowledge, and skills of teachers.

This section synthesizes and analyzes the research literature to address these questions, and points to gaps in the evidence base. First, the knowledge and skills that teachers should have for effective teaching in a multilingual classroom are defined, followed by a sub-section that discusses the most salient challenges in ensuring that teachers have the preparation to acquire these skills and knowledge. In the following sub-section, research literature on teachers' knowledge and skills, and the effects on student outcomes in sub-Saharan Africa, is examined. Recommendations for addressing the main challenges and improving teaching quality are provided, followed by recommendations for future research.

Teachers' Knowledge and Skills for Teaching Multilingual Education

As highlighted in the "Landscape Report on Early Grade Literacy" (Kim et al., 2016), teachers' knowledge encompasses pedagogical, content, and technological knowledge. Specifically, for literacy development, this entails having theoretical understanding of the development of oral language, cognition, reading, and writing. Teachers also must have practical knowledge of how to teach oral language development and reading and writing. Teachers must know how to use supporting tools (e.g., books, blackboards, teacher guides) in the way that best supports the learning process as well as the specific educational content. Teaching literacy and numeracy in bi/multilingual classrooms requires additional theoretical and practical knowledge. As Essien (2014) states, "it is not given that pre-service teachers would develop competence in teaching in multilingual contexts by the mere fact that they sit in multilingual classes during their training programme" (p. 63). Teachers must have theoretical and practical knowledge of oral and written language acquisition in two or more languages (Benson, 2004; Adekola, 2007; Commeyras & Ketsitlile, 2013; Akyeampong et al., 2013); understanding of the cognitive process of bilingual language acquisition (Adekola, 2007; Akyeampong et al., 2013); and practical experience teaching in the LOIs. Additionally, they should have training on intercultural instruction (Benson, 2004), in other words; training on the cultural complexities of multilingual classrooms.

Research literature on teacher preparation for teaching in bi/multilingual classrooms in sub-Saharan African countries has revealed that, overwhelmingly, teachers are not receiving adequate preparation to teach effectively (Essien, 2014; Adekola, 2007; Akyeampong et al., 2013; Laguarda et al., 2013; Nordstrum, 2015). As stated by Ouane & Glanz (2011) in their review of MT education programs in 25 countries in sub-Saharan Africa, "teachers are not trained to detect reading difficulty and, in general, are not adequately competent in teaching reading, writing and literacy" (p.181).

KEY CHALLENGES

PEDAGOGICAL KNOWLEDGE AND SKILLS

Expectations and Standards of Qualifications for Preparing Teachers

- ▶ Standards tend to be qualification-based rather than competency-based and tend to lack practice in a school setting.

Pre-service Teacher Education

- ▶ In countries where the LOI supports local language instruction, most teacher preparation programs do not provide training on how to teach in a way that supports the policy.
- ▶ Though teachers may be proficient in a language, they often lack preparation on how to teach in the students' MT.

In-Service Teacher Education

- ▶ The effectiveness of in-service teacher education varies and highly depends on the training approach, location, and duration.

Challenges in Ensuring Teachers' Knowledge and Skills for Multilingual Education

The main reasons for teachers not being adequately prepared are: 1) low expectations and standards of qualifications for preparing teachers, 2) a lack of teacher education institutions and a lack of teacher educators equipped to impart the skills and knowledge teachers need for bi/multilingual instruction, and 3) ineffective in-service teacher education.

EXPECTATIONS AND STANDARDS OF QUALIFICATIONS FOR PREPARING TEACHERS

What constitutes a "qualified" schoolteacher varies greatly across sub-Saharan African countries, yet there are some trends (Nordstrum, 2015; Pouezevara et al., 2016). For example, standards tend to be qualification-based rather than competency-based and tend to lack practice in a school setting (Nordstrum, 2015; Pouezevara et al., 2016). According to Nordstrum (2015) there are four areas of teaching and learning for instructional effectiveness: 1) teacher characteristics and classroom-level inputs, 2) teacher professionalism and conduct, 3) student learning outcomes, and 4) teaching practice. However, expectations for effective teaching in sub-Saharan Africa tend to focus on just two areas: student learning outcomes and teacher characteristics (including educational backgrounds, degrees, professional certification(s), extent and composition of training, content knowledge, and years of experience), which assumes that these teacher characteristics will result in quality teaching (Nordstrum, 2015). A reason for focusing on outcomes as opposed to the teaching process could be that it is more difficult to monitor and evaluate the teaching processes (Nordstrum, 2015).

In addition to literacy acquisition, there is a need to educate teachers in the mathematics content for teaching in multilingual contexts. As Essien (2014) emphasizes in his research on South Africa, pre-service education focused on the identity of pre-service teachers as learners of mathematics, rather than teachers of mathematics or teachers of mathematics in multilingual classrooms: one study found only three recorded instances of teachers having reported developing identities as "teachers of mathematics in multilingual classrooms," compared with 374 recorded instances of teachers identifying as becoming "learners of mathematics content" (p. 73).

TEACHER EDUCATION INSTITUTIONS AND TEACHER EDUCATORS

Teacher education institutions are important because that is where prospective teachers acquire the skills needed to implement educational policies. However, even in countries where the LOI supports local language instruction, most teacher preparation programs do not provide training on how to teach in a way that supports the policy (Chitera, 2010). Overall, teacher preparation programs offer insufficient preparation in bilingual teaching theory and methodologies, a lack of opportunities to practice teaching in the L1 and L2, and do not help teachers to develop an understanding of the challenges specific to multilingual classrooms (Probyn, 2009).

In a study conducted in six countries (Ghana, Kenya, Mali, Senegal, Tanzania, and Uganda), Akyeampong et al. (2013) found that pre-service teacher education programs do not prepare teachers for real world multilingual teaching. The authors report that a

disproportionate amount of time of the teacher pre-service education is allocated to developing subject content knowledge and very little time on how to teach the content (e.g., reading, writing, and math). Also ignored is anything about classroom context, pupils' background, and adaptation (Akyaempong et al., 2013). Similarly, a study on teachers' appropriation of education policy reform (Chekaraou, 2009) highlights the case of Niger, in which pre-service teachers who were not trained for bilingual classrooms and were not exposed to ways to accommodate the different languages in a multilingual classroom, experienced difficulties when they began teaching in schools.

An important part of a pre-service teacher education program is student teaching (or practicum), which should be connected to coursework and systematically overseen (Kim et al., 2016). However, this link is often lacking in teacher education programs, and there is often a disconnect between courses and practicum. Lectures are the commonly used approach to prepare teachers, where student teachers take notes with little connection to practice and limited opportunity to teach (Kim et al., 2016).

The language in which teacher training is conducted is another major challenge. As Heugh et al. point out, "[t]here is exceptionally high aspiration towards English as a language of higher education (including teacher training) and as an international language that is associated with modernity and future success" (p. 6). However, reliance on English for teacher training in Tanzania and Nigeria was problematic because English was not necessarily the language teachers use for instruction or the language spoken at home (Nordstrum, 2015).

Furthermore, though teachers may be proficient in a language, they often lack preparation on how to teach in the students' MT. This was the case in Kenya (Piper et al., 2018), Uganda (Lucas, McEwan, Ngware, & Oketch, 2014), and Nigeria (Adekola, 2007). For example, in Uganda, there are no teacher education programs in local languages or in bilingual teaching methodology (Lucas et al., 2014). In Nigeria, a study on teacher preparation (Adekola, 2007) found that only about one-third of the newly prepared teachers in the sample felt that the teacher education program satisfactorily prepared them to teach in primary schools, including in subject knowledge and pedagogical skills for language development, acquisition of literacy, and the development of languages and literacy as learning tools across the curriculum. The study also found that the lowest satisfaction levels were with the local language trainings, namely with preparation for using a Nigerian language to teach all subjects in Grades 1-3, having teaching practice using a Nigerian language, and preparation for teaching reading through a Nigerian language.

The ability to move between languages to meet the learning needs of students in multilingual classrooms has also been lacking as part of teacher education programs (Chitera, 2010; Makalela, 2015). For example, in Malawi it was found that teachers lack programs in language practices linked to the LOI, and that they had difficulty code-switching from English to a local language. This difficulty was attributed to the teacher education program not adequately preparing them in the specialized skill of translation (Chitera, 2010). Teachers tend not to be properly prepared with strategies for utilizing more than one language in the classroom, including code-switching and translanguaging, which have been effective for student learning (Makalela, 2015).

Another issue is that teacher educators have few, if any, opportunities for staff development programs. Many teacher educators lack subject knowledge and expertise appropriate for training primary school teachers, or for providing them with coping strategies for the kind of school environments they will work in (Adekola, 2007; Dembélé & Lefoka, 2007; Chitera, 2010). Furthermore, like teachers, teacher educators are also heavily influenced by their own experiences in the classroom, and unless they have the knowledge and training to educate teacher trainees, they will fall back on what they know (Chitera, 2010).

IN-SERVICE TEACHER EDUCATION

In-service teacher education is often used to compensate for inadequate pre-service education and to help implement new policies and/or initiatives. The effectiveness of in-service teacher education, however, varies and highly depends on the training approach, location, and duration. Studies have shown some in-service training is highly ineffective at producing the desired results. For example, in Namibia it was found that 75% of a cohort of 30 teachers who completed an in-service program did not exhibit the desired teaching practices (Dembélé & Lefoka, 2007). Similarly, in Mali, an in-service intervention that provided 20 days of training three times a year did not adequately prepare teachers; the main reason cited was insufficient and inadequate training (Dembélé & Lefoka, 2007).

Distance can present a serious challenge to the provision of effective in-service teacher education. While the most effective teacher training programs include ongoing, in-person support, the geographic realities of sub-Saharan Africa (depending on the area) can pose significant challenges to this type of program implementation. For example, in Mali, the distance between training facilities and schools where teachers were deployed presented a barrier to the provision of in-service mentoring and other in-person support (Nordstrum, 2015).

The scale of a training initiative that would address teacher training needs presents another significant challenge. As mentioned previously, there are a great number of teachers that require additional professional development. However, when a program becomes overpopulated, the quality of the program can suffer. Teacher trainees in Mali reported that teacher training sessions were too short, too crowded, and too passive (Nordstrum, 2015). The perception that training sessions are passive is of great concern, as the opportunity for applied practice is critical for effective learning.

Ensuring relevant content presents an additional challenge, as individual teacher's needs vary by previous preparation level, existing knowledge base, and the localized context (which influences needs). As Nordstrum (2015) found, the content of training is not always aligned with teachers' needs.

Effects on Student Outcomes

Most of the studies conducted in multilingual contexts on the influence on teachers' knowledge and skills and student outcomes has been done in the context of donor-funded projects, in the form of either RCTs or project evaluations. Because these findings are directly related to specific interventions and circumstances, they are limited in terms of understanding the wider relationship between teacher preparation and student outcomes

on a national scale (Piper, Bulat, & Johnston, 2015). However, many of these interventions have been carried out (often in tandem with the host government) with the vision of scaling-up programs and institutionalizing systems and mechanisms that ensure teachers are prepared to teach in multilingual contexts. This sub-section reports the results of research findings that have examined the relationship between teacher pedagogical knowledge and student outcomes.

Enhanced teacher instructional practices have been shown to result in better student learning outcomes, as measured by higher EGRA scores. In Tanzania, teachers teaching in Kiswahili could transition between instructional approaches, leading to shorter transition time, and more time for student engagement (Nordstrum, 2015). Teachers whose students had higher EGRA scores also spent more time answering students' questions, asking their own questions, and addressing student concerns with the task at hand (Nordstrum, 2015).

Furthermore, there is evidence that interventions to improve teaching practices can impact student achievement. For example, in Mali and Liberia, teachers received structured lesson plans and in-service training in literacy instruction. Students were tested with the same reading assessment (before and after the intervention) and the outcomes in each of the countries demonstrated a statistically significant positive change¹⁰ (Lucas et al., 2014). In Uganda, the Reading to Learn intervention was an RCT in which early grade teachers, head teachers (i.e., principals), and school-based management committees were trained in scaffolding literacy approaches.¹¹ The project followed LOI policy, and students were taught and assessed in Lango, the local language. The group that received the intervention (i.e., the treatment group) demonstrated a significant improvement in local language oral literacy (0.20 standard deviations) and written literacy (0.18 standard deviations) (Lucas et al., 2014).

RCTs conducted on programs that have a primary focus on training teachers, but include other supporting components, have also evidenced positive results on students' literacy development. For example, in Rwanda, the Literacy Boost intervention had a control group and two intervention groups for teachers in Grades 1-4: one intervention group featured only teacher training and the second intervention group consisted of teacher training combined with community action activities to provide community-based literacy support. The teacher training aimed to prepare teachers to teach multilingual learners through sessions that provided teachers with the tools and skills necessary to address the diverse needs of learners. The program also addressed the teachers' limited proficiency in the LOI. The teacher training further provided strategies to allow teachers to draw upon the local context when developing teaching and learning materials. Teachers in the combined teacher training and community action intervention group performed better than the control group. In comparison, the group that received only the teacher training component performed better than the control group in oral comprehension, reading comprehension, and reading fluency assessments (Friedlander & Goldenberg, 2016). Thus, while the community action activities may have contributed to even better results, the teacher training alone also led to improved learning.

¹⁰ In both countries the effect size was at least 0.4.

¹¹ The Aga Khan Foundation was in charge of the implementation of the training.

A study on the Primary Math and Reading (PRIMR) initiative in Kenya (Piper et al., 2015) evaluated student literacy outcomes in relation to teacher training. The program was carried out over two years and collected data from a treatment and control group at three different time periods. The treatment group implemented a targeted literacy and numeracy instructional program that included student books, teachers' guides, ongoing teacher professional development, and supervision. It aimed to improve teacher practices for literacy acquisition by expanding teacher practices beyond using whole-class oral repetition as their primary pedagogical approach, and towards research-supported strategies to improve bilingual literacy acquisition. It included 150 structured lessons in Kiswahili and English. A few key elements of the trainings were that: 1) trainings allowed time for teachers to practice implementing what they learned, and 2) tutors and instructional coaches, responsible for supporting teachers in clusters of schools, were employed and received 15 days of training to ensure that they would be capable of guiding teachers as they implemented the program. The intervention demonstrated positive outcomes for students in several literacy skills: letter sound identification, oral reading fluency, the percentage of students who could read at the benchmark level determined by the Ministry of Education, and reading comprehension.

Research has shown that teacher training can have positive effects on student outcomes in multilingual contexts.

In The Gambia, the Global Partnership for Education supported early literacy in MT instruction through a pilot intervention in 125 schools. The intervention included hands-on teacher training and on-site support for instruction in mother tongue languages (Wolof and Pulaar). Even though on average, only half of the lessons were implemented, students still demonstrated a significant improvement from the baseline in terms of letter recognition in both local languages (Abadzi, 2013). This further underscores the importance of teacher training for improving literacy outcomes in the MT language.

In sum, research has shown that high-quality and relevant in-service teacher education, often with coaching, can have positive effects on student outcomes in multilingual contexts. Furthermore, outcomes from different approaches to training shed light on the most effective approaches (in terms of content, duration, approach, etc.). However, research gaps still exist, especially for large-scale and/or nationwide programs, for linking specific aspects of training to specific student outcomes. Furthermore, formative evaluation research on different approaches to teacher training and coaching can be built into pilot projects and programs to scale up, which can help ensure that the most effective approaches for improving student outcomes are used and adapted to each sociolinguistic context and specific teacher needs. This type of formative evaluation, known as the Collaborating, Learning, and Adapting (CLA) approach, has been used to evaluate the effectiveness of teacher training modules and coaching models during implementation in order to adjust and adapt accordingly, as was done with the Mahay Mamaky Teny project in Madagascar during its pilot and scaling-up phase (Moussa, Cao, & Louge; 2018).

Recommended Curricular Content

As outlined by Benson (2004), an effective bilingual teacher training curriculum should include the following:

- First and second language learning theory
- Modeling of first and second language teaching methods (oral and written)
- Modeling of methods for intercultural instruction
- L2 verbal and literacy skills
- L1 verbal and literacy skills, including pedagogical vocabulary
- Language and program assessment
- Study visits and/or practical internships at functioning bilingual schools
- Collaboration with parents and community members

Recommendations

Several key recommendations can be made based on what is known about the knowledge and skills required for teaching in multilingual contexts, challenges for achieving these skills and knowledge in sub-Saharan Africa, and how teacher training can help improve student outcomes. There are four critical areas that should be addressed: 1) requirements for pre-service teacher education, 2) pre-service teacher education and local languages, 3) in-service teacher education, and 4) the cost of bi/multilingual education.

REQUIREMENTS FOR PRE-SERVICE TEACHER EDUCATION

It is highly recommended that requirements for teaching competencies be included in pre-service requirements. As research revealed (Nordstrum, 2015), many countries have national standards in place that a high proportion of new recruits are meeting. Though the standards and requirements emphasize characteristics and qualifications over competencies, this finding indicates that a growing number of national education departments have been able to establish systems that provide adequate training. Countries with these existing systems could feasibly shift from a primary emphasis on characteristics and qualifications towards highlighting more specific key competencies, which would benefit teacher education.

Teachers need an understanding of literacy acquisition, how to teach literacy skills in the classroom, and how to use assessments to inform instruction. All teachers should be required to take courses in second language acquisition in pre-service and in-service teacher education. Teacher training should prepare teachers to teach word identification using both whole word and phonics methodologies. It should prepare teachers to introduce new vocabulary in the context of reading and writing, and to use a variety of methods to keep the focus on comprehension. This means going beyond reading and answering questions to strategies such as students retelling what they read and dramatizing their understandings of literature (Commeyras & Ketsitlile, 2013).

Additionally, teachers need the ability to use appropriate methods and materials to both teach the second language orally, as a subject in lower primary grades and to teach the language as the means for learning other subjects in the upper primary school curriculum (Adekola, 2007).

Finally, it is crucial to establish staff development programs for colleges of education that address the requirements for training primary school teachers and linking their college work to practice in primary schools (Adekola, 2007).

PRE-SERVICE TEACHER EDUCATION AND LOCAL LANGUAGES

Teacher preparation for teaching in bi/multilingual contexts should be in the local language(s). Greater emphasis should be given to the development of teachers' communication skills in the languages of instruction and in the pedagogies for developing children's language and literacy competencies. Additionally, teacher preparation programs should include methods to develop and use local language reading materials (Akyeampong et al., 2013).

Research has revealed that when pre-service teachers were exposed to using multiple languages to teach during pre-service training, they were better able to accommodate students speaking multiple languages in multilingual classrooms (Chekaraou, 2009). Thus, in contexts where teachers will likely be deployed to classrooms where students speak multiple languages, this approach should be considered.

Similarly, research on teacher preparation in South Africa (Essien, 2010) found that the best practice for preparing pre-service teachers to deal with the challenges of teaching in multilingual contexts is to avoid having separate classes for pre-service teacher classes

PEDAGOGICAL KNOWLEDGE AND SKILLS

Requirements for Pre-Service Teacher Education

- ▶ Emphasize teaching competencies over teaching qualifications.
- ▶ Prepare teachers to teach all literacy components.
- ▶ Prepare teachers to teach math and other subjects in the L1.
- ▶ Establish teaching practicums.

Pre-Service Teacher Education and Local Languages

- ▶ Prepare teachers in the local language(s).
- ▶ For countries with many multilingual schools, prepare teachers in multiple languages.
- ▶ Provide teachers with clear guidance about when to introduce the L2/additional language.
- ▶ Build capacity of teacher education faculty.

In-Service Teacher Education

- ▶ Provide more adequate and aligned in-service training for newly recruited teachers.
- ▶ Link the pre-service teacher preparation with further professional development.
- ▶ Use cluster-based learning in contexts/regions where this is geographically feasible.
- ▶ Provide the same solid foundation in language and literacy acquisition for all teachers.
- ▶ Adopt and adapt successful interventions that complement teacher training to local contexts.
- ▶ Use a CLA approach for the implementation of teacher training interventions.

Costs of Bi/Multilingual Education

- ▶ Increase investment in quality to improve learning outcomes.

separated according to their language background. This could be an effective approach in contexts with numerous schools in which students speak multiple languages.

Teachers should receive clear guidance about when to introduce the second/additional language. A program designed to teach a second language as a subject should not be used to prepare students to learn through this language prematurely. An approach designed to teach an additional language as a subject should not prematurely use this language as the LOI, especially in African settings where for most students the educational second language is a foreign language, should take into account what is known from the study of language and cognition in second language acquisition and psycholinguistics (Oaune & Glanz, 2011).

Finally, there must be capacity building of teacher education faculty, not only in literacy acquisition and instruction, but also in pedagogical knowledge for multilingual settings.

IN-SERVICE TEACHER EDUCATION

More adequate and aligned training is needed for newly recruited teachers, and training must be provided evenly across geographical regions. There are often significant differences in teacher knowledge between rural and urban areas, as was found in Kenya and South Africa, in favor of urban areas (Nordstrum, 2015). Thus, there is a need to assess teacher knowledge according to geographical areas and design approaches to close this regional gap.

It is important to link pre-service teacher preparation with induction processes to certification and further professional development opportunities through short courses on special topics, such as language and learning as well as language and literacy (Adekola, 2007).

Cluster-based learning should be used in contexts/regions where this is feasible geographically. This approach has proven as an effective strategy for supporting teachers in sub-Saharan Africa and other countries (Kim et al., 2016). It is an approach in which teacher educators or experienced teachers serve as mentors for teachers who work in schools clustered in geographic proximity. Also, training should be done in groups and should be in line with current curriculum and textbooks (Piper et al., 2018).

As in the case of Burkina Faso (Lavoie, 2008), teachers in bilingual schools could receive the same basic training as non-bilingual teachers, with some additional training during their summer vacation to address the particularities of local language teaching methods and participatory pedagogy.

It is recommended that successful interventions that complement teacher training be adopted and adapted to local contexts, such as the Literacy Boost initiative in Zambia that complemented teacher training with community action activities to provide community-based literacy support.

Preparing teachers to teach in an L1 and L2 is one essential component of an effective bi/multilingual approach. How this is done during initial preparation and in-service support will vary by context across countries, and in some cases within one country.

Collaborating, Learning, and Adapting (CLA)

It is important to use a CLA approach as part of the implementation process. This formative evaluation should be part of the monitoring and evaluation plan and the implementation plan. Approaches to teacher preparation and support can be tested prior to scaling up in each language and geographical area. For example, teachers can be consulted to know if an in-class coaching strategy is helping them, or if materials meant to guide their practice are easy to understand and effective for helping students learn. Adjustments can be made prior to finalizing products (training guides, in-class support plans, etc.) and expanding to the other geographical areas.



FURTHER RECOMMENDED RESEARCH

PEDAGOGICAL KNOWLEDGE AND SKILLS

- ▶ **Medium and large-scale studies and longitudinal studies.**
- ▶ **Research on preparing teachers for teaching math in multilingual schools.**
- ▶ **Research on the cost of preparing teachers for bi/multilingual teaching.**

COSTS OF BI/MULTILINGUAL EDUCATION

It is important to recognize that local language bi/multilingual instruction

can incur additional costs. However, given that current systems perform poorly, there is a need for increased investment in quality to improve learning outcomes. For example, across the curriculum, teachers are currently required to participate in training to upgrade their skills in language, literacy, subject matter, and pedagogy. In addition to the training requirements already mentioned, their training could be improved by including such topics as the use of information technologies for bi/multilingual teaching methods, basic training in the production and use of classroom materials, and classroom-based action research (Oaune & Glanz, 2011, citing Heugh). The poor performance of current systems would be more costly in the medium- and long-terms compared to the better results achieved through improving the quality of local language, bi/multilingual education (Oaune & Glanz, 2011). In sum, the additional investment to help ensure teachers are equipped to teach effectively outweighs the costs of ineffective teacher preparation for bi/multilingual education.

Further Research

There is a need for more medium- and large-scale studies in sub-Saharan Africa on specific teacher knowledge and skills for multilingual instruction related to student outcomes. Additionally, there is a need for more longitudinal studies. As mentioned, studies were often small scale and constrained to environments that were not reflective of the complex language environments in sub-Saharan Africa (Piper et al., 2018).

More research is needed on how pre-service teachers are prepared at universities to deal with the complexity of teaching multilingual mathematics learners whose first language is not the LOI. This includes investigating what teacher educators consider best practices for teaching to multilingual learners (Essien, 2014).

If cost is a factor influencing the upgrading of teacher preparation (pre-service and/or in-service), studies assessing the cost should be carried out, in addition to an analysis of the predicted costs that would be incurred if necessary quality improvement investments were not made. Given that investment in new teacher education programs is necessary to implement new curriculum, including requirements for bilingual pedagogy and language acquisition are unlikely to incur additional costs at this inception stage. Once the programs have been designed and piloted, their maintenance becomes part of normal, recurrent costs (Oaune & Glanz, 2011, citing Vawda & Patrinos, 1999 and Grin, 2005).

In sum, research has shown that teacher training can have positive effects on student outcomes in multilingual contexts. Furthermore, outcomes from different approaches to training shed light on the most effective approaches (in terms of content, duration, approach, etc.). However, research gaps still exist, especially for large-scale and/or nationwide programs for bi/multilingual instruction as well as for linking specific aspects of training to defined student outcomes. In cases where cost is a deterrent to improving teacher education programs, cost research (including cost-benefit analysis) would be useful.

IV. Teachers' Attitudes and Beliefs Towards Local Language Instruction

While there have been studies that examine the necessary conditions for effective bilingual instruction in multilingual contexts (Pflepsen et al., 2015; RTI, 2016; Varly, 2010), what is often missing from the research literature is the understanding that teachers must not only be capable of teaching in the local language but they must also have the willingness to do so. There is a lack of causal research on the relationship between teachers' attitudes and beliefs about local language instruction and student learning outcomes, however there is research literature on teachers' attitudes and beliefs towards teaching in a local language and how it influences teaching practices and language policy implementation. This section examines this research literature. The first sub-section discusses the findings on teacher attitudes and beliefs towards local language instruction, including teacher use of the local language as well as reasons for teacher acceptance or resistance to using it. Secondly, some of the common explanations for LOI preferences are examined. Finally, recommendations are provided to meet challenges related to attitudes and beliefs regarding local language and the LOI, followed by recommendations for further research.

Teachers' Attitudes and Beliefs Towards Local Language Instruction

- What is known about teacher attitudes and beliefs towards local language instruction?
- What are common explanations for LOI preferences?

Findings on Teacher Attitudes and Beliefs Towards Local Language Instruction

Studies have demonstrated that, even when the official policy promotes using a local language for instruction in the early years of schooling, teachers frequently do not implement this policy (Lucas et al. 2014; Davis & Agbenyega, 2012; Awedoba, 2009; Jones & Barkhuizen, 2011). While limited implementation is often due to a lack of capacity (as discussed in Section Two), it may also be caused by a preference for using an ex-colonial or regional language instead of a local language (Davis & Agbenyega, 2012; Lucas et al., 2014; Ejieh 2004; Igboanusi, 2008). Implementation of language policy is highly localized and greatly depends on community values and beliefs (Trudell, 2007).

Reasons for unwillingness to carry out local language instruction vary on a country-to-country basis and stem from historical language policies and outcomes, the political and cultural context, socioeconomic relations, and other factors. Current attitudes of a country's population towards local language instruction can determine LOI policies (Igboanusi, 2008). Thus, it is important to understand how teachers in different contexts perceive local languages, as well as how they perceive their use for formal instruction. Furthermore, the success of local language bi/multilingual initiatives depends on the attitudes and behaviors of parents and communities (Ball, 2010). In sum, understanding the factors that influence teachers' attitudes and beliefs will help inform language policy planning and implementation to ensure that it is realistic and congruent with teachers' and other stakeholders' goals and preferences regarding the LOI.

Findings are mixed regarding teachers' attitudes concerning local language instruction. Some studies found that teachers prefer a combination of local language and the ex-colonial language for the LOI, including in Nigeria (Igboanusi, 2008) and Ghana (Seidu, 2008). Studies also revealed a mixture of teachers' perception towards local language instruction, such as in the case of Kenya (Jones & Barkhuizen, 2011), Mali (Bender, Dutcher, Klaus, Shore, & Tesar, 2005) and Timor Leste (Caffery, Coronado, & Hodge, 2014). Few countries studied evidenced teachers strongly preferring local language instruction, with the notable exceptions of Rwanda (Nkubito & Uwababyeyi, 2017) and South Sudan (Laguarda et al., 2013).¹² Table 5 provides a summary of research findings on attitudes towards local language instruction across countries in the region.

A study on LOI in Malawi (Mtenje, 2013) cited a survey from 1997-1998 showing that stakeholders were supportive of multilingual education, with the caveat that English acquisition was not compromised. In other countries much more resistance to local language instruction was found, such as in South Africa (Wildsmith-Cromarty, 2009; Chitera, 2010 Probyn, 2009; Setati, 2008; Alexander, 2001; Broom, 2004; Cummins, 2015; Bamgbose, 2004), in Ethiopia (Woldermariam, 2007), as well as in certain regions of Ghana (Awedoba, 2009). In some cases, mixed and shifting attitudes towards using a local language as the LOI have been found, such as in Kenya (Jones & Barkhuizen, 2011), Mali (Bender et al., 2005) and Timor Leste (Caffery et al., 2014).

¹² Though attitudes towards local language instruction may be favorable in South Sudan, the lack of necessary conditions for its implementation result in low levels of actual practice in the classroom.

Regardless of the mixed findings regarding attitudes towards local languages, evidence exists that there are teachers across sub-Saharan Africa who are using local language instruction at the lower primary level (Chitera, 2010; Setati, 2005; Desai, 2016; Brock-Utne, 2012a; McGlynn & Martin, 2009; Laguarda et al., 2013). In some cases, this may be because of specific interventions that support local language instruction. For example, attitudes towards local language instruction were favorable following an intervention that included raising awareness about the policy and value of local language instruction (Jones & Barkuizen, 2011; Seidu et al., 2008). In a study examining LOI policy and implementation in 45 African countries, Bamgbose (2004) concluded that African languages were typically only found to be the LOI in pilot projects, yet that when governments encourage instruction in the local languages, they tend to be used more as the LOI. Additionally, he found a correlation between the use of African languages as the LOI and ex-colonial language policies that permit or encourage the teaching of African languages.

It is important to note that in some cases, even if teachers are aware of the benefits of children learning in their MT, the political and socio-economic forces that compel them to use the ex-colonial language may be greater. The country context and the history of colonization have much to do with present day beliefs and attitudes regarding local, regional, and ex-colonial languages and their roles in formal education.

Some researchers argue that those with decision-making power perpetuate the hegemony of the ex-colonial language. For example, Brock-Utne argues that the belief that “using English” as the LOI is the best way to learn English is promoted by those who have a stake in it, such as donors, the former colonial powers, the publishing industry in the West,¹³ and the African elite. It has also been argued that the use of English as the LOI leads to an increased dependency on Western powers (Altinyelken, Moorcroft, & van der Draai, 2014).

Teachers themselves are confronted with the dilemma of using their students' MT for instruction or the ex-colonial language. For example, teachers may want to help the students learn by using the local language, but believe that they should be teaching in the ex-colonial language to help ensure their students are proficient in that language, which is needed to access higher education (Chitera, 2010). Dilemmas may also be based on ideological reasons, as illustrated by a teacher in South Africa:

If she encouraged the use of English as the language of learning and teaching mathematics and as the legitimate language of interaction in her multilingual class, she would be perpetuating the hegemony of English. If, on the other hand, she did not provide access to English and used only the learners' home language, she would be seen as perpetuating the marginalization of the learners in a world that continues to recognize the value and importance of English (Setati, 2005, p. 462).

The research literature points to various reasons for teachers' preference for and use of the ex-colonial or regional language over local languages for instruction. There are ideological, political, and practical explanations for this that are often overlapping and contradictory. This will be addressed in the next section. Furthermore, the preference for using the ex-colonial/ regional language over a local language for instruction is not exclusive to teachers. These

¹³ Example given by the author is International Association for the Evaluation of Educational Achievement (IEA).

Table 5. Research Findings on Attitudes Towards Local Language Instruction

Country	Author (year)	Teacher favorability to local language as the LOI	Other stakeholder favorability to LOI	Stakeholders
Burkina Faso	Lavoie (2008)	Mixed/High/Low ^a	Mixed	Society
Cameroon	Esch (2012)	Very low	Low	Parents
	Trudell (2007)	Not discussed	Medium	Parents
Ethiopia	Trudell (2016)	Not discussed	Very low	Parents
	Woldemariam (2007)	Low	Very low	Parents, community members, learners
Ghana	Awedoba (2009)	Low	Very low	Parents and community members
	Davis & Agbenyega (2012)	Not discussed	Low	Headteachers
	Erling et al. (2017)	Mixed/Low	Very low	Education officials, parents, society
	Seidu et al. (2008)	High/Mixed	High/Mixed	Education officials, headteachers
Kenya	Akyeampong et al. (2012)	Not discussed	Low	Pre-service teacher education
	Jones (2012)	Very low	Very low	Pre-service teacher education, other education system stakeholders
	Jones & Barkhuizen (2011)	Low	Low	Government (via financial expenditures), Ministry of Education (via examinations, education officers), parents, pre-service teacher education
	Lucas et al. (2014)	Low	Very low	School management
	Piper et al. (2018)	Low ^b	Low ^c	Community
Malawi	Chitera (2010)	Not discussed	Low	Parents, society
	Mtenje (2013)	Not discussed	Mixed	Community members and society
Mali	Akyeampong et al. (2012)	Not discussed	Low	Pre-service teacher education
	Trudell (2007)	Not discussed	Mixed	Parents and community members

Nigeria	Ejeh (2004)	Very low	Very low	Parents
	Igboanusi (2008)	Very low	Very low	Parents and society
	Trudell (2007)	Not discussed	Low	Parents
Senegal	Akyeampong et al. (2012)	Not discussed	Low	Pre-service teacher education
South Africa	Alexander (2001)	Not discussed	Very low	Parents, government officials, society
	Broom (2004)	Not discussed	Very low	Parents and society
	Chitera (2010)	Not discussed	Low	Learners
	Cummins (2015)	Low	Very low	Parents, education officials, community members, learners
	Desai (2016)	Low	Low	Parents
	Makalela (2015)	High ^d	Not discussed	N/A
	Probyn (2009)	Very low	Very low	Parents
	Probyn (2015)	Mixed/Medium	Not discussed	Not applicable
	Setati (2005)	Mixed	Low	Society
	Setati (2008)	Very low	Very low	Parents
	Setati & Adler (2000)	Very low	Not discussed	Not applicable
	Wildsmith-Cromarty & Gordon (2009)	Low/Mixed	Low	Society, teacher education, learners
	Tanzania	Akyeampong et al. (2012)	Not discussed	Low
Tanzania (Zanzibar)	Brock-Utne (2012a)	Not discussed	Low	Learners and society
Uganda	Altinyelken et al. (2014)	Mixed	Very low	Parents
	Stranger-Johannessen (2017)	Not discussed	Low	Parents and other
Zambia	Nkolola-Wakumelo (2013)	Low	Low	Parents

a In bilingual schools, teachers used students' LI to facilitate learning, whereas in monolingual schools teachers did not employ any use of local language.

b Authors found low usage of MT in non-language subjects in Kenya from literature review (Piper, Zuilkowski, Kwayumba & Oyanga, 2018).

c Citing the authors' literature review of MT instruction in Kenya, and not the study of the PRIMR + MT intervention (Piper et al., 2018)

d Only the attitudes of pre-service teachers who were part of the translanguaging instruction intervention are discussed (Makalela, 2015).

views are often held by parents, other community members, and members of the elite (who are often in positions of power and decision-making). Thus, other actors can influence the attitudes, beliefs, and practices of teachers regarding local language as the LOI. Teachers are pressured by parents to teach in the ex-colonial/regional language rather than local language (Jones & Barkhuizen, 2011; Trudell, 2007; Setati, 2008) and policy-makers and influencers (elites, politicians, and donors) make decisions and influence the degree to which local language instruction is promoted and enforced (Trudell, 2016; Brock-Utne, 2012a; Chitera, 2010; Probyn, 2009).

Common Explanations for LOI Preferences

The main explanations for teachers preferring the ex-colonial or regional language for instruction over a local language can be broken into the following main categories: 1) the ex-colonial/regional language is considered more prestigious, of higher status, and/or the key to success; 2) the ex-colonial language/regional language is the language for formal schooling and access to higher education; 3) having one language for formal education will unite the nation politically and socially and prevent conflict; 4) teachers have received their education, including teacher preparation, only in the ex-colonial/regional language and lack incentives to learn the local language for LOI; 5) a lack of understanding of the pedagogical rationale and effective approach to L1/L2 literacy development; 6) written materials, including textbooks and curricula, and exams are predominantly in the ex-colonial/regional language rather than local languages; and 7) teachers and other local stakeholders were not part of the decision-making process regarding the language policy and LOI for the region/school.

COLONIAL LANGUAGES: POWER, PRESTIGE, AND THE KEY TO SUCCESS

During colonial rule, colonial languages were used for business, commerce, administration, and education (Ejeh, 2004) as well as a way to marginalize the African population (Lavoie, 2008; Makalela, 2015; Altinyelken et al., 2014; Cummins, 2015). African languages were devalued and even prohibited in formal schooling in a number of countries (Bamgbose, 2004; Lavoie, 2008; Cummins, 2015). Thus, beliefs persist about the ex-colonial language being one of status, power, and prestige (Ejeh, 2004; Nkolola-Wakumelo, 2013; Chitera, 2010). Beliefs also persist that local language instruction will perpetuate the marginalization of African peoples (Erling et al., 2017). Trudell (2016), in a review of language policy and education quality in 21 countries in Eastern and Southern Africa, found that although the great majority of these countries mandate local language instruction through Grade 3, the actual implementation is quite low. She points to various countries that use English as early as Grade 1 including Kenya, Botswana, Burundi, South Sudan, Uganda, and Zimbabwe. This predominant use of English in formal education can be interpreted as stemming from beliefs about the central role of formal education in English as a means to global citizenship. Several studies also point to beliefs about the necessity of English competency for global competitiveness (Trudell, 2016; Probyn, 2009; Awedoba, 2009), and as a method to gain access to elite spaces (Alexander, 2001) and economic power (Davis & Agbenyega, 2012). However, Brock-Utne (2012a) argues that, in fact, by using local language instruction, more of the population will be educated and thus able to contribute to their own country's development. As Alexander (2001) points out, "what has become ever more obvious is

that it is true that no nation has ever thrived or reached great heights of economic and cultural development if the vast majority of its people are compelled to communicate in a second or even a third language" (p. 364).

The status and prestige associated with the colonial languages affects how teachers construct their identities; the use of the official language is linked to their professional identity (Esch, 2012). In a study in Nigeria, 60% of teachers believed that the use of MT would degrade the teaching profession, while at the same time 84% of these teachers believed that using MT for teaching would facilitate student learning and make lessons more interesting for students (Ejeh, 2004).

These tensions and contradictions in beliefs and practices can be seen in conflicting identities of teachers. Setati (2005) discusses the case of a teacher in South Africa who wants people to be proud of their MT and uses it as necessary as the LOI in the classroom, but also recognizes that in the current education system and larger society, English is important for access to educational and socioeconomic opportunities. He states:

That at the emotive level where she is talking as an African she believes the African languages ought to be honored and emphasized. However, when she is talking as an educator or teacher, she thinks English is important and has to be emphasized. Kuki is struggling with the tension between her two identities, as an African and as a teacher (p.459).

In some countries local language instruction has been perceived as a way to reinforce cultural identity (Trudell, 2007; Probyn, 2009; Jones & Barkhuizen, 2011). Trudell (2016) found that language policies that are most thoroughly implemented grow out of a strongly held ideological position about national identity and national future. While this may be positive for increasing local language instruction implementation, it has also been argued that the use of local language instruction should not be valued solely for its role in maintaining cultural ties, but also because it enables learning (Nkolola-Wakumelo, 2013). In other words, the pedagogical value should not be overlooked in the interest of emphasizing the notion of cultural identity, because it must be recognized that MT instruction actually leads to better learning outcomes for the first and second language. As she states:

The value of Zambian languages in the transmission and preservation of culture overlook the educational, political or economic benefits to be attained by the use of Zambian languages. For as long as they continue to be seen only as a means of cultural transmission, decision makers will assume that there is insufficient reason to justify their development and to promote them in the educational and economic sectors (p.139).

In some cases, a balance in beliefs has been found. Stakeholders believe the status of African languages should be valued not just because of the pedagogical value of children learning in a language they understand, but because of the benefits of bi/multilingualism and maintaining ties to one's cultural identity and community (Igboanusi, 2008; Jones, 2012; Stranger-Johannessen, 2017). Thus, these beliefs work together to improve both the status of African languages and the implementation of local language instruction. In other words, if the status of the language changes, there will be more acceptance of using it for

KEY CHALLENGES

LOCAL LANGUAGE INSTRUCTION

- ▶ The ex-colonial/regional language is considered more prestigious, of higher status, and the key to success.
- ▶ The ex-colonial language/regional language is the language for formal schooling and access to higher education.
- ▶ Having one language for formal education will unite the nation politically and socially and prevent conflict.
- ▶ Teachers have received their education, including teacher preparation, only in the ex-colonial/regional language and lack incentives to learn the local language for LOI.
- ▶ A lack of understanding of the pedagogical rationale and effective approach to LI/L2 literacy development.
- ▶ Written materials, including textbooks, and exams are predominantly in the ex-colonial/regional language rather than local languages.
- ▶ Teachers and other local stakeholders were not part of the decision-making process regarding the language policy and LOI for the region/school.

early literacy instruction (Alexander, 2001; Trudell, 2007, 2016; Nkolola-Wakumelo, 2013; Ferguson, 2013).

One of the barriers to elevating the status of African languages in Africa is the low international status of indigenous languages (Trudell, 2007, 2016; Alexander, 2001). As argued by Cummins (2015), though efforts to value all cultures have been made, the affirmation of cultures has not extended to African languages, which results in many students and communities not fully appreciating the educational legitimacy and academic relevance of their home languages. Furthermore, multilingualism is still not considered an intellectual, academic, and social asset (Cummins, 2015).

Some countries have been found to show a strong resistance to the use of local languages for instruction due to beliefs about the countries' low status, as well as fears of the use of local languages leading to social and economic marginalization. For example, the case of Ethiopia illustrates how a strong resistance to local language instruction leads to pressure on teachers to teach in the regional or ex-colonial language. Parents and other community members were unenthusiastic about MT instruction and viewed it as learning their own language (Woldemariam, 2007). They believed that children should learn languages that will help them to get better jobs, and that MT education will limit access to higher education and to high-status languages. Parents preferred to send their children to schools where English or Amharic was the LOI because it was perceived as the language of the elite and that local languages would diminish the value of their children's education and restrict them to their immediate environment. One parent told a teacher that "It is not fair that you teachers teach our children in the local languages while you yourself have made it in Amharic" (Woldemariam, 2007, p. 223). The parents even petitioned in the capital of the zone for Amharic to be the LOI. While this case is not necessarily generalizable to all of Ethiopia, and much less to sub-Saharan African countries in general, it does serve as an example of the extreme resistance to local languages that can exist, and the underlying reasons for this resistance.

THE EX-COLONIAL/REGIONAL LANGUAGE IS THE LANGUAGE FOR FORMAL SCHOOLING

The benefits of students learning in their MT language in the early years is often understood by teachers, as evidenced through survey responses (Ejeh, 2004; Igboanusi, 2008) and/or in teacher practices (Probyn, 2009; Altinyelken et al., 2014). However, there is still a widespread belief among parents and teachers that the ex-colonial language is the language for formal schooling (Jones, 2012; Nkolola-Wakumelo, 2013; Esch, 2012). For example, in the case of Kenya, it was found that education is equated with knowledge of English (Jones & Barkhuizen, 2011). It has been found in some cases that teachers may share this belief, such as in Cameroon where teachers expressed that the home language should be confined to the home and community, while French and English be used in schools (Esch, 2012).

Furthermore, there is the perception that African languages are not "scientific" and not adequate for teaching subject matter (Trudell, 2007; Mtenje, 2013; Wildsmith-Cromarty & Gordon, 2009). There is also the belief that there is not sufficient vocabulary for the local language to be the LOI (Chitera, 2010). For example, it was found that South African teachers believed that the African languages lack adequate terminology for teaching the subjects (Probyn, 2009) and in Ghana teachers believed that science and math cannot be

taught in languages other than English (Awedoba, 2009). Wildsmith-Cromarty & Gordon (2009) cite a teacher interviewed in their study from South Africa, who stated: "science originates from other languages such as Greek or Latin not from African languages" (p. 366). Such beliefs can extend to students, as well. Brock-Utne (2012a) cites an interview with a student in Tanzania who stated that, even though he couldn't understand the lesson in English, he believed that Kiswahili should not be the LOI because English is the language of science, technology, and modernism. However, the argument that English is the language of science is debunked by Norway, China, Finland, and Japan who do not use an international language for science instruction (Brock-Utne, 2012a).

Finally, it has been argued that scientific knowledge is necessary for development, and by using a local language as the LOI, you can include more people in science and hence will develop faster as a nation (Brock-Utne, 2012a).

POLITICAL AND SOCIAL UNIFICATION

In many countries the belief exists that using the ex-colonial or dominant regional language as the LOI will unite the country, and historically LOI policy has been developed and enforced based on this argument, such as in the cases of Ethiopia and Tanzania (Trudell, 2016). The notion of achieving unity by using the ex-colonial language as the LOI persists in countries such as Kenya (Jones, 2012), Ghana (Awedoba, 2009), and others, even if a local language is the official LOI, as is the case in many sub-Saharan African countries.

There are research findings that support this claim across countries, though not necessarily within a country. For example, a report by Prah (2003) investigating six countries (Botswana, Kenya, Mali, Nigeria, South Africa, and Tanzania) found evidence that using a lingua franca as an LOI was in fact not divisive and was instead found to foster an "integrative attitude across ethnic borders" (p. 6).

However, ex-colonial languages have also been used as a tool of power, coercion, and oppression, as in the case of South Africa with both Afrikaans and English (Probyn, 2009; Setati, 2008; Alexander, 2001; Broom, 2004). At the same time, African languages have been used as a means of keeping black Africans oppressed (Setati, 2008; Broom, 2004; Makalela, 2015). This helps to explain why there may be strong resistance to local language use, especially in some countries.

In Zambia, research found that the national government views the discussion of Zambian languages as divisive, and fears that promoting one Zambian language may lead to ethno-linguistic rivalry. This dynamic has influenced some politicians and government officials to advocate for the use of English, as a unifying strategy (Nkolola-Wakumelo, 2013).

In some cases, teachers have expressed their belief that using local languages may lead to a lack of unity and/or be divisive, as found in Ghana (Awedoba, 2009). In Kenya, teachers expressed their beliefs that by using a neutral language (Kiswahili) a preference would not be shown for one ethnicity or language group, which would prevent divisiveness (even though most students spoke Sabaot) (Jones, 2012).

In contrast, in the case of countries in conflict, local language has been seen as a way to maintain unity. For example, Brock-Utne (2012a) argues the importance of Rwanda

maintaining the local language (Kinyarwanda) as the LOI and Kiswahili as a subject, since neighboring countries (Tanzania, Kenya, and Uganda) all speak that language, which would strengthen the East African community.

In sum, there are historical and political forces that influence current beliefs and attitudes about local languages and ex-colonial/regional languages being used as the LOI. These influences and beliefs are complex and vary widely across and within countries.

TEACHER PREPARATION AND EDUCATION ONLY IN ENGLISH/EX-COLONIAL LANGUAGE

Though the lack of teacher capacity to teach in the local languages is discussed in depth in Section II, it is re-visited in this sub-section as it relates to teacher attitudes towards local language instruction.

African languages were devalued and even prohibited in formal schooling in a number of countries.

As mentioned, teachers often do not have the opportunity to develop reading and writing proficiency in a local language, even if it is their home language (Jones & Barkhuizen, 2011; Seidu et al., 2008; Akyeampong et al., 2013; Chitera, 2010; Ouane & Glanz, 2011; Adekola, 2007; Stranger-Johannessen, 2017; Rosekrans et al., 2012; RTI, 2016; Erling et al., 2017). However, it is important to note that even when given the opportunity, teachers may not be inclined to learn the local language. For example, Ejieh (2004) found in his survey research in Nigeria that only 46.32% of the 95 student teacher respondents answered affirmatively to a question as to whether they would undergo any special training for teaching in a local language. There was no follow-up as to why teachers were unwilling to participate in any such special training, but the rest of the research found fairly consistent attitudes towards teaching in the local languages (Ejeh, 2004). Additionally, only 15.78% of the student teachers reported that they would be willing to teach in a local language after leaving the university (Ejeh, 2004).

The unwillingness to learn a local language could be due to various reasons such as the perception of low status of local languages and/or that learning a local language for teaching would negatively impact teachers' professional identity, as discussed above. Teacher hesitance could also be caused by a lack of incentives to learn a local language. For example, in Kenya there are no financial benefits or recognition for learning, or teaching in, a local language (Jones, 2012). Another reason for teachers to have an unfavorable attitude towards learning to teach in a local language may have to do with the fact that the ex-colonial language was utilized both in their schooling and in their teacher preparation (Jones, 2012; Ejeh, 2004; Setati, 2008). In some cases, these teachers had been punished for using a local language when they attended school, which made them feel inferior (Jones, 2012). If teachers

were prepared only in the ex-colonial (and sometimes also regional) language, and are accustomed to teaching in these languages rather than a local language, changing these teaching practices can be very difficult (Jones & Barkhuizen, 2011).

BELIEFS ABOUT PEDAGOGICAL VALUE

A key influence on favorable versus unfavorable attitudes towards local language instruction is knowledge of its pedagogical value. The benefits of bilingualism are often not understood outside of academia (Probyn, 2009). For example, a review team formed jointly by UNESCO and ADEA found that the interconnectedness between language, communication, and effective teaching and learning is generally misunderstood outside expert circles (Brock-Utne, 2012).

In his survey research with Ghanaian teachers, Ejieh (2004) found that only 37.9% of the 95 teacher respondents agreed that MT instruction would enable children to perform well in English in the future. Similarly, Awedoba, (2009) found that student teachers were aware of the LOI policy for MT instruction, but they felt English would serve their students better. The study found that some student teachers and teacher educators were not convinced of the pedagogical benefits of instruction in the MT. He also found that teachers did not appreciate that their students might be able to engage more in the class if the LOI was a familiar language.

There is also a widespread belief that the best way to master English¹⁴ is to have it as the LOI (Brock-Utne, 2012a), and/or that there should be maximum exposure to English from the time of entering school so that it can be learned more quickly (Cummins, 2015; Probyn, 2009; Trudell, 2016). This is based on the commonly held perception that gaining proficiency in English is directly related to the amount of time spent engaging with English (Awedoba, 2009). Ejieh (2004) found that teachers in Ghana believed MT instruction would impede development of English.

Because the early-exit model requires English fluency in Grade 4, there is a concern among teachers that they must ensure that their students are prepared for this transition (Davis & Agbenyega, 2012; Setati & Alder, 2000). An early-exit model that is well-designed and well-implemented (e.g., based on L1/L2 oral and written standards, aligned curriculum, and ongoing professional development and coaching) would lead to sufficient proficiency in the L2 by Grade 4. However, because of the issues in design and implementation of the models in the majority of sub-Saharan Africa, it is understandable that teachers are concerned about their students being sufficiently prepared in the L2. However, if teachers had a solid understanding of bilingual literacy development and the means to conduct it effectively, there would be no need for such a concern.

Another common misperception is the use of code-switching and its role in L1/L2 development. Even though it is not recognized as a valid teaching form in most contexts (Probyn, 2009, 2015; Erling et al., 2017), teachers often employ code-switching between the ex-colonial/regional language and the home language. This occurs at the primary and secondary school levels. Probyn (2015) in her study of eighth grade teachers in South

¹⁴ Though this belief may exist in countries where the ex-colonial language is not English, the research cited in the section is from countries where English is the ex-colonial language.

Africa, found three functions of code-switching by teachers: 1) for constructing and transmitting knowledge, 2) for classroom management, and 3) for interpersonal relations and to humanize the classroom climate. In Kenya, teachers employed code-switching between Kiswahili and Sbaobato to confront tensions arising from the highly heterogeneous linguistic environment and to achieve integration and understanding by all students. (Jones & Barkhuizen, 2011).

Research has evidenced that although teachers employ code-switching, it is often not recognized as such, and teachers sometimes do not acknowledge that they are employing it (Desai, 2016). Sometimes the LI is used in the form of code-switching as a short-term reaction to incomprehension by students, but not as a scaffolding tool to build understanding (Probyn, 2009). In South Africa, code-switching (or even translation) to the home language was viewed as a “necessary evil as opposed to a valid strategy” (Probyn, 2009, p. 222). She notes that teachers believe that by code-switching and using the MT, they are helping students to understand the concept, but “killing their English” (Probyn, 2009, p. 128). This belief in South Africa is not particular to the teachers. Cummin’s research found that code-switching is condemned by Education Department officials, who have the belief that languages should be “bounded” (Cummins, 2015, p. 274). Cummins (2015) also points out that teachers feel guilty about code-switching in the classroom. Code-switching was also discouraged by tutors in the primary classroom in Kenya, Senegal, and Mali (Akyeampong et al., 2013).

Thus, teachers use code-switching because it helps bridge understanding, yet they lack the formal training in how to employ it most effectively and do not see it as a legitimate pedagogical approach. However, research has revealed code-switching to be an effective strategy (Probyn, 2015; Erling et al., 2017; Setati, 2008). Findings from Ghana suggest that judicious and strategic use of teacher code-switching helped enable students to participate actively during lessons (Erling et al., 2017). Research on South African teachers’ use of code-switching concluded that English was used for more procedural discourse (which is the predominant approach in multilingual classrooms), yet Setswana (the MT) was used for conceptual discourse (Setati, 2008). Thus, the use of both languages served important pedagogical functions. Finally, Probyn (2015) argues that code-switching can be an effective pedagogical approach, especially if teachers are trained in effective strategies. As she states: “Though code switching is becoming more unofficially recognized, there is little training that guides teachers towards a coherent and systematic approach to using both languages in the classroom in ways designed to enhance opportunities to learn” (p. 220).

PREVALENCE OF TEXTBOOKS AND TESTING IN THE EX-COLONIAL LANGUAGE OVER LOCAL LANGUAGES

Another reason that teachers are often ambivalent about using the MT of their students (even when supported by official policy) is because of the prevalence of print in English (Trudell, 2007, 2016) as well as communication in English (Alexander, 2001). For example, textbooks and supporting learning materials in English are predominant (Trudell, 2007; Mtenje, 2013; Davis & Agbenyega, 2012; Setati, 2008). In Ghana, findings showed that teachers believed that technical subjects could not be taught in the local language because neither the appropriate terminology nor the textbooks had been developed

(Awedoba, 2009). In South Sudan, reliance on English language textbooks was a barrier to implementation of local language instruction in a pilot program (Laguarda et al., 2013). Similarly, findings from a study on a local language instruction pilot in Nigeria hypothesized that the dearth of relevant (local language) textbooks contributed to negative attitudes towards local language instruction (Ejeh, 2004).

Regarding testing, MT instruction has little instrumental benefit for learners because they will not be examined in that language (Jones, 2012; Trudell, 2007). Stranger-Johannessen (2017) refers to the way language of examination can influence LOI as the “wash-back effect” (p. 17). Researchers argue that testing in English reinforces its importance (Jones & Barkhuizen, 2011, Piper, Zuilkowski, Kwayumba & Oyanga, 2018; Erling et al., 2017). Additionally, changing the examination policy (to include local language testing) can be effective in changing teachers' attitudes towards local language instruction, as was found in Mali (Bender et al., 2005).

PARTICIPATION OF STAKEHOLDERS IN LANGUAGE POLICY PLANNING (INCLUDING LOI CHOICE)

Language policy planning is often done through a top-down approach, with little involvement of stakeholders (Bamgbose 2004; Mtenje, 2013; Nkolola-Wakumelo, 2013) When teachers are left out of the decision-making process regarding LOI (e.g., decisions about the LOI, the implementation process, and policies), they are less likely to be prepared to implement the policy. For example, in the case of Rwanda, the LOI was abruptly changed in 2008 to English for Grade 4 through tertiary (Nkubito & Uwababyeyi, 2017). This sudden policy shift made many teachers uncomfortable; the non-English speaking teachers felt at a disadvantage, and some continued to teach in Kinyarwanda because they did not feel confident teaching in English.

In a study that examined LOI policy in Malawi (Mtenje, 2013), findings revealed that one of the key barriers to successful implementation was the lack of consultation with stakeholders. The fact that a wide variety of stakeholders were not consulted in the planning process affected stakeholder attitudes towards implementing MT instruction. In addition, it led to insufficient information regarding the language reality (such as number of dialects/languages spoken, availability of teachers, and stakeholders' attitudes towards MT instruction).

In Kenya, Jones & Barkhuizen (2011) documented local language planning efforts that targeted the implementation of the MT as a subject, through teacher education, material development, and advocacy. This resulted in teachers experiencing less tension implementing this component of the policy. Erling et al. (2017) stress the importance of stakeholder involvement in language planning to achieve favorable attitudes towards MT instruction:

It is important that, at national, regional and school levels, stakeholders are encouraged and supported to embrace a change of attitude towards the use of language in schools. It is important to enhance the understanding of all stakeholders in education (education officials, head teachers, teachers, parents and students) about the ways in which language can inhibit or promote learning so they support schools to adopt effective practices. It is also important that English only is not used as the language of examinations or as a gatekeeper for jobs or higher education (p.15).

It is not uncommon for language policy planning approaches to be top-down and include very little, if any, participation from those who will be putting policy into practice at all levels. However, as discussed, broad stakeholder involvement leads to more accurate information, greater stakeholder buy-in, and more favorable attitudes towards implementing the changes expected in the new policy.

Recommendations

As stated previously, to successfully implement an LOI policy that favors local language instruction, it is essential that teachers not only have the capacity, means, and conditions to implement the policy, but that they also are willing to do so. The following research-based recommendations for fostering favorable attitudes towards local language instruction do not assume that local language LOI is always the best solution for improving learning outcomes in sub-Saharan Africa. Rather, they are applicable for countries in which a decision has been made to embrace local language instruction.

USING EVIDENCE AND INFORMATION FOR INFORMING LANGUAGE POLICY

Various studies have emphasized the importance of understanding the attitudes of teachers and other stakeholders regarding local language and its role in formal education (Trudell, 2007; Jones, 2012; Mtenje, 2013). Prior to and/or when initiating MT-based education, it is important to assess and understand local beliefs regarding formal education, the official language, and the local language (Trudell, 2007).

RECOMMENDATIONS

LOCAL LANGUAGE INSTRUCTION

Status and Official Recognition of Local Languages and Their Use as the LOI

- ▶ Develop local languages written form.
- ▶ Officially recognize local languages.
- ▶ Officially recognize local language instruction.
- ▶ Give local languages more public visibility.

Ensuring that Teachers are Prepared

- ▶ Generate teacher confidence in the local language(s).
- ▶ Prepare teachers in strategies that bridge the LOI1 and LOI2.

Using Evidence and Information for Informing Language Policy

- ▶ Develop a contextual understanding of attitudes towards local language instruction.

Raising Awareness Through Evidence and Communication

- ▶ Carry out social awareness campaigns on the advantages of MT learning.
- ▶ Promote the value of the local languages.
- ▶ Ensure explicit public communication on language policy and its implementation.
- ▶ Ensure that language policy implementers understand the language policy.
- ▶ Use evidence to build stakeholder support for MT instruction.

Involving Stakeholders

- ▶ Combine government official policy stances with bottom-up implementation.
- ▶ Plan bottom-up stakeholder engagement to implementation local language instruction.
- ▶ Support community-based actions to create conditions for local language instruction.

Conducting a proper language analysis is key for effective planning and implementation of mother tongue instruction. There must be sufficient and accurate information on the contextual language reality, such as the number of languages and dialects spoken, availability of teachers to teach in those languages, and people's attitudes in different geographical locations (Mtenje, 2013).

STATUS AND OFFICIAL RECOGNITION OF LOCAL LANGUAGES AND THEIR USE AS THE LOI

There are various recommendations as to how to raise the status of local languages.

Putting the language into written form and developing a body of literature in the language can raise its prestige, such as the case of Sabaot in Kenya (Jones, 2012). Additionally, the establishment of orthography in local languages can increase prestige (Trudell, 2007), as can the expansion of vocabulary and terms for economic, scientific, and technological concepts that would be useful both for communication and as an educational medium (Broom, 2004).

It is also important that governments take actions that recognize local languages, such as the approval of Sabaot language books by the Ministry of Education in Kenya (Jones, 2012). Official recognition of local languages by the government, including giving them equal status to the ex-colonial language, is also important (Ejeh, 2004) and can help ensure the continuity of language policy during government transitions (Nkolola–Wakumelo, 2013). At a broader government level, equal status can be given to the local languages through job access, as well as through creation of an entry requirement for tertiary education (Nkolola–Wakumelo, 2013). In Mali, a policy that established coursework in an African language subject as a requirement for the completion of a degree in the humanities, signaled a shift in attitudes towards the status of local languages, and further reinforced their importance (Bangbose, 2004).

Governments pronouncing their support of local language instruction has contributed to shifting attitudes towards the status of local languages, as discussed in a review of language policy in 45 countries (Bangbose, 2004). Governments should promote bilingual programs and demonstrate political commitment at the national and local levels (Ball, 2010). In addition to government promotion of the official (local language) policy, community leaders can be instrumental in advocating the policy within their communities, given higher levels of trust at the community level (Awedoba, 2009).

Alexander (2001) provides several recommendations for taking action to give value, visibility, and status to African languages that include: 1) requiring knowledge of an African language for a civil service position, 2) using African languages during public service announcements by government officials and people in positions of power, 3) writing the names of government buildings in African languages, 4) training translators, journalists, and other professionals in African languages, 5) encouraging more documentation of African languages, and 6) creating a private sector economic reward system for knowledge of an African language.

ENSURING THAT TEACHERS ARE PREPARED

When teachers feel equipped to teach in a local language, they are more prone to having a favorable attitude towards implementing the MT as the LOI. Training teachers in the MT can be instrumental to teacher buy-in, as was the case for teachers in Kenya, where negative attitudes towards MT shifted through a five-day training course that focused on Sabaoth literacy, pedagogy, and advocacy (Jones, 2012). Including active and effective teaching methods in the MT can also help to overcome resistance among teachers (Bender et. al., 2005).

It is important to ensure that when training is completed, teachers feel prepared for MT instruction. Sufficient time should be dedicated to the MT in relation to the other LOI(s), as well as to necessary human and financial resources (Jones & Barkhuizen, 2011).

To ensure that teachers are able to provide instruction in the local languages, student teachers should be encouraged to learn how to teach in the MT. Passing a local language mastery exam should be a condition for admission into primary teacher education programs (Ejeh, 2004). Additionally, governments should provide incentives, such as financial benefits and recognition for learning and teaching in a local language (Jones, 2012).

Finally, it is recommended that code-switching be officially recognized as a valid and valuable approach, and that teachers be prepared to use it as effectively as possible for maximizing learning (Trudell, 2015; Probyn, 2015).

RAISING AWARENESS THROUGH EVIDENCE AND COMMUNICATION

The need to raise awareness regarding local language instruction is widely agreed upon, and encompasses the need for advocacy to change stakeholder attitudes (Jones & Barkhuizen, 2011). It also includes using social marketing to shift community perceptions about instruction in local languages, and to explain the advantages of using the MT as the LOI (Abadzi, 2013).

Campaigns can be conducted that encourage critical language awareness and promote the relationship between language and power (Alexander, 2001). Additionally, stakeholders should be made aware of the pedagogical advantage of using students' MT to increase comprehension in the classroom, which can be done via community-wide events and parent-teacher meetings (Jones, 2012).

It is important to challenge the view that MT education serves only as a bridge to English (Igbaonusi, 2008). Stakeholders should be made aware of other reasons that MT instruction can be advantageous, including that students will more easily pass the local language on to the next generation (Jones, 2012). However beyond merely preserving cultural heritage, it should be shown that local languages are a vehicle for educational, technological, and economic advancement (Nkolola-Wakumelo, 2013).

Raising awareness of the benefits of MT instruction in early childhood programs and the early years of primary school is also recommended, as it allows for the demonstration of success among early adopters (Ball, 2010). Based on the case of Malawi, Mtenje (2013) recommends explaining the value of instruction in the MT, and illustrating that multilingual education does not come at the expense of learning English. Mtenje also emphasizes the importance of keeping the public informed and up-to-date regarding MT instruction.

Clearly communicating policy details is also very important. For example, in Kenya the policy did not specify which language should be taught during local language subject classes (Jones & Barkhuizen, 2011). It is critical to be explicit about how to implement the LOI policy to avoid misinterpretation at the local level (Nkolola-Wakumelo, 2013).

Based on the experience in Ghana, Seidu et al. (2008) recommend ensuring that teachers, head teachers, circuit supervisors, and district directors of education are informed about the LOI policy, which may lead to changing attitudes. They also recommend that LOI policies be implemented as a national program (rather than a pilot) to raise public awareness and gain community support for LOI policy. However, bilingual pilot programs that have the support of parents can lead to government adoption of bilingual education, such as in the case of Mozambique (Trudell, 2016).

Finally, Piper et al. (2018) point out that in order to build community support for MT instruction, it is imperative to show that this will not impede student learning in other subjects that are considered critical to student success. The authors cite a study in which no additive effect of the MT intervention on learning outcomes in other subjects was found, and that for literacy there was no additional benefit for being in a MT program in terms of the second and third language outcomes (Piper et al., 2018). Thus, while raising awareness about the importance of MT instruction is important for fostering favorable attitudes, evidence should be used as part of the awareness-boosting efforts.

INVOLVING STAKEHOLDERS

Several researchers and scholars argue for official top-down policy as a way of encouraging the population to embrace local language proficiency and use. However, top-down policy does not necessarily necessitate top-down implementation. Rather, what is needed from a systems perspective for successful implementation of local language instruction policy, is a commitment from the Ministry of Education to implement LOI policy in all schools (Igbaonusi, 2008). This can be done in tandem with bottom-up approaches at the community level, which has been effective for language planning (Jones, 2012; Sherris, 2017).

Understanding the role of all education stakeholders and their influence on the success of LOI policy implementation is key (Awedoba, 2009). Language planning should include a bottom-up approach with substantial involvement of local stakeholders (Mtenje, 2013; Nkolola-Wakumelo, 2013; Sherris, 2017). It should include consensus-building and awareness campaigns among teachers, parents, and NGOs (Benson, 2004).

Furthermore, language planning should avoid including only languages promoted by a few groups. Formal criteria for LOI selection should be created with stakeholder buy-in to minimize resistance and politicization (Nkolola-Wakumelo, 2013).

Because stakeholders are directly tied to implementation, it is recommended that they be included in the process of fact-gathering and putting the policy into practice (Jones & Barkhuizen, 2011). Community members can be included in the process of investigating the best learning language for their children. Involving community members in the creation of local language materials (e.g. books), and in pilot programs that support local language instruction, has also proven effective at fostering favorable attitudes towards local language instruction (Ball, 2010; Trudell, 2007). There are examples of community members helping



FURTHER RECOMMENDED RESEARCH

LOCAL LANGUAGE INSTRUCTION

- ▶ Case study research on attitudes towards local language instruction and language policy implementation
- ▶ Research on teacher attitudes towards local language instruction
- ▶ Case study research on teacher attitudes and LOI in conflict and crisis countries

to create books in the local language, such as the cases of Kenya (Trudell, 2016) and Ghana (Sherris, 2017). Local language literacy classes for adults have also demonstrated effectiveness in changing adult and community attitudes (Bender et al., 2005).

In sum, attitudes can influence the success or failure of the implementation of language planning strategies. Thus, changing attitudes must be part of language planning (Jones, 2012) as well as policy design (Broom, 2004). Efforts should be made on behalf of the government and other entities to raise the status of local languages and to create incentives for learning and teaching in those languages. Requirements can be established to foster positive attitudes for implementation of local language policies, such as pre-service teacher education requirements for a local language, as discussed. Understanding the beliefs and attitudes towards local languages and local language instruction is key to taking action to shift beliefs. Finally, involving stakeholders in language policy planning and implementation is essential for fostering positive attitudes towards using local languages as the LOI.

Further Research

In the review of 45 articles that discussed teacher attitudes and beliefs towards local language instruction, not a single study was found on the direct relationship between teacher attitudes towards local language and student learning outcomes. Given the extensive volume of documents on teacher attitudes and beliefs, as well as the body of research on student learning outcomes, the absence of documentation of the relationship was surprising. There is a great need for research that explores this relationship between teacher attitudes and beliefs towards local languages and local language LOI, and the resulting effect on student outcomes. This can be done through classroom observation with careful documentation of how language is used.

Despite the lack of research on the relationship between teacher attitudes and student outcomes, some light inferences can be made. It is known that more favorable teacher attitudes towards local language instruction can lead to improved implementation, and that effective local language instruction leads to better student outcomes. Yet, it would be presumptuous to draw a causal relationship because, as identified, despite favorable attitudes towards local language instruction, there can be other barriers to implementation. In cases where positive attitudes towards local language instruction are prevalent, it would be beneficial to conduct more research to identify the other key barriers to implementation and how can they be addressed on a country-by-country and localized basis.

Additionally, there were a limited number of studies that discussed effective methods for changing teacher attitudes and beliefs. Many studies offered recommendations for hypothesized strategies for changing attitudes and beliefs, but few offered any concrete evidence of their efficacy. Conducting RCTs, longitudinal research, and/or other types of research on interventions aimed at changing teacher (and other stakeholder) beliefs would be beneficial for establishing evidence on effective strategies.

Finally, as discussed earlier in the section, one study (Ejeh, 2004) found that only 43.6% of student teacher respondents were willing to undergo any special training for teaching in a MT. Further research is recommended to better understand the degree of teacher willingness to participate in training; specifically, in terms of types of trainings that teachers would be receptive to, reasons for willingness or resistance, and the types of incentives and support that teachers would need. A cost analysis is necessary to strengthen understanding of this issue, and should take into account similar donor- or government-supported interventions.

Research on teacher attitudes and LOI should be conducted in the context of conflict and crisis countries, or countries which have experienced conflict and crisis in their recent history. Based on the cases of Sudan and Rwanda, where the research revealed positive teacher and stakeholder attitudes towards local language instruction, such studies may reveal interesting implications for supporting multilingual instruction in such contexts.

Finally, research is needed on unifying lingua francas and how regional African languages can fill a need for cross-border and/or internal unification between different local language linguistic groups.

V. Conclusion

While some progress in early grade reading outcomes has been made across sub-Saharan Africa in recent years, many challenges remain that need addressing to meet national and international education goals. A better understanding of the role of teachers and the LOI in the development of early grade literacy skills is increasingly seen as key to improving learning outcomes. Many countries have established official policies related to MT instruction and bi/multilingual education, providing the opportunity for children to learn in their MT. This is a promising trend, given the research findings on language acquisition in the early years, and the importance of children developing literacy skills in their MT prior to literacy skills in a second/additional language. However, successful implementation of these policies presents additional challenges, and requires that teachers are equipped to teach in multilingual settings and that effective support systems are established.

The status of local languages in relation to regional and ex-colonial languages varies greatly across sub-Saharan African countries. The status of local languages within a country influences language policy decisions, the degree of implementation of local language instruction, and the level of importance placed on fostering the use of local languages as the LOI as well as in society as a whole. Efforts to support MT instruction must take into account each local context and develop an understanding of the attitudes and beliefs of stakeholders at all levels regarding local languages and their use as the LOI. This includes understanding the particular historical and political factors that may influence beliefs at a country level. Understanding the teachers' attitudes and beliefs (including influencing factors) is particularly important for planning and implementing MT-based bi/multilingual education, or strengthening early grade reading instruction in another language if it is not feasible to implement the MT as the LOI. Feasibility refers to both the existing conditions to implement MT instruction effectively as well as the will of the government and local stakeholders to embrace it.

For bi/multilingual education to be effective, the particular context of and within each country must be taken into account in each stage of planning and implementation. When possible, a CLA approach should be used in the planning, implementation, and monitoring and evaluation of MT bi/multilingual education initiatives (e.g., pilot programs, projects, and national scale programs). This will help ensure that each key aspect of the initiative, such as training approaches and LOI languages, can be evaluated and adapted during implementation and prior to major scaling-up efforts.

Accurate and up-to-date information is needed for effective language policy planning, programming, and implementation.

For countries that have embraced MT bi/multilingual education, it is crucial to examine mismatches that exist between teachers' language and literacy skills, students' mother tongue language(s), and the designated LOI of the school. Though efforts have been made to examine these mismatches—including through language mapping—comprehensive, accurate, and up-to-date information is needed for effective language policy planning, programming, and implementation. Countries that currently have limited opportunities for teachers to develop and sustain their local language skills can establish systems, training, and requirements to expand these opportunities. In developing more robust systems, learning from countries that have engaged in similar processes would be especially beneficial. Likewise, to ensure that teachers have the pedagogical knowledge necessary to teach in bi/multilingual classrooms, governments designing pre-service and in-service teacher education programs can learn from countries that have enacted adequate requirements and rigorous training approaches, and can also draw on research recommendations. Research on multilingual practices, such as code-switching and translanguaging, should be taken into account to inform pre- and in-service teacher education.

Finally, though this report includes a summary of the degree of implementation of LOI policy across sub-Saharan Africa, context-specific research is recommended for countries aiming to bolster or sustain their efforts to implement MT bi/multilingual education. Identifying gaps between planning and implementation will help to improve the effectiveness of early grade literacy development in multilingual contexts.

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Annex I: List of Search Terms

Search engine	Search terms used ^a	Number of relevant articles retrieved ^b	Number of non-repeated articles retrieved ^c
Language of Instruction			
ERIC	Mother tongue instruction Teachers Native language instruction* African languages* Pilot projects* Negative attitudes* Student teachers* Student teacher attitudes* Language of instruction*	4	4
ERIC	Bilingual education Teachers Africa* Multilingualism* Educational practices* Teaching methods* Classroom techniques* Second language learning*	3	3
ERIC	Local language instruction Teachers Medium of instruction* Native language* Native language instruction*	3	3
ERIC	Primary language instruction Africa* Second language learning* Educational practices*	4	4
ERIC	Teaching in multilingual contexts Teaching methods* Language minorities*	1	1
ERIC	Early grade reading in multilingual contexts	0	0
ERIC	Language of instruction and student outcomes reading achievement* instructional effectiveness*	2	2
African Journals Online (AJOL)	Teachers Language of instruction	1	1
African Journals Online (AJOL)	Early grade reading in multilingual contexts	0	0
African Journals Online (AJOL)	Teaching in multilingual contexts	0	0
African Journals Online (AJOL)	Local language instruction	0	0
African Journals Online (AJOL)	Primary language instruction	0	0

* New search terms added after the search began.

a Unless the word "OR" is used, assume the search was conducted using the function "AND."

b Number of articles retrieved that match the inclusion criteria as outlined in Section IC.

c "Non-repeated articles" refer to relevant articles found that were not already in found by a previous key word search.

Search engine	Search terms used ^a	Number of relevant articles retrieved ^b	Number of non-repeated articles retrieved ^c
African Journals Online (AJOL)	Multilingual education	0	0
African Journals Online (AJOL)	Bilingual education	0	0
African Journals Online (AJOL)	Mother tongue instruction	2	2
USAID Global Reading Network	Language of instruction [Location: Eastern and Southern Africa]	2	2
USAID Global Reading Network	Language of instruction [Location: West and Central Africa]	4	2
UNESCO	Language of instruction Africa*	7	6
World Bank	Language of instruction Teacher	5	4
World Bank	Teacher preparedness	0	0
World Bank	Teacher education Multilingual	4	1
UNICEF	West and Central Africa Local language OR bilingual OR multilingual OR mother tongue	0	0
UNICEF	[Location: West and Central Africa] Language of instruction	0	0
UNICEF	[Location: Eastern and Southern Africa] Local language OR bilingual OR multilingual OR mother tongue	0	0
UNICEF	[Location: Eastern and Southern Africa] Language of instruction	0	0
Knowledge			
ERIC	Teacher education Multilingual OR bilingual OR mother tongue instruction OR local language instruction Language usage*	2	2
ERIC	Teacher preparation Multilingual OR bilingual OR mother tongue instruction OR local language instruction Language usage*	0	0
ERIC	Teacher certification Africa* Language of instruction	1	1
ERIC	Teacher preparation Africa* Language of instruction	3	1
ERIC	Teacher preparation Africa* Early grade reading	1	0

Search engine	Search terms used ^a	Number of relevant articles retrieved ^b	Number of non-repeated articles retrieved ^c
ERIC	Teacher preparedness Africa*	0	0
ERIC	Teachers Multilingual Africa*	21	13
ERIC	Teacher certification Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher certification Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher requirements OR teacher training OR teacher education Africa* Language	2	2
ERIC	Teacher training Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	5	3
ERIC	Teacher requirements Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	1	0
ERIC	Teacher preparedness Conflict* Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher preparation Conflict* Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	2	0
ERIC	Teacher preparation Education in Emergencies* Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	2	0
ERIC	Teachers Africa* Language Conflict*	3	1
ERIC	Teachers Africa* Language of instruction Conflict*	3	0

Search engine	Search terms used ^a	Number of relevant articles retrieved ^b	Number of non-repeated articles retrieved ^c
ERIC	Teachers Africa* Language of instruction Emergencies*	0	0
ERIC	Teacher preparation Gender Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Gender equity in teacher preparedness Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher preparation Africa* Early Grade Reading Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher preparedness Africa* Early Grade Reading Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher education Africa* Early Grade Reading Multilingual OR bilingual OR mother tongue instruction OR local language instruction	2	1
ERIC	Teacher preparedness Africa* Refugee* Language of instruction OR multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher Africa* Refugee* Language of instruction OR multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0
ERIC	Teacher Africa* Displaced* Language of instruction OR Multilingual OR bilingual OR mother tongue instruction OR local language instruction	0	0

Search engine	Search terms used ^a	Number of relevant articles retrieved ^b	Number of non-repeated articles retrieved ^c
African Journals Online (AJOL)	Teacher requirements	0	0
African Journals Online (AJOL)	Teacher certification	0	0
African Journals Online (AJOL)	Teacher preparedness	0	0
African Journals Online (AJOL)	Teacher education Language of instruction	1	1
African Journals Online (AJOL)	Teacher preparation	2	2
Skills			
ERIC	Teacher Literacy Assessment Tools Africa* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	1	0
ERIC	Assessments of teacher language and literacy skills Africa* Language of instruction	4	2
ERIC	Teacher preparedness Africa* Primary language OR local language	1	1
ERIC	Africa* Gender equity in teaching skills	1	1
ERIC	Africa* Teacher literacy assessment tools	1	0
ERIC	Teacher effectiveness Africa* Language of instruction	12	5
ERIC	Pre-service training* Teachers Africa* Language of instruction OR local language instruction OR multilingual OR bilingual OR mother tongue instruction	0	0
ERIC	In-service training Teachers Africa* Language of instruction OR local language instruction OR multilingual OR bilingual OR mother tongue instruction	2	1
African Journals Online (AJOL)	Assessments of teacher language and literacy skills	0	0
African Journals Online (AJOL)	In-service training Teacher	0	0
African Journals Online (AJOL)	Teacher effectiveness Language of instruction	0	0
African Journals Online (AJOL)	Student reading outcomes*	0	0
African Journals Online (AJOL)	Student literacy outcomes*	0	0

Search engine	Search terms used ^a	Number of relevant articles retrieved ^b	Number of non-repeated articles retrieved ^c
Attitudes and Beliefs			
ERIC	Teachers Africa* Attitudes* Multilingual OR bilingual OR mother tongue instruction OR local language instruction	17	7
ERIC	Africa* Teachers Beliefs about local language instruction	1	0
ERIC	Africa* Teacher resistance to local language instruction*	0	0
ERIC	Africa* Teachers Social barriers to local language instruction OR political barriers to local language instruction	0	0
African Journals Online (AJOL)	Social barriers to local language instruction OR political barriers to local language instruction	0	0
African Journals Online (AJOL)	Teacher resistance to local language instruction*	0	0
African Journals Online (AJOL)	Beliefs about local language instruction	0	0
Total		131	77

Annex 2: List of Articles Assessed for Inclusion in the Review

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Abadzi, 2013, General, Cambodia, The Gambia	Preparing teachers to implement LI literacy program with multilingual learners	Report	N	Literacy in 100 Days program outline and two case studies: analysis of results from Global Partnerships for Education (GPE) technical assistance intervention pilot in 2 countries: Cambodia (100 schools) and Gambia (125 schools)	RQ2, 3, 4, & 5	Y
Adekola, 2007, Nigeria	Teacher professional development	Report, Situational Analysis	N	Review of existing data, policies and literature, including assessments of learner achievement, and a survey of stakeholder perceptions of classroom performance of new teachers who graduated with Nigerian Certificate of Education	RQ1, 2, 4, & 5	Y
Akyeampong et al., 2013, Ghana Kenya, Mali, Senegal, Tanzania, Uganda	Pre-service teacher education, early primary grades	Empirical, Mixed Methods	Y	Surveys administered to teacher trainees (n = 4699) and newly qualified teachers (NQTs) (n = 1079); classroom observation and interviews with tutors and trainees (4 colleges in each country); classroom observation of NQTs in same area as colleges; analysis of curriculum with teacher preparation	RQ1	Y
Alexander, 2001, South Africa	Languages in South Africa	Literature Review	N	Review of existing literature	RQ3 & 5	Y
Altinyelken et al., 2014, Uganda	Challenges implementing local language policy	Case Study	Y	Literature review, historical analysis, and case study: interviews (n = 34 urban teachers; n = 52 rural teachers; n = 34 key informant interviews) and classroom observations	RQ3	Y
Association for the Development of Education in Africa, 2010, General	LOI policy	Policy Guide	N	Policy recommendations	RQ2, 4, & 5	N
Awedoba, 2009, Ghana	Attitudes of teachers and other stakeholders towards local language instruction	Mixed Methods	N/A	Analysis of interviews with teachers, head teachers, and community members and Grade 2 and 3 student test scores in English and math; scope of study is 6 schools (4 public rural, 1 private urban, and 1 public semi-urban) in the Upper East region of Ghana	RQ3	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Ball, 2004, General	MT-based multilingual education and implementation	Report	N	Review of existing literature	RQ1, 2, 3, 4, & 5	Y
Banda, 2010, South Africa	Teaching and learning practices in multilingual contexts	Literature Review; Case Study	Y	Analysis of existing literature and dataset (interviews/focus groups with 20 teachers in 9 schools in Cape Flats, classroom observations in >6 classrooms)	RQ2	N
Bamgbose, 2004, Multiple (45)	MT policy and implementation	Essay, Literature Review	N	Review of existing literature (policies, interventions, case studies) focusing on how politicalness of policies and this affects their implementation	RQ1 & 3	Y
Bender et al., 2005, General	Challenges to achieving Education for All where LOI is not LI	Report	N	Review of existing literature and policy documents	RQ3 & 5	Y
Benson, 2004, Mozambique & Bolivia	Teacher preparation for bilingual education	Empirical, Theoretical	Y	Analysis of existing data from several studies on teachers' knowledge and practices for bilingual education in 2 countries: Bolivia and Mozambique	RQ2, 4, & 5	Y
Benson & Plüddemann, 2010, Southern Africa	Multilingual education program for teacher educators and policymakers	Mixed Methods	Y	Analysis of ongoing assessment (initial questionnaire, weekly course evaluations, observations, action plans completed by participants, other work completed by participants, discussions, oral feedback etc.) formative and final evaluations, as well as external evaluations of the program during the 4 years (n = 82 course participants)	RQ1, 2, 3, & 5	Y
Bowie & Reed, 2016, South Africa	Teacher preparation and requirements	Literature Review	N/A	Analysis of existing literature and teacher education materials/ curriculum (math and English intermediate phase across 5 universities in South Africa)	RQ2, 4, & 5	N
Breton-Carbonneau et al., 2012, Canada, South Africa	Pedagogical policies and multilingual classroom realities	Literature Review, Theoretical, Qualitative Study	Y	Classroom observations in primary grades (n = 4 teachers in Quebec, Canada; n = 4 teachers in Gauteng, South Africa)	RQ2 & 5	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Brock-Utne, 2010, Namibia, Tanzania, South Africa	Follow-up to implementation of policies to encourage local language instruction	Literature Review	Y	Review and critical analysis of follow-up to policy recommendations to implement multilingual education from 4 studies	RQ5	Y
Brock-Utne, 2012a, Tanzania, Sri Lanka, Malaysia, Rwanda, Ethiopia	English as the language of science and technology	Literature Review, Case Study	Y	Several weeks of classroom observations and conversations with students at a secondary school in Tanzania; Case studies from various countries per secondary research	RQ1 & 3	Y
Brock-Utne, 2012b, Rwanda, Senegal, Tanzania	Use of foreign and ex-colonial language as LOI	Literature Review, Case Study	Y	Review of existing literature, with case study examples from Rwanda, Tanzania and Senegal	RQ3	Y
Broom, 2004, South Africa	Translation of LOI policy to classroom practice and implications for multilingual learners	Literature Review, Quasi-experimental Study	Y	Analysis of students' English reading skills as this relates to their home language (L1) and the LOI (n = 845 Grade 3 learners from 20 schools in 1 district)	RQ2 & 3	Y
Caffrey et al., 2014, Timor-Leste	Efficacy of Mother Tongue-Based Multilingual Education (MTBMLE) for improving pre-school and primary student outcomes	Qualitative evaluation of Pilot Program	Y	Analysis of observations of classroom practices and training participation (teachers participated in a week-long workshop) (n = 7 classrooms across 3 pilot schools in Lautein and Manatutu)	RQ2 & 3	Y
Chinapah et al., 2000, Multiple	Monitoring learner achievement (UNESCO and UNICEF international education assessment initiative)	Report	N	Analysis of literacy, numeracy and life skills test and questionnaires administered to students, parents, teachers and school heads (n = > 30 learners from 1 Grade 4 class in each country: Botswana, Madagascar, Malawi, Mali, Mauritius, Morocco, Niger, Senegal, Tunisia, Uganda, Zambia)	N/A	N
Chitera, 2010, Multiple/General	Teacher preparation for teaching mathematics in multilingual classrooms	Literature Review, Conceptual Study	Y	Analysis of existing literature, language of instruction policy, and teacher education policy	RQ1 & 3	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Chumbow, 2013, General	MT-based multilingual education	Literature Review	N/A	Review of existing literature	RQ5	N
Clegg & Afitska, 2011, General	Teachers' relationship with local language	Literature Review	Y	Review of existing literature	RQ1, 3, & 5	N
Commeyras & Ketsitlile, 2013, Botswana	Literacy instruction in primary schools	Literature Review	Y	Analysis of existing literature and studies	RQ1, 2, & 5	Y
Cummins, 2015, South Africa	Literacy and low socioeconomic status students	Literature Review, Conceptual Study	Y	Analysis of existing literature	RQ3, 4, & 5	Y
Cwi & Hayes, 2011, Namibia	Community-based LI instruction initiative	Pilot Project Report (after 15 years)	Y	Methodology not discussed	RQ1	Y
Davis & Agbenyega, 2012, Ghana	Translation of LOI policy to multilingual classrooms	Theoretical Framework	Y	Qualitative analysis of interviews (n = 10 head teachers in 10 primary schools)	RQ3	Y
Dembélé & Lefoka, 2007, Mali, Zambia, Namibia, Lesotho	Pedagogical renewal and teacher development in Sub-Saharan Africa	Conceptual Study	Y	Review of literature and interventions to support pedagogical renewal	RQ2	Y
Desai, 2016, South Africa	Challenges with English as LOI	Literature Review, Case Study	Y	Analysis of 3 case studies	RQ1, 2, & 4	Y
Du Plessis & Louw, 2008, South Africa	Challenges for pre-school teachers in multilingual classrooms where LOI is English	Literature Review, Mixed Methods	Y	Review of existing literature; questionnaire (n = 32 pre-school teachers in Pretoria and Sunnyside suburb)	RQ2 & 3	N
Ejeh, 2004, Nigeria	Attitudes of teachers towards MT instruction	Program Evaluation	Y	Questionnaire (n = 106 student teachers at a Nigerian college of education)	RQ1, 3, & 5	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Erling et al., 2017, Ghana, India	How education systems support multilingual learners	Report, Case Study	N	Analysis of existing literature and 2 case studies (Greater Accra Region, Ghana and Bihar State, India) whereby authors analyzed interviews (n = 26 participants in Ghana; n = 21 participants in India) and classroom observations (n = 26 lessons observed)	RQ1, 2, 3, & 5	Y
Esch, 2012, Cameroon	Teacher attitudes towards English and French LOI	Case Study	Y	Qualitative analysis of classroom observations and interviews over five weeks (n = 2 schools, 1 English LOI, 1 French LOI)	RQ3	Y
Essien, 2010, South Africa	Pre-service teacher education/ preparation for teaching in multilingual contexts	Case Study	Y	Qualitative analysis from interviews (n = 12 teacher educators from 4 universities)	RQ2 & 5	Y
Essien, 2014, South Africa	Teacher preparedness for teaching mathematics in English to multilingual classrooms	Case Study, Literature Review	Y	Classroom observations of mathematics lessons via video recording (n = 4 teacher educators in 4 pre-service teacher education classrooms in 2 universities)	RQ1, 2, & 5	Y
Ferguson, 2013, General	Policy and MT instruction	Literature Review	N/A	Review of existing literature	RQ3	Y
Fleisch, 2016, South Africa	In-service teacher training and support for literacy (in LOI) and mathematics	Case Study	Y	Analysis of various evaluations and studies on in-service teacher training and support intervention, Gauteng Primary Language and Mathematics Strategy (GPLMS)	RQ2 & 5	N
Friedlander & Goldenberg, 2016, Rwanda	Teacher training and other literacy enhancing activities effect on student reading outcomes	Impact Evaluation	N	RCT with two treatment groups (T1 received Literacy Boost teacher training alone, T2 received teacher training and community action activities) and a control group; data for analysis included student reading assessment results (in 85 schools in Gicumbi), teacher surveys (n = 450 teachers at the baseline), teacher observation (n = 14 control, 14 T1, 14 T2), classroom photographs, literacy ecology survey of the home (n = 25 students' households), literacy ethnography observations	RQ2	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Gove & Wetterberg, 2011, Liberia (Chapter 4), South Africa & Mali (Chapter 3)	Early Grade Reading Assessment for improving student reading outcomes	Evaluation	N	Chapter 4 on Liberia: RCT in 180 schools for Grades 2 and 3	RQ2	N
Hardman et al., 2011, Kenya, Tanzania, Uganda	Pre-service and in-service teacher education	Case Study	Y	Analysis of in-service and pre-service teacher education programs, teacher education policy, self-reporting surveys on teaching practices and preparation (SAQMEC teacher survey results in Kenya, sample size unknown; Tanzania, n = 400; Uganda, no survey data), and analysis of lesson plans (Tanzania only, 300 lesson plans from 8 districts)	RQ2	Y
Hatch et al., 2018, Ghana	Linguistic mapping study	Empirical	N	Covers 100 of the 216 districts in Ghana and 7,105 schools with data from head teachers, teachers, and students	RQ1	Y
Heugh, 2015, South Africa, Australia	Practice and Policy for multilingual instruction	Literature Review, Theoretical	Y	Theoretical analysis of translanguaging and genre theory	RQ3 & 5	N
Heugh et al., 2007, Ethiopia	Teachers' practices, knowledge, and beliefs about LOI	Empirical, Mixed Methods	N	Scope of research includes Addis Abba (city), and Afar, Amhara, Oromiya, SNNPR, Tigray, Gambella, Harari, and Somali regions; study included analysis of documents (including language and education policies), interviews/focus groups, observations, questionnaires, analysis of existing data, participatory workshop feedback, and report-writing	RQ2, 4, & 5	Y
Hovens, 2001, Guinea-Bissau, Niger	Comparison of monolingual and bilingual schools	Empirical	Y	Analysis of student assessment outcomes (n = 1215 students in Guinea-Bissau; n = 1664 students in Niger) and classroom observations (n = 250 lessons)	N/A	N
Igboanusi, 2008, Nigeria	Attitudes of teachers towards MT instruction	Literature Review, Mixed Methods Study	Y	Survey (n = 1,000 education stakeholders including students, teachers, parents, ministry of education officials) in 5 states	RQ3, 4, & 5	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Jantjies & Joy, 2016, South Africa	Teachers' perspectives on mobile technology in multilingual learning contexts	Empirical	Y	Interviews with teachers (n = 8)	RQ2	N
Jones, 2012, Kenya	Language attitudes and LOI policy implementation	Ethnographic study	Y	Document analysis, lesson observation (n = 65), interviews and focus groups with teachers and other stakeholders (n = 50 total interviews)	RQ3	Y
Jones & Barhuizen, 2011, Kenya	Teachers attitudes towards implementing MT LOI policy	Qualitative Study	Y	Classroom observations of 5 teachers with MT in-service training where Saboot (MT) was LOI; informant interviews (n = 42 stakeholders: parents, teachers, education officers, language committee members, etc.	RQ1, 2, & 3	Y
Kerfoot & van Herdeen, 2015, South Africa	Grade 6 students orthography skills in L2	Mixed Methods Program Evaluation, Literature Review	Y	Analysis of pre and post-intervention writing samples from students, pre and post examination scores (national exams), classroom observations, and interviews with teachers (n = 76 Grade 6 students, n = 2 teachers)	RQ2	N
Laguarda & Woodward, 2013, South Sudan	Impact of MT instruction on teaching and learning	Pilot Program Evaluation, Mixed Methods	Y	Classroom observation (including video and photo), assessment of lesson plans, teacher questionnaires; comparison of country-wide exam scores from pilot and non-pilot schools; early literacy assessment (letter recognition) (n = 816 students in pilot; n = 480 students in non-pilot); pilot program took place in Grade 1-3 classrooms in five primary schools in Kajokeji County, Central Equatoria State (n = 9 teachers,); 20 non-pilot schools were studied for the control (n = 23 teachers)	RQ1 & 2	Y
Lavoie, 2008, Burkina Faso	Bilingual instruction	Case Study	Y	Qualitative analysis of classroom observations over 2 months comparing 2 bilingual schools and 1 monolingual school	RQ1, 2, & 3	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Lucas et al., 2014, Uganda, Kenya	Intervention to improve student learning outcomes (reading and math)	Program Evaluation	Y	Randomized Control Trial (RCT) to determine effect of Reading to Learn intervention on student learning outcomes: student assessment (n = 112 schools in Kenya; n = 109 schools in Uganda; n = 13,931 students at baseline); classroom attributes and teacher characteristics at baseline are also considered	RQ1, 2, & 3	Y
Makalela, 2015, South Africa	Efficacy of teacher preparation programs for teaching in African languages	Literature Review, Mixed Methods Study	Y	Analysis of reading and vocabulary scores (pre- and post-intervention test), qualitative interviews [n = 60 (30 experimental, 30 control) pre-service multilingual teachers were exposed to a language course in Sepedi (a "new" language); control group was taught Sepedi in the monolingual style, and the experimental group was taught using translanguaging strategies]	RQ1, 2, 3, & 5	Y
McGlynn & Martin, 2009, The Gambia	Use of code-switching in multilingual sexual health lesson	Literature Review, Case Study	Y	Analysis of classroom observation of 1 Grade 6 lesson on reproductive health, led by teacher trainer/mentor with teacher trainee present	RQ1 & 2	Y
Moore et al., 2012, Mozambique	Early grade reading and ensuring the opportunity to learn	Case Study Research	N	Case studies (5 countries) using quantitative and qualitative data; Mozambique (Case Study): EGRA (n = 631 Grade 3 students), classroom observations (n = 100 Grade 1-3 classrooms), surveys, interviews, etc. across 49 schools among five districts in Cabo Delgado	RQ2, 4, & 5	Y
Mpofu & Nthontho, 2017, South Africa	Teacher disposition during pre-service education	Literature Review	Y	Thematic analysis of 5 journal articles	RQ3	N
Mtenje, 2013, Malawi	Challenges in implementing local language policy	Literature Review	N/A	Review of existing literature	RQ1 & 3	Y
Nel, 2011, South Africa	Teacher preparation for assessment of early grade reading	Qualitative Study	Y	Case study of foundation phase of a teacher preparation program BEd in South Africa; analysis of key documents and observations of lessons for assessment	RQ2	N

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Ngwaru & Opoku-Amankwa, 2010, Ghana, Zimbabwe	Student and parents' perspectives on teaching practices for literacy	Literature Review, Case Studies	Y	Qualitative analysis: observations, interviews, focus group discussions with parents, teachers and students and analyses of documents; 2 Case Studies: Ghana-Primary Grade 4 class, multi-ethnic, Kumasi (Urban) —Zimbabwe—6 families, 25 children, homogenous, (Rural)	RQ3	N
Njoku, 2017, Nigeria	Literacy in English language	Literature Review	Y	Review of existing literature	RQ2	N
Nkolola-Wakumelo, 2013, Zambia	Attitudes towards MT instruction	Literature Review	N/A	Review of existing literature	RQ1 & 3	Y
Nkubito & Uwababyeyi, 2017, Rwanda	Teachers skills for and attitudes towards English as LOI and SBM program to support teachers with transition	Program Evaluation	Y	School-Based Management (SBM) Program intervention with mentors to help teachers adjust to new LOI policy in English-complete with language training qualitative analysis: interviews and focus groups (n = 40 teachers, 5 per school, n = 8 mentors-part of SBM program, 1 per school, n = 8 head teachers, 1 per school), classroom observations (n = 16 classrooms, 2 teachers at each school)	RQ1, 3, & 5	Y
Nordstrum, 2015, Benin, Burkina Faso, Ghana, Kenya, Mali, Mozambique, Niger, Nigeria, South Africa, Uganda, Zambia	Pre-service and in-service teacher education	Conceptual Study	N	Analysis of national/international datasets and national education policies and plans in 9 Sub-Saharan African countries	RQ2, 4, & 5	Y
Ogechi, 2009, Kenya	Teachers' use of languages in multilingual Grade 4 classrooms where LOI mandates English language instruction	Qualitative Study	Y	Qualitative analysis of classroom observations (n = 9 primary Grade 4 mathematics and science classrooms) and writing samples from students in whichever language they felt comfortable writing in; data collected from 3 of the total of 9 primary schools in three Kenyan provinces (Rift Valley, Nyanza, and Western Province)	RQ1	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Opoku-Amankwa, 2009, Ghana	Selective attention to students	Case Study		Analysis of Grade 4 classroom observations in multilingual community in Kumasi, Ghana (n = 60), interviews and focus groups (n = 11 teachers, 2 head teachers, 20 students)	N/A	N
Ouane & Glanz, 2011, Multiple	Theory and practice of local language instruction	Analytical Review	Y	Review of the literature and existing research	RQ1, 2, & 5	Y
Paulson Stone, 2012, Philippines	Teacher professional development for MTBMLE	Mixed Methods	N	Survey (Q sort rankings) and interviews with teachers pre and post MTBMLE professional development program designed and led by researcher (n = 15 teachers, 15 principals; across 10 schools), as well as data collected during 2 training activities	RQ1 & 3	Y
Pflepsen, 2015, Multiple	Language policy and planning	Policy Document	N	Review of research and best practices	N/A	N
Piper, 2014, Kenya	Effectiveness of ICT for student literacy outcomes	Impact Evaluation	Y	Evaluation of the effectiveness of the Kenya PRIMR Initiative in Kisumu County; 3 treatment school zones (n = 20 schools in each group) and 2 control school zones (n = 20 schools in each group)—the 3 treatment groups had different ICT interventions at various levels (teacher direct, student direct, and tutor direct)—assignment of 1 of these treatments was random; intervention included classroom observation as well as literacy assessment (baseline, midterm, and final assessments using EGRA)	N/A	N
Piper et al., 2015, Kenya, Haiti	Bilingual literacy intervention	Program Evaluation	Y	RCT for student literacy outcomes in Kenya (English and Kiswahili) and in Haiti (to assess efficacy of a literacy curriculum in Haitian Creole and French); Interventions included student books, teachers' guides, ongoing teacher professional development, pedagogical coaching, and supervision; Kenya: 574 government and slum schools in peri-urban and rural areas; Haiti: 300 government and private schools in USAID development corridors	RQ2	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Piper et al., 2016, Kenya	Effect of MT instruction on student learning outcomes	Empirical	Y	RCT with control group receiving the regular math and reading intervention, and the treatment group receiving the intervention in the MT (n = 625 students in 82 schools in the control group, n = 920 students in 166 schools in the treatment group); the study took place in Bungoma and Machakos counties	N/A	N
Piper et al., 2018, Kenya	Efficacy of MT literacy intervention	Impact Evaluation	N	RCT of Primary Math and Reading (PRIMR) Initiative for MT literacy instruction: comparison of PRIMR + MT treatment instruction (n = 900 students among 166 schools in 8 zones throughout Bungoma and Machakos counties) with non-MT PRIMR intervention (n = 625 students among 82 schools in 4 zones) that used the same instructional components and a control group; data analysis included assessment of EGRA and EGMA scores, mathematics lesson observations (n = 144) and reading lesson observations (n = 868), and Stallings snapshot observations (n = 11,400)	RQ1, 2, & 3	Y
Potter & Naidoo, 2012, South Africa	ICT support and in-service teacher training	Literature Review, Program Evaluation (Summative)	Y	Analysis of previous evaluations (formative, etc.) of the Open Learning Systems Education Trust's "English in Action" program	N/A	N
Pouzevara et al., 2016, Multiple	Measuring teaching quality	Framework Document	N	Conceptual analysis of existing lesson and observation tools in low- and middle-income countries	RQ1, 2, 4, & 5	Y
Prah, 2003, Multiple/General	History of LOI policy and attitudes	Literature Review, Keynote Address	N	Historical analysis of LOI policy in Africa	RQ3	Y
Prinsloo & Harvey, 2016, South Africa	Assessment of student reading achievement	Impact Evaluation	Y	Analysis of EGRA scores of Grade 1, 4, and 7 learners of English as First Additional Language (EFAL) (n = 1,085 students in intervention 1 in Limpopo, South Africa; n = 4,600 students in intervention 2 in North-West, South Africa)	RQ2	N

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Probyn, 2006, South Africa	Teachers' use of LI to teach science	Empirical	Y	Qualitative analysis of 8th grade science teaching practices (n = 6 teachers in 4 schools)	RQ3 & 5	Y
Probyn, 2009, South Africa	Teachers' use of code-switching in multilingual classrooms	Literature Review	Y	Review of literature and analysis of authors' previous studies	RQ2, 3, 5	Y
Probyn, 2015, South Africa	Teacher's use of bilingual teaching to improve science learning outcomes	Empirical, Literature Review	Y	Qualitative study on bilingual teaching practices by classroom observation (via video recording) and interviews (n = 8 Grade 8 science teachers)	RQ2 & 3	Y
RTI International, 2015, Senegal	LOI in Senegal, and creating an effective bilingual education system	Report	N	Situational analysis	RQ1 & 4	Y
RTI International, 2016a, Ghana	Teachers' LOI capacity	Report	N	Analysis of EGRA/EGMA teacher questionnaire results (n = 671 teachers)	RQ1	Y
RTI International, 2016b, Nigeria	Effectiveness of intervention to improve early grade reading	Program Evaluation	N	RCT: EGRA student assessment in LI, classroom observation, teacher assessment of reading knowledge, skills, and attitudes (n = 120 schools, 1,427 primary Grade 2 students, 120 teachers, 118 head teachers, 43 school supervisors all in the Northern Nigerian Bauchi and Sokoto states)	RQ1, 2, & 3	N
Rosekrans et al., 2012, Ghana	Expansion of MT LOI policy	Literature Review	Y	In-depth review of expansion of MT literacy education in Ghana via the National Literacy Acceleration Program; review of existing literature, policy, 3 MT literacy education initiatives and their influence for NALAP	RQ1 & 5	Y
Seidu et al., 2008, Ghana	Teacher LOI capacity	Empirical, Mixed Methods	N	Surveys administered in 330 schools in 22 districts (n = 22 district directors, 44 circuit supervisors, 330 head teachers, 2,640 teachers), interviews (n = 2,418 teachers, 327 head teachers), and literacy assessments (n = 2,418 teachers)	RQ1 & 3	Y

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Setati, 2005, South Africa	Teaching mathematics to multilingual learners where English is LOI	Literature Review, Case Study	Y	Analysis of 10 mathematics lessons over 2 years and interviews from/ with 1 Grade 4 teacher	RQ1, 2, & 3	Y
Setati, 2008, South Africa	Use of language in multilingual classrooms	Theoretical Framework, Case Studies	Y	Analysis of classroom observations and interviews with teachers and learners; 1st study: n = 6 intermediate phase math teachers who shared languages with their multilingual learners; 2nd study: n = 5 Grade 11 math teachers, teaching in English to students where English was not their home language, L1 or main language	RQ1 & 3	Y
Setati & Adler, 2000, South Africa	Teachers' use of code-switching in mathematics lessons	Literature Review, Case Studies	Y	Analysis of 2 case studies	RQ1, 2, & 3	Y
Sherris, 2017, Ghana	Bottom-up approach to supporting implementation of MT LOI policy	Ethnographic Study	Y	Qualitative study of practices of Safaliba language activists, teachers, and allies in region where Safaliba is widely spoken	RQ2 & 5	Y
Sibanda, 2017, South Africa	Language of assessment and student math achievement	Theoretical Framework, Literature Review, Case Study	Y	Analysis of students in 3 Grade 4 classrooms' (2 schools where teacher professional development intervention occurred) written responses on the ANA (national assessment) mathematics exam (n = 106) and interviews with students	RQ2	N
Spratt et al., 2013, Mali	MT literacy intervention	Impact Evaluation, Mixed Methods	N	Mixed methods evaluation of Read Learn Lead MT literacy intervention with RCT: baseline and endline reading assessments (in 4 national languages) (n = 3,000 students in 75 schools in Grades 1-3 primary over 3 years), differences in approach to data analysis; surveys with school directors and teachers; classroom observations; qualitative case study	RQ5	N

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Stranger-Johannessen, 2017, Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, Tanzania	Key issues in language and literacy	Report	N	Analysis of existing literature and case studies on Ethiopia, Ghana, Kenya, Liberia, Sierra Leone, and Tanzania where the author analyzes studies, policies, curriculum, etc.	RQ1, 4, & 5	Y
Tackie-Oforu et al., 2015, Ghana	Teacher and parent attitudes towards bilingual education	Empirical, Literature Review	Y	Questionnaire administered to teachers and parents (n = 120 teachers and parents) in a suburb of Greater Accra Region	RQ5	N
Tambulukani & Bus, 2012, Zambia	LOI and student reading outcomes	Empirical, Mixed Methods	Y	Multiple regression analysis on L1 and L2 word reading of students in 1st and 2nd grade; interview questions about home and playground language	RQ1	Y
Taylor, 2016, South Africa	Pre-service teacher education	Literature Review, Program Evaluation	Y	Analysis of emerging data from Initial Teacher Education Research Project study; analysis of national data: teachers' scores on national comparative assessments (Southern and Eastern Africa Consortium for Monitoring Educational Quality/SACMEQ) and international student reading scores (Progress in International Reading Literacy Study/PIRLS) PIRLS)	RQ1, 4, & 5	Y
Trudell, 2007, Cameroon, Mali, Kenya	Teacher and community members attitudes towards LI instruction	Literature Review	Y	Analysis of existing studies on attitudes and language and education policies from the 3 countries	RQ3	Y
Trudell, 2016, Multiple	Language policy in Southern and Eastern Africa	Language Policy Review	Y	Analysis of 21 countries language policies and SAQMEC/National Assessment data	RQ2, 3, & 5	Y
Ukwuoma, 2016, Botswana	Use of local language alongside English in storytelling	Mixed Methods	Y	Analysis of surveys, interviews, focus groups, and observations around intervention to incorporate local language in oral storytelling (n = 28 university science students)	N/A	N
UNESCO, 2016 Multiple	Importance of MT instruction for learning and closing achievement gaps	Policy Paper	N	Review of existing literature and data	RQ4 & 5	N

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Vandeyar, 2005, South Africa	Influence of teachers' attitudes on translation of policy to practice	Literature Review, Conceptual Framework	Y	Case studies of 3 Grade 4 primary teachers; classroom observations, interviews, and document analysis	RQ3	N
Vandeyar & Killen, 2007, South Africa	Assessment practices among Grade 4 teachers	Case Studies	Y	Qualitative analysis of assessment practices of 3 Grade 4 teachers via classroom observations, interviews, and document analysis	RQ1 & 2	Y
Van Staden & Howie, 2012, South Africa	Literacy achievement in multilingual contexts	Empirical	Y	Hierarchical linear modeling approach, analyzing multiple input variables on the outcome of reading achievement	N/A	N
Varly, 2010, Mali	Effect of LOI on learning outcomes	Literature Review, Case Study	N	Snapshot classroom observations (n = 77 Grade 2 classrooms in 60 out of 94 schools in Centres d'Appui Pédagogique administrative districts) and students' EGRA scores (n = 1,965 students across 94 schools)	RQ1 & 2	Y
Verspoor, 2008, Multiple	Quality of education and barriers to learning in Sub-Saharan Africa	Literature Review	N/A	Review of existing literature	N/A	N
Westbrook et al., 2013, General	Effective pedagogy, teaching practices and teacher education	Report	N	Review of existing literature	RQ5	N
Wildsmith-Cromarty & Gordon, 2009, South Africa	Use of LI for learning in math and science classrooms	Literature Review, Mixed Methods	Y	Quantitative analysis of baseline questionnaire and qualitative analysis of interviews, workshop recordings (5 workshops to develop a multilingual resource book), lesson observations, constructed narratives of the lessons, and focus group interviews (n = 27 Grades 7-9 math and science teachers)	RQ2, 3, & 5	Y
Wilmot, 2009, Ghana	Assessment of multilingual learners	Qualitative Study, Case Study	Y	Analysis of observations of how students in the study solve mathematical problems, clinical interviews, and home visits (n = 30 primary Grade 1 & 2 students); Case study focuses on 2 students	RQ2	N

Author(s), year, country(ies)	Focus	Study type	Peer-reviewed (Y/N)	Design/methodology	Relevance to research questions	Included (Y/N)
Wilson, 2000, South Africa	In-service teacher training certification program to improve English language instruction in South Africa (PETRA project)	Program Evaluation	Y	Analysis of classroom observations, documents, and interviews (n = 43 teachers)	RQ5	N
Woldemariam, 2007, Ethiopia	Challenges with implementing a MT policy	Qualitative Analysis, Literature Review	Y	Surveys, interviews/focus groups (teachers and parents), classroom observations, and literature review; focus is North Omo region; sample size unknown	RQ 1, 2, 3, and 5	Y

Annex 3: Measurement of Teachers' LOI Skills

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Akyeampong et al., 2013, Ghana, Kenya, Mali, Senegal, Tanzania, Uganda	Y	N	Questionnaire administered to gauge teacher perception of own abilities/preparation to teach in the LOI (which in this case is the LI MT) as well as interviews and classroom observation to triangulate the data	Not given	<ul style="list-style-type: none"> Few teachers in Mali (2%) and Senegal (8%) expressed confidence teaching in the LOI (local language). Majority of teachers in Ghana (79%), Kenya (74%), and Uganda (68%) felt comfortable teaching reading in English only 	Cost-effective; large sample size (n = 4,699 trainees; n = 1,079 newly qualified teachers)	Self-reported information; lack of standardized empirical measurement of fluency or preparation
Adekola, 2007, Nigeria	Y	N	Review of existing data, policies, and literature, including assessments of learner achievement, and a survey of stakeholder perceptions of classroom performance of new teachers who graduated with Nigerian Certificate of Education	N/A	<ul style="list-style-type: none"> Reports on classroom observation reveal that teachers in Grades 4-6 had weak oral communication skills, with difficulty giving lessons in English or Nigerian languages Study on stakeholder perceptions of new teachers who graduated with NCE reported that “just over half the school managers felt [NCE Certificate Graduate] teachers were inadequately prepared to teach effectively in the languages used for medium of instruction, especially in the lower primary grades.” (p 23) 	Offers excellent insight into stakeholder perceptions of teachers' LOI skills; Data is triangulated by classroom observations	Sample size not given; not empirical
Alexander, 2001, South Africa	Y	N	Literature review	Not given	Most teachers expected to teach in English as LOI are not proficient	N/A	N/A

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Cwi & Hays, 2011, Namibia	Y	N	Not discussed	Not given	All 11 teachers in the project possess oral fluency in the L1, but the study does not measure literacy (reading, writing, or comprehension) skills	Provides insight into Namibian context	Small sample size; limited to specific geographic/ ethnically homogenous area (Nyae Nyae Conservancy); assessment methods not discussed
Desai, 2016, South Africa	Y	N	Literature Review & Case Study (Themba Primary School, Khayelitsha, Cape Town): authors' research methods are not discussed in the piece	Not given	Teachers had low proficiency in LOI (English from Grade 4 onward); contrasted with former "white school" called Wood Primary in Rondebosch, where teachers are presumed more likely proficient in English	N/A	Small sample size; limited to geographic area; methodology to measure language skills not discussed
Erling et al., 2017, Ghana	Y	N	Literature Review & Case Study Research on English LOI in Ghana [Greater Accra]: 15 Primary Grades 4-6 classroom lesson observations and interviews with 25 individuals	N/A	<ul style="list-style-type: none"> Authors' research in Greater Accra found that teachers' proficiency in English was high (93%) The literature review found that teachers' English proficiency was low: "A needs analysis carried out by the British Council, Ghana, in 2012 found that 56% of teachers did not consider their English language ability sufficient for teaching, and 26% of head teachers reported that teachers' ability in English was a challenge to the teaching of English." (p 51) 	N/A	Small sample size; non-representative sample; not empirical

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Hatch et al., 2018, Ghana	Y	N	National level sample including 100 districts and 7,105 schools; Administration of questionnaires to head teachers, teachers, and students; Data on the designated LOI for each school; Ranking of match level "high", "medium" and "low"	N/A	<ol style="list-style-type: none"> 1. Language match between student and school LOI: 58% high, 11% medium, and 31% low. 2. 71% of schools have a student population that has more than 2 home languages (only 29% have pupils that share just one home language). 3. 57% of schools have a match between teachers that speak the designated LOI of the school (and 73% have a "high" teacher match, meaning more than 80% of the teachers speak the LOI). 15% have medium teacher language match and 12% have low match. 3% have zero match. 4. Overall match (pupil and teacher share language and these match the school LOI: 46% of schools have high overall match, 41% have medium match, and 13% have low overall match 	Large, representative sample; data triangulated by various stakeholders; mixed methods	Not all stakeholders at each school were able to participate; self-reported data/no formal evaluation

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Heugh et al., 2007, Ethiopia	Y	N	Interviews, focus groups, and questionnaires with education officials, deans and instructors, PTA members and other parents, primary and secondary school directors and department heads, school teachers, practicum (student) teachers and students; classroom observation; analysis of data from the region; document analysis; participatory workshop	Desire for inclusive practices	<ul style="list-style-type: none"> At Grade 5 where English is used, teachers often used Amharic instead because of low proficiency in students' L1. Low teacher proficiency in the L2 (English) (self-reported) 	Mixed methods	Not statistically representative of all regions
Jones & Barhuizen, 2011, Kenya	N	Y	Classroom observations of 5 teachers with MT in-service training where Sabaot (MT) was LOI; informant interviews (n = 42 stakeholders: parents, teachers, education officers, language committee members, etc.)	Not given	Teachers had difficulty writing in LOI (Local language of catchment area, Sabaot) even though they considered themselves proficient in Sabaot	Mixed methods to triangulate the data	Small sample size; non-representative sample; not an empirical assessment of teachers' skills
McGlynn & Martin, 2009, The Gambia	Y	N	Analysis of classroom observation of one Grade 6 lesson on reproductive health, led by teacher trainer/mentor with teacher trainee present	Authors justify focus on one lesson for ability to hone in on significant issues at play in language use	Teacher is proficient in LOI (English) and demonstrates command of Wolof & Mandinka, the L1s for the majority of students	Rich qualitative data	Small sample size

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Nkubito & Uwabayeyi, 2017, Rwanda	Y	N	Qualitative analysis: interviews and focus groups (n = 40 teachers, 5 per school, n = 8 mentors-part of SBM program, 1 per school, n = 8 head teachers, 1 per school), classroom observations (n = 16 classrooms, 2 teachers at each school)	Not given	<p>Teachers in the study expressed that they did not feel proficient in the new LOI (English), though they were proficient in former LOI (MT and French) (this was corroborated by classroom observations which revealed that teachers were not proficient in the new LOI: “teachers were unable to deliver their message in correct English and had to resort to Kinyarwanda, their mother tongue” p 51)</p> <ul style="list-style-type: none"> Many older teachers were concerned that they were not prepared for English as LOI and that it would be too difficult for them to learn Teachers who had studied English did not share the same anxiety with the new English LOI policy Head teachers also expressed concern about teachers’ English proficiency to use it as LOI 	Mixed methods for triangulation of data	Small sample size; teachers’ perceptions are not empirical
Ogechi, 2009, Kenya	Y	Y	Classroom observation (Grade 4 Mathematics and Science lessons where English is the LOI); Geographic scope of the study is 3 of 9 primary schools across three provinces: Rift Valley, Nyanza and Western Province	Rich data from observation	Teachers in rural schools do not possess oral or written proficiency in the LOI (English)	Rich observational data	Small sample size; sample not representative

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Paulson Stone, 2012, Philippines	N	Y	Q sort methodology; semi-structured interviews with structured ranked ordering of preferences/opinions; training for 15 first grade teachers in MTBMLE	Participatory; rich qualitative data	Teachers unable to read and write in the LI	Self-reported	Small sample size/representativeness of sample
RTI International, 2016a, Ghana	Y	N	Analysis of EGRA/EGMA teacher questionnaire results (n = 671 teachers)	Weather-related challenges mentioned only	<p>Teachers unable to read and write in the LI</p> <ul style="list-style-type: none"> Some LOIs had trained, native speaking teachers available (the majority of teachers in Dagaare, Ewe, Kasem, and Nzema schools were native speakers); other LOIs had too few teachers (most notably Ga schools, where 53% of teachers said they had only 'limited working ability' in the language and 20% said they did not speak the LOI at all)." (p 21 -22) "This sometimes results in schools where there is no available teacher who can teach in the LOI, or a 'detached' teacher is brought in specifically for the Ghanaian language portion of the reading lesson." (p 22) 	Large sample size	Not enough detail regarding teachers' deficiencies in skills; self-reported data from questionnaire

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Seidu et al., 2008, Ghana	N	Y	Literacy assessments, interviews, and surveys	Not given	<p>Teacher and head teacher capacity for MT/L1 instruction is low (18.6% for teachers and 32.7% for head teachers); no urban/rural variance</p> <ul style="list-style-type: none"> 62.9% of teachers were partially literate in an L1, 18.4% were not literate in any L1 23.7% of teachers could not read in the L1; 27.7% read with mistakes; 48.6% could read proficiently 22% of teachers had no reading comprehension; 28.5% partial comprehension; 49.5% accurate comprehension 26.9% could not write in the L1; 38.5% could write with mistakes, 34.9% wrote correctly In general, L1 reading skills were stronger than writing skills In only 6 of the schools surveyed there were no (zero) teachers literate in the L1, but in 100 schools there were teachers with very limited fluency in the L1 (teachers with higher fluency were typically assigned to lower grades) 14% of teachers in the study and 23% of head teachers revealed they were not literate in any of the 11 official languages 	Large sample size (literacy assessments: n = 2,418 teachers); mixed methods study; Self-reported data; Good representation (study encompasses 22 districts where all of the 11 national languages are spoken)	Process (rubric) for attributing a score to teachers' performance is not mentioned

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Setati, 2005, South Africa	Y	N	Discourse analysis: study of 1 primary Grade 4 mathematics lesson	Not given	Teacher is fully proficient in LOI (English)	Rich qualitative data	Limited sample size
Taylor, 2016, South Africa	N	Y	Teachers' performance on SAQMEC English Reading Proficiency Exam	Not given	Teachers performance on the exam was low, particularly in the higher reasoning function: "While South African teachers did relatively well on questions requiring the simple retrieval of information explicitly stated in a passage of text (75.1%), scores dropped dramatically as soon as the higher cognitive functions of inference (55.2%), interpretation (36.6%) and evaluation (39.7%) were invoked." (p 19)	Test is widely administered and standardized	Test may not be appropriate to all test-taker contexts
Trudell, 2016, Multiple/ General	N	N	Secondary sources	Not measured by author	English dominates the classroom even though students & teachers have low oral fluency	N/A	N/A
Vandeyar & Killen, 2007, South Africa	Y	N	Study of 3 primary Grade 4 school teachers' conceptions of assessment through classroom observations (math class), interviews, and analysis of key documents	Not given	LOI in all three schools was English and all three teachers studied were proficient in English and Afrikaans. None were proficient in any of the LIs of their students	Mixed methods approach	Small sample size
Varly, 2010, Mali	Y	N	Snapshot classroom observations (n = 77 Grade 2 classrooms in 60 out of 94 schools in Centres d'Appui Pedagogique administrative districts) and students' EGRA scores (n = 1,965 students across 94 schools)	Not given	Enumerators reported low proficiency in LOI (national language) among teachers (finding is supported by another study by the Ministry of Education—teachers are not fully bilingual—and Hewlett Foundation which the author cites)	Large sample size	Snapshot observations capture whether the language was spoken, but does not quantify proficiency

Study (author(s), year, country(ies))	LOI language skills measured (Y/N)	LOI literacy skills measured (Y/N)	Methodology	Rationale for measurement/ limitations acknowledged by author(s)	Study findings/results	Strengths	Limitations
Woldemariam, 2007, Ethiopia	Y	Y	Survey, focus group, interview, and classroom observations	Not given	<p>With the many dialects of Gamo (LI), the teachers did not always have the same dialect background as their students which caused students to have difficulty understanding their teachers; both students and principals reported that teachers incorrectly evaluated student progress because of this.</p> <ul style="list-style-type: none"> Teachers also used taboo words (on accident because of not having sufficient LI proficiency in students' dialect) which caused major class disruptions Students report that teachers have difficulty writing in the MT, and teachers acknowledged this is an issue Teachers could not finish a sentence without switching to Amharic 	Mixed methods approach	Sample not representative; constrained to North Omo region only; sample size not reported