IMPROVING EARLY GRADE READING INSTRUCTION IN GHANA:

A DISCREPANCY GAP ANALYSIS

by

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ABSTRACT

Recent Early Grade Reading Assessments in Ghana have shown extremely low reading proficiency rates in the early grades of primary school and poor teaching quality misaligned with the national literacy curriculum. Applying a gap analysis framework, this case study examined 15 teachers' reading instruction in five primary schools in the Akuapim North district of Ghana. The primary purpose of the case study was to identify the knowledge, motivational, and organizational barriers that are preventing teachers from effectively implementing the national literacy curriculum and to develop context-relevant solutions to address the gaps. Data was collected through surveys, interviews, document analysis, and classroom observations of teachers in kindergarten and first grade. Findings showed that teachers lack factual knowledge and self-efficacy to teach reading skills. Teachers also lack procedural knowledge for implementing child-centered pedagogies and formative assessments. The study confirmed a number of assumed organizational barriers, such as insufficient teacher training, inadequate coaching in the classroom, and limited opportunities for professional engagement with peers. An extensive literature review of proposed solutions indicated that, continuous training of up to 80 hours and consistent coaching in the classroom coupled with professional learning communities that use student achievement data as the basis for instructional planning can have a significant impact on student reading outcomes. Furthermore, the selection and training of coaches is critical to the success of the professional development program. The proposed solutions in Chapter 5 provide concrete strategies for addressing the teacher performance gap. The paper concludes with a detailed implementation plan and an evaluation framework for monitoring the effectiveness of the proposed continuous professional development program.

CHAPTER 1:

INTRODUCTION TO THE PROBLEM

In 2010, the Government of Ghana launched the National Literacy Acceleration Program (NALAP) to address the growing literacy crisis in Ghanaian primary schools. While the NALAP program has made laudable progress in developing teaching and learning materials in the mother tongue and English, it has encountered difficulties with systematic implementation of the NALAP curriculum in the classroom (World Education, 2014). Recent studies in Ghana provide evidence from classroom observations and interviews that there is a high degree of infidelity between teachers' reading instructions and the lessons in the NALAP teacher's guides (Casely-Hayford et al., 2013; Mulcahy-Dunn, Valadez, Cummiskey, Hartwell, 2013). For instance, in 75% of classrooms observed, teachers did not adhere to the timeframes or activities in the teacher's guides, which limited the use of the materials, and lowered the effectiveness of NALAP on student learning outcomes (U.S. Agency for International Development [USAID], 2011; Hartwell, 2010). As a result, the reading crisis persists. The first Early Grade Reading Assessment (USAID/Ghana, 2014) conducted in 2013 found that 51% of children in Grade 2 were unable to read a single word in English or the local language, and only 2% could read fluently with comprehension (Kochetkova & Brombacher, 2014).

Organizational Context and Mission

The Akuapim North district is located in the Eastern Region of Ghana. As of 2006, the population of Akuapim North was 104,753 ("Eastern Akuapim North Demographic Characteristics", 2006). This district was selected for the case study. World Education randomly selected a sample of 10 schools from a total of 120 in the district to participate in the World Education teacher-training project. Among the 10 intervention schools, five were selected for the

dissertation study on the basis that they met the following criteria; poorly resourced, low performing, local in semi-urban or rural areas, and applied to participate in the project.

Organizational Performance Problem

According to the USAID/Ghana Reading Benchmarks for the Akuapim North District, at least 5% of pupils in the Akuapim North district should be reading with fluency and comprehension in the local language and English by the end of second grade (P2). In order to meet this benchmark, P2 students must be reading at least 40 correct words per minute and achieving 80% correct on the reading comprehension test. Results of a 2013 USAID/Ghana Early Grade Reading Assessment conducted in this Akwapan Twi-speaking region found that only 2.5% were achieving the fluency benchmark and 0.9% met the comprehension benchmark. Overall, less than 1% (0.9%) of second grade students could read a story in the local language fluently and with comprehension (Kochetkova & Brombacher, 2014). Over half (64.6%) of the students in this language group could not read at all (USAID/Ghana, 2014). Consequently, while the fluency and comprehension target in the Akuapim North district is 5%, less than 1% of second grade pupils in this district are meeting proficiency benchmarks signaling an achievement gap of 4%. As this gap represents a discrepancy between current reading levels and the benchmark, the discrepancy gap analysis model (Smith & Ragan, 2005) is best suited to frame this problem.

Related Literature

Learning how to read in the early grades is one of the most important foundational skills for educational success, and has long-term social and economic implications (Snow, Burns, & Griffin, 1998). Reading research shows that young children who are able to read fluently (fast enough to retain what is read in working memory) may be able to build on these foundational

skills and understand more complex text even if they drop out of school (Abadzi, 2006). Conversely, learning to read fluently and at a sufficient rate becomes more difficult with age (Gove & Cvelich, 2011). Thus, early acquisition of reading automaticity and fluency could be the key to preventing illiteracy (Abadzi, 2006).

While literacy rates have been increasing globally, the UNESCO Institute for Statistics data center (UNESCO Institute for Statistics, 2013a) reports that 123 million youth worldwide still lack basic reading and writing skills. Nearly 90% of illiterate youth are concentrated in South and West Asia (62 million) and sub-Saharan Africa (48 million) (Huebler & Lu, 2013). Young women account for 64% of illiterate youth in South and West Asia, and 60% of illiterate youth in sub-Saharan Africa (UNESCO Institute for Statistics, 2013b).

Youth illiteracy is particularly widespread in Africa. In sub-Saharan Africa, 40% of young people and 60% of young women are unable to read a sentence (UNESCO Institute of Statistics, 2014). In West Africa, more than 50% of youth are illiterate in eight low-income and lower middle-income countries (UNESCO Institute of Statistics, 2014).

Youth and adult literacy rates in Ghana are currently estimated at 85% and 71%, respectively (UNESCO Institute for Statistics, 2014). However, there are stark regional, gender and socio-economic disparities. For instance, the difference in youth literacy rates between the urban rich and the rural poor in Ghana is more than 50 percentage points (UNESCO, 2014). In terms of gender, Ghanaian women lag behind Ghanaian males at 65.3% compared to 78.3% for men (UNESCO Institute for Statistics, 2014).

Low literacy rates are largely due to the poor quality of education in developing countries. The 2014 UNESCO Education For All (EFA) Global Monitoring Report estimates that 250 million children attending primary school in developing countries are struggling to read even

basic words, even though half of them have spent at least four years in school. This finding is confirmed by results from international Early Grade Reading Assessments that show large numbers of children are failing to achieve basic reading skills necessary to facilitate learning in the higher grades. In Ghana, the first Early Grade Reading Assessment (U.S. Agency for International Development/Ghana, 2014) conducted in 2013 found that 51% of children in second grade were unable to read a single word in English or the local language, and only 2% could read fluently with comprehension (Kochetkova & Brombacher, 2014). In three of the 11 languages tested, none of second grade students could read fluently with comprehension (USAID, 2014).

There are many causal factors for the weak performance of pupils in Ghanaian primary schools. Similar to other African countries, some of these include low teacher quality and teacher training, relative lack of appropriate materials, weak infrastructure, and very low time on task (Etsey et al., 2009; Hartwell, 2010). However, it has also become increasingly recognized that a major factor in low early grade literacy rates in Ghana is "pupils are attempting to learn to read in a language which they do not understand well or speak with fluency" (Hartwell, 2010, p. 1). From 2002 to 2009, the Ghanaian language of instruction policy called for English-only medium classrooms from kindergarten through secondary education. Recognizing the limitation this posed on learning for non-native English speakers and in response to critical debates on the language policy due to the multi-lingual society, the Ghanaian government terminated the long-standing English-only instruction policy in 2010 and introduced a nationwide scale-up of the USAID bilingual pilot project (2006-2009) known as NALAP, the National Literacy Acceleration Program. NALAP was established as a joint initiative between the Ghana Education Service (GES) and United States Agency for International Development

(USAID/Ghana) to provide the education system with technical assistance to properly implement the mother tongue policy. USAID provided locally developed reading materials, teachers' guides and training (USAID/Ghana, 2011).

Under the NALAP policy, mother tongue instruction and English is used in kindergarten through third grade with transition to English as the medium of instruction in fourth grade and beyond in public schools (USAID/Ghana, 2011). Through NALAP, USAID and the GES developed teaching and learning materials in 11 Ghanaian languages, published and distributed over 5 million textbooks, and trained 80,000 teachers (USAID/Ghana, 2011).

Despite NALAP's remarkable progress, it has faced a number of challenges with implementation on a national scale. A NALAP implementation study conducted in August 2010 to assess the effectiveness of NALAP's instructional strategies found that only 15-20% of trained teachers were using the full instructions in the teacher's guide to carry out classroom activities: the majority of teachers used the NALAP materials in traditional ways focusing on pupil repetition of single words and memorization of text. The results of the second NALAP study carried out in April 2011, almost one year after NALAP had begun full implementation in schools, showed that not much progress had been achieved. Classroom observations revealed that two-thirds of the lessons did not adhere very closely to the scripts in the teacher's guide (USAID, 2011). As in the 2010 study, instruction seemed to be based on teaching the content of the story or memorizing key words. There were no instances of instruction on letter sound correspondence or segmenting a word in order to sound out the phonemes (decoding). There was universal agreement among stakeholders interviewed that the five-day training was too short for teachers to master the new methodologies (Hartwell, 2010).

More recent assessments report that little progress has been achieved since the 2011 NALAP formative assessment. A 2013 study on the Quality and Inclusivity of Basic Education across Ghana's three northern regions found that, from 30 classroom observations and interviews across a sample of 86 schools, the bilingual education policy is still not being universally adhered to (Casely-Hayford et al., 2013). The study showed that some schools practiced a "whole school English" policy and punished students for "using the vernacular" (Casely-Hayford et al., 2013, p. 6). Researchers observed that students were taught to memorize the pronunciation and meaning of each word in isolation and therefore "could not read a simple word taken out of the context" (Casely-Hayford et al., 2013, p. 6). Only one teacher was observed discussing reading strategies. In most classes, teachers used few child-centered teaching pedagogies (Casely-Hayford et al., 2013). The general conclusion was that teachers lacked literacy teaching skills and were not utilizing basic reading strategies, such as identifying words through context, whole word decoding, or singing rhymes (Casely-Hayford et al., 2013).

The findings of past NALAP evaluation studies clearly indicate that teachers require more training on the reading skills and child-centered pedagogies, and ongoing support with implementing the new approaches in the classroom.

World Education Early Grade Reading Project

Building on the well-established NALAP materials and methodology, World Education is planning to implement a pilot teacher-training project in the Eastern Region of Ghana to support the government with improving mother tongue instruction in the first grade of primary school. The goal of the project is to provide first grade teachers with the tools, skills and support necessary to successfully implement the NALAP curriculum, and ultimately to improve reading proficiency rates in the early primary grades (World Education, 2014). If implemented

appropriately, P1 classrooms using NALAP curriculum would demonstrate the following indicators of success; sufficient allocation of time to reading (at least 40 minutes per day), the use of instructional approaches and teaching aids suitable to the selected mother tongue language, and systematic instruction and assessment (World Education, 2014).

World Education is a private voluntary organization. The mission of World Education is to bring hope through education to children and adults around the world. World Education has worked in more than 50 countries, and in Ghana for the past 30 years.

Importance of the Problem

At the school level, the consequences of failing to establish early reading skills are striking. Without strategic intervention, longitudinal research has documented that good readers in first grade have an 88% chance of staying good readers in fourth grade, while poor readers in first grade have an 87% probability of remaining poor readers (Edwards, Simmons, & Coyne, 2005). After third grade, when the importance of reading shifts from learning to read to reading to learn, students' trajectories of reading progress become even more stubbornly resistant to change. From third grade onward, students who are in the bottom trajectory almost never become good readers in the top trajectory (Edwards et al., 2005). Children who do not learn to read in the first few grades are more likely to fall behind, repeat, and eventually drop out or graduate without having acquired functional literacy skills (Gove & Wetterberg, 2009; Gove & Cvelich, 2011).

Without basic literacy, children have little chance of escaping the intergenerational cycle of poverty. On a national level, reading and learning achievement are central to economic productivity and growth (Gove & Wetterberg, 2009). Research reveals that a 10% point increase in the share of students reaching basic literacy translates into an annual GDP growth rate of 0.3

percentage points (Hanushek & Woessman, 2009). This is critical for Ghana, as the country has recently achieved lower-middle-income status. Higher rates of illiteracy would impede the country's progress towards higher economic growth and development. At the international level, a 2013 UNESCO report estimates that if all students in low-income countries left school with basic reading skills, 171 million people could be lifted out of poverty.

Organizational Goal

The Akuapim North district's goal is to have at least 5% of P2 students achieving reading fluency and comprehension benchmarks in the Ghanaian language by June 2018 (USAID/Ghana, 2014). The goal is based on the proposed national benchmarks and targets for reading in Ghana (USAID/Ghana, 2014). In order to achieve the fluency and comprehension benchmark, P2 students must be reading at least 40 correct words per minute and achieving 80% correct on the reading comprehension test.

Stakeholders and Stakeholders' Goals

The stakeholders necessary to achieve the goal at the school level include students, teachers, the head teacher, supervisors and the World Education/Ghana project team. Each stakeholder makes a unique contribution to achieving the 2018 goal, which is for at least 5% of P2 pupils in the Akuapim North district to have achieved reading fluency and comprehension benchmarks in the Ghanaian language and English, as measured by the national Early Grade Reading Assessment.

To support the district with achieving this goal, World Education will develop instructional materials in the mother tongue language and will train 100% of teachers and head teachers in effective reading methodologies for early grades by the end of February 2015. By October 2016, 80% of trained teachers in first grade will be teaching reading lessons in

accordance with set standards in the NALAP/World Education teacher's guide, including adhering to the scripted lessons and time (40 min), administering assessment and tracking pupil performance, and using appropriate teaching and learning aids to engage pupils in reading activities. By June 2017, 4% of former P1 pupils, who would have been promoted to P2, will be achieving 80% in reading comprehension (2018 benchmark: 5%). The stakeholders' goals in the context of the district's global goal are presented in Table 1.

Table 1.

Organizational Mission, Global Goal, and Stakeholder Goals

Organizational Mission		
The mission of the Ministry of Education is to provide relevant and quality education for all Ghanaians especially the disadvantaged, to enable them to acquire skills, which will make them functionally literate and productive, to facilitate poverty alleviation and promote the rapid socio-economic growth of the country.		
Organizational Goal		
By 2018, at least 5% of P2 pupils in the Akuapim North district will have achieved reading comprehension benchmarks in the Ghanaian language, as measured by the national Early Grade Reading Assessment.		
World Education	**Teachers**	**Students**
By end of February 2015, World Education will train 100% of teachers and head teachers in effective reading methodologies for early grades and L1.	By August 2015, 80% of trained teachers in first grade will be teaching reading lessons in accordance with set standards in the NALAP/World Education teacher's guide.	By June 2017, 4% of pupils in P2 will be achieving 80% in reading comprehension (2018 benchmark: 5%)

Stakeholder for the Case Study

While the joint efforts of all stakeholders (e.g., World Education, teachers, and students) will be needed to achieve the reading fluency and comprehension benchmarks in the Ghanaian language and English within three years, for practical purposes of this case study, only the teachers were selected for analysis. Kindergarten and first grade reading teachers at five schools participating in the World Education teacher-training pilot project will be the primary stakeholder of analysis. As early primary school teachers are the key drivers of the NALAP education policy, it is important to examine the barriers these teachers face in delivering high quality, child-centered reading classes, and to understand the contextual factors leading to poor reading outcomes from their perspective.

The stakeholder's goal, supported by the Head Teacher and World Education team, is to achieve 100% competency in implementing the NALAP curriculum, including the lessons and assessment units in the teachers' guide, and appropriate use of teaching aids by October 2016. Past evaluations found about 20% of teachers fully adhering to the sequenced methodology in the teacher's guide (Hartwell, 2010; USAID, 2011). Thus, the performance gap is 80%.

Purpose of the Case Study and Project Questions

The purpose of this case study was to examine the root causes of low teacher fidelity to implementation of the NALAP curriculum and to develop context-relevant, evidence-based solutions to address the gaps. Specifically, the case study sought to identify why 80% of teachers do not adhere to the set standards of the NALAP teacher's guide. The set standards were defined as following the reading methods, the child-centered activities, the recommended use of teaching aids, the assessment units, and the allocated timeframes for the Ghanaian language and English,

as prescribed in the NALAP teacher's guide. The following research questions guided this case study:

1. What are the knowledge, motivational and organizational barriers that inhibit 80% of first grade teachers from adhering to the set standards in the NALAP teacher's guide by October 2016? Set standards were defined as following the reading methodology, the child-centered activities, the proper use of teaching aids, the assessment units, and the allocated timeframes for the Ghanaian language and English.
2. What are the recommended knowledge, motivation, and organizational solutions for first grade teachers to effectively teach reading lessons in accordance with set standards in the NALAP teacher's guide?

Methodological Framework

The conceptual framework that will be applied to assess the potential causes of low teacher performance is Clark and Estes' (2008) gap analysis framework. The framework provides a systematic analytical method to identify the gap between the actual performance and preferred performance. Through application of the framework, the assumed knowledge, motivation and organizational (KMO) causes of the performance gap are identified. The findings and results of data collection are systematically juxtaposed against the assumed causes to determine validation. The validated causes become the root causes of the performance gap. Thus, to close the performance gap, the final step in application of the framework is the development of research-based solutions, an implementation plan, and an evaluation framework.

Definitions

Early Grade Reading: Early grade reading refers to learning how to read in the first three grades of primary school (grades 1-3).

EGRA: The Early Grade Reading Assessment (EGRA), developed by RTI with support from the World Bank and USAID, measures foundational reading skills in the early primary grades, 1-3.

Head Teacher (HT): The Head Teacher is equivalent to a school principal in the U.S. education system.

KG1: This pseudonym refers to pre-school in Ghana and is known as Kindergarten 1.

KG2: Equivalent to kindergarten in the U.S., it is known as Kindergarten 2 in Ghana.

L1: L1 refers to instruction in the child's first language or mother tongue.

L2: L2 is used to refer to classroom instruction in the child's second language.

Local language: In Ghana, the local language refers to the language commonly spoken in the school, the marketplace, or other places in the community. It does not always reflect the mother tongue language. The language of instruction in Ghana is a local language, often not children's mother tongue.

Mother tongue language: The mother tongue language refers to the first language spoken at home since early childhood.

NALAP: The National Literacy Acceleration Program (NALAP) is a joint initiative by the Ghana Education Service (GES) and United States for International Development (USAID) that was designed to provide the education system with linguistically and locally appropriate reading materials, teacher's guides, and training to properly implement the bilingual language policy.

P1: This is the first grade of primary school.

P2: This is the second grade of primary school.

USAID: USAID is the United States Agency for International Development. USAID is the lead federal government agency primarily responsible for administering civilian foreign aid. USAID's mission is "to partner to end extreme poverty and to promote resilient, democratic societies while advancing the security and prosperity of the United States."

Organization of the Dissertation

This dissertation is organized into five chapters. Chapter 1, presented above, is the introductory chapter. This chapter introduced the performance gap and the key stakeholder for analysis. It also provided readers with an overview of key concepts and issues related to early grade reading instruction. Additionally, the case study goals and the gap analysis framework were introduced. Chapter 2 is the literature review that provides readers with a review of current literature surrounding the scope of the study. An array of relevant topics will be discussed, including global literacy rates, the importance of bilingual education, characteristics of excellent reading teachers, and factors affecting fidelity to NALAP implementation. Chapter 3 is the methodology section. It describes the assumed causes generated within the gap analysis framework for this study and discusses the research methodology. Chapter 4 presents the findings and results of data collection and analysis. In Chapter 5, evidence-based solutions are provided to address the validated gaps along with a proposed implementation plan, personnel structure, and evaluation framework. The dissertation concludes with a summary of the case study, the key findings, and its implications for the broader international development and early grade reading community.

CHAPTER 2:

REVIEW OF THE LITERATURE

This literature review will examine the root causes of gaps in the implementation of the National Literacy Acceleration Program (NALAP). The review begins with the importance of reading skills acquisition and mother tongue instruction in early childhood. This is followed by an overview of literacy and early grade reading challenges globally, in developing countries, and specifically in Ghana. The review will present an in-depth discussion on scientifically based reading instructional practices and characteristics of excellent reading teachers globally. This section includes current research on knowledge of excellent reading teachers, teacher motivation, teacher preparation, and professional development practices. This best practice research, largely U.S.-based, is juxtaposed against teacher instructional practices and language policies in Africa and Ghana in order to highlight the gaps. Finally, the review identifies factors affecting fidelity to national language policy and provides insights into the assumed organizational causes contributing to NALAP implementation gaps. The literature review concludes with a description of the World Education project in Ghana (designed to support NALAP implementation) and a summary of the assumed knowledge, motivation and organizational gaps.

Learning to Read in Early Childhood

Learning to read and write at a high level of proficiency is a lifelong process that begins in early childhood. Early literacy serves as an important foundation for subsequent literacy development (Neuman & Dickinson, 2001; Snow et al., 1998; Whitehurst & Lonigan, 2001). Numerous research studies have found that learning to read in early childhood is a strong predictor of future academic success and has long-term social and economic implications (Snow et al., 1998). Students who become confident, independent readers in the early grades are not

only well prepared for the academic tasks they will encounter but are also well positioned with the essential skills and strategies necessary to enter an information-based society with ever-increasing literacy requirements (Edwards et al., 2005). As stated in a joint position statement issued by the International Reading Association (IRA) and the National Association for the Education of Young Children (NAEYC), "One of the best predictors of whether a child will function competently in school and go on to contribute actively in our increasingly literate society is the level to which the child progresses in reading and writing" (IRA/NAEYC, 1998, p. 30).

Importance of Mother Tongue Instruction

Research findings suggest that learning to read is most efficient when students are taught in their mother tongue. The main reason is because spoken proficiency and fluency in language is a pre-requisite for learning how to read (Akyeampong, Pryor, Westbrook, & Lussier, 2011). Children who are taught in their mother tongue are able to build on their knowledge of speaking and listening comprehension and can employ psycholinguistic guessing strategies to reading once they understand the rules of the orthographic system (Benson, 2004). Research shows that if students are taught in a language they speak at home, they are better able to develop phonemic awareness, or understanding of the letter-sound relationships (Benson, 2004; Commeyras & Inyega, 2005).

Learning in the mother tongue not only helps children to transfer oral language skills in the first language to reading and writing in the mother tongue, but it also enables children to learn a second language. There is strong historical evidence from past researchers that classroom instruction in the mother tongue language enables students to transfer linguistic and cognitive skills from the first language (L1) to the second language (L2) (Alidou et al., 2006; Dutcher,

2004; Fafunwa, Macauley, & Funnso Sokoya, 1989; Heugh, Benson, Bogale, & Yohannes, 2007; Smits, Huisman, & Kruijff, 2008). Hence, bilingual education programs that use the primary language of instruction with gradual transition to the second language are effective in developing skills in both languages (Benson, 2005).

On the other hand, second-language submersion schooling can delay children's language skills development in both languages. Submersion schooling refers to language minority children being placed in a mainstream classroom and submersed in a non-native language all day. This type of instruction is dubbed submersion because it is akin to being submerged under water without the ability to swim (Benson, 2005). In second-language submersion schooling, learners are immediately taught in the second language without any connection to prior knowledge. The teacher often does not speak the child's mother tongue. Submersion programs may succeed in teaching students to memorize words in L2, but it can take years before children discover meaning in what they are reading (Benson, 2005). According to Benson, (2004, p. 3), "Bilingual education programs even minimally implemented have the potential to reach those who have traditionally been left behind by L2 submersion schooling."

Bilingual, as opposed to monolingual or second-language submersion schooling, offers significant pedagogical advantages that have been reported consistently in the academic literature (Baker, 2001; Dutcher, 2004; Cummins, 2000). The first advantage, as previously noted, is that students may develop basic literacy skills in L1 and communicative skills in L2. After acquiring a strong reading foundation in L1, they can then efficiently transfer the literacy skills they have acquired to L2. The pedagogical principles behind this positive transfer of skills are Cummins' (1991, 1999) interdependence theory. This theory is based on the notion that the knowledge of language, literacy and concepts learned in L1 can be accessed and used in the

second language once oral L2 skills are developed. Secondly, explicit teaching of the L2 beginning with oral skills allows students to learn the new language through communication rather than memorization facilitating classroom interaction and integration of prior knowledge with new learning.

There are also several advantages to learning a foreign language early. Ease of listening comprehension is the greatest immediate benefit. The development of pronunciation skills is another longer-term benefit (Cameron, 2001). Most importantly, children who learn a foreign language early can achieve native-like proficiency. Hence, when the goal of language learning is native-like proficiency, children should begin learning a second language early. Because younger children learn the grammar of the L2 more slowly than older students, when the goal is communicative ability in a foreign language, then older students have an advantage.

Literacy Challenges in Developing Countries

While the benefits of early language learning are well known, literacy rates are still relatively low throughout the world. Worldwide, 123 million youth lack basic reading and writing skills (UNESCO Institute for Statistics 2013a, September). Nearly 9 out of 10 illiterate youth are concentrated in developing countries in sub-Saharan Africa and in South and West Asia (UNESCO Institute for Statistics 2013a, September). Youth illiteracy is particularly widespread in sub-Saharan Africa, where 40% of young people and 60% of young women are not able to read a sentence (UNESCO, 2014). In West Africa, more than 50% of youth are illiterate in eight low-income and lower middle-income countries (UNESCO, 2014).

Poor quality education in developing countries is resulting in millions of children not learning basic foundational literacy skills in the early grades of primary school. The 2014 UNESCO EFA Global Monitoring Report estimates 250 million children attending primary

school in developing countries are struggling to read even basic words, even though half of them have spent at least four years in primary school. This is confirmed by findings from various international early grade reading assessments that have shown very low levels of basic literacy skills in many low-income countries. The Early Grade Reading Assessment (EGRA) developed by RTI with support from the World Bank and USAID, measures foundational reading skills in the primary grades 1-3 (USAID, 2008). Between 2008 and 2012, national early grade reading assessments conducted in 26 countries among nationally-representative samples of grade 2 pupils revealed that one half of children tested could not read a single word (UNESCO, 2012). In several countries (e.g., Malawi, Mali, Zambia, and Pakistan) over 90% of students could not read a single word in a simple paragraph by the end of grade 2 (UNESCO, 2012).

One critical factor affecting reading achievement is the language of instruction. A study by Dutcher (2004) found that an estimated 221 million school-age children speak languages not used as the primary medium of instruction in the formal school system. Still today, children in many countries are taught and tested in languages they do not understand. In many parts of western Africa, French continues to be the main language of instruction, while the vast majority of children speak another mother tongue seriously hampering their learning progress (UNESCO, 2014). In Mali, for example, 94% of grade 2 children receiving instruction in French were unable to read one word of French text (Gove & Cvelich, 2010). In Benin, over 80% of grade 5 students who speak the test language at home achieve minimum learning competencies in reading, compared with less than 60% of students who speak another language (Altinok, 2013).

Students submersed into a foreign language in grade 1 without having prior knowledge or foundational skills are likely to struggle with reading, and are more likely to fall behind, repeat, and eventually drop out or graduate without having acquired functional literacy skills (Gove &

Cvelich, 2010; Francis, Shaywitz, Stuebing, Shaywitz, & Fletcher, 1996; Juel, 1988; Vaughn et al., 2003). This is evident in Sub-Saharan Africa, where many primary school graduates are functionally illiterate (UNESCO, 2014).

Not only is learning to read in the mother tongue language important, but also the duration of mother tongue instruction has implications for future success. The UNESCO report on the *Use of Vernacular Language in Education* published in 1953 led to the belief that if children learned their mother tongue in the first few years of school and studied the second language as a subject, they would be able to successfully switch to the second language by grade 3 or 4 (Alidou et al., 2006). Since then, research has found that if a switch in medium of instruction occurs before learners have developed a high level of written and spoken proficiency in both L1 and L2, then learners will fall behind their peers (Alidou et al., 2006). In Cameroon, children taught in their local language, Kom, in the early grades showed marked achievement in reading comprehension compared with children taught in English (UNESCO, 2014). However, these learning gains were not sustained in grade 4 when they fully transitioned to English. In Ethiopia, children in regions where the local language is taught through upper primary, performed better in grade 8 subjects than pupils taught only in English (UNESCO, 2014). By the end of grade 3, most children, even in well-resourced African settings, had acquired only a fraction of the skills in both languages needed for learning across the curriculum (Alidou et al., 2006). To reduce learning disparities and to achieve literacy in both languages, mother tongue instruction needs to be developed and reinforced for at least 6 years, and 8 years in under-resourced schools (Alidou et al., 2006): in Africa, where conditions are not optimal, it could possibly take longer. Language education models that transition pupils before grade 6 are likely to lead to low performance and struggling readers.

Achieving literacy goals and poverty reduction in developing countries continues to be an overwhelming challenge. Education in developing countries is compounded by chronic difficulties such as low levels of teacher education, poorly designed and inappropriate curricula, lack of adequate school facilities (Benson, 2005), and multilingual societies. Less than 75% of primary school teachers are trained according to national standards (UNESCO, 2014). The UNESCO EFA Global Monitoring Report (2014) strongly asserts that investing in teachers is the key to solve the learning crisis. According to UNESCO (2014, p. 30), all children must have teachers who are "trained, motivated and enjoy teaching, who can identify and support weak learners, and who are backed by well-managed education systems."

Literacy and Early Grade Reading Challenges in Ghana

Since gaining independence in 1957, Ghana has increasingly prioritized education and literacy as strategies for promoting economic development and social empowerment (UNESCO, 2009). As a result, primary and secondary school net enrollments have soared and the overall literacy rates have grown steadily over the years. Youth and adult literacy are currently estimated at 85% and 71%, respectively (UNESCO, 2014a). While impressive, there are stark regional and gender disparities. The difference in youth literacy rates between the urban rich and the rural poor is more than 50 percentage points (UNESCO, 2014b). Women lag behind males at 65.3% compared to 78.3% for men (UNESCO, 2014a).

In addition to inequitable educational outcomes, literacy proficiency rates in the basic education level are quite low. The 2012 USAID/Ghana National Education Assessment 2011 Findings Report found that only 37% of Grade 6 students and 22% of Grade 3 students are meeting reading proficiency levels in English (Cummiskey, Kline, Mulcahy-Dunn, & Varly, 2012). Moreover, results from the first EGRA (Kochetkova & Brombacher, 2014) conducted in

2013 found that 51% of children in grade 2 were unable to read a single word in an English or local language passage. In fact, only 2% could read fluently with comprehension.

Over the last decade, a number of critics have blamed Ghana's school language policy for low literacy in the early grades (Akrofi, 2003). Throughout its history, Ghana has maintained a school policy that emphasizes an English-only medium of instruction (Akrofi, 2003). Since its independence, Ghana has shifted from English-only medium classrooms in primary school (1957-1966), to the Ghanaian language being used in grades 1-3, (1967-1969; 1974-2002) to English-only medium classrooms (2002–2005) from K-12 (Owu-Ewie, 2006; Rosekrans, Sherris, & Chatry-Komarek, 2012). The English-only medium of instruction policy created significant debate among academics, the international donor community, policymakers, and the general populace (Owu-Ewie, 2006). Following several successful mother-tongue pilot programs, the Government terminated the long-standing English only instruction policy and introduced the nationwide expansion of the (2006-2009) USAID bilingual education pilot project (USAID, 2011; Akeampong et al., 2011) known as the National Literacy Acceleration Program (NALAP).

Ghana's National Acceleration for Literacy Program (NALAP)

NALAP is a joint initiative by the Ghana Education Service (GES) and United States for International Development (USAID) and was designed to provide the education system with the linguistically and locally appropriate reading materials, teacher's guides, and training to properly implement a mother tongue instruction policy (USAID, 2011).

As an early-exit model, the mother tongue is taught from kindergarten through third grade with transition to full English as the medium of instruction in grade 4 and beyond, in public schools (USAID, 2011). Each language class devotes 90 minutes to learning both English and the Ghanaian language. The majority of the time is spent on L1: as pupils become fluent,

they gradually transition to English until a 50:50 balance in both languages is achieved in grade 3 (Rosekrans et al., 2012). In grade 4, students begin learning all subjects in English.

To support the Ministry of Education, Science and Sports (MoESS) with transitioning to the new bilingual model, USAID developed teaching and learning materials in 11 Ghanaian languages, published and distributed over 5 million textbooks, and trained 80,000 teachers.

NALAP curriculum and materials. The NALAP curriculum and materials are based on competencies (standards) and milestones that pupils are expected to achieve in the Ghanaian language at each grade level. Standards and milestones for reading in the Ghanaian language (see Appendix F) and for bilingual speaking and listening (see Appendix G) were developed for Kindergarten through Primary Grade 3. The reading standard is described as "a reader uses knowledge, skills and techniques" (e.g., skimming, scanning) (Rosekrans et al., 2012). Table 2 shows the NALAP Bi-literacy Reading Milestones for Kindergarten (KG1-KG2) and Primary School (P1-P3). It includes essential reading skills identified through scientifically based research, such as print concepts, phonological awareness, phonics, vocabulary development, reading comprehension, and text selection (August & Shanahan, 2006; Snow et al., 1998; Akyeampong et al., 2011).

The NALAP standard for bilingual speaking and listening is, "speakers and listeners use knowledge of language and the world together with communicative skills to converse in everyday settings" (Rosekrans et al., 2012). The corresponding milestones for KG1-KG2 and P1 are shown in Table 3. Also considered state-of-the-art, the bilingual speaking and listening milestones emphasize communicative strategies and interaction in social and school settings. The standards for both bilingual speaking and listening and bi-literacy remain the same throughout the grade levels (KG up to P3), whereas the milestones vary for grade-level clusters.

Table 2.

Bi-literacy Reading Milestones for Kindergarten (KG1-KG2) and Primary School (P1-P3)

Print concepts
• Knows that print and written symbols convey meaning and represent spoken language. • Knows that print is read from left to right and top to bottom, and recognizes familiar print in the environment (e.g. labels, traffic signs, logos, such as those for vehicles and TV stations, etc.). • Knows that books have titles, authors, and often illustrators • Knows the proper way to handle books (i.e., holds the book upright; turns pages from front to back, one at a time).
Phonological Awareness
• Knows about the sounds words have, apart from their meaning – for example, knows about syllables (e.g., “kitchen” has two syllables); knows about rhymes (e.g., “bed” and “bread”); recognizes similar starting sounds (e.g., “cat” and “king”).
Decoding and Word Analysis
• Recognizes and produces letters, and differentiates them from numbers and shapes. Knows the letters of the alphabet in order.
Vocabulary
• Knows some sight words, such as own name.
Comprehension
• Uses pictures and prior knowledge to aid comprehension and predict story events and outcomes.

Table 3.

Bilingual Speaking and Listening Milestones for Kindergarten (KG1-2) and Early Primary (P1)

Sound Production and Discrimination
• Begins to produce and discriminate distinctive sounds. • Begins to understand speech containing pauses, errors and corrections.
Vocabulary
• Recognizes and uses meaningful chunks of language of different lengths (e.g. Can I have ___; I don't know) • Recognizes and uses frequently occurring content words (e.g. house, young, sing).
Comprehension and Communication
• Participates in communication in simple and often ungrammatical language. • Uses background knowledge to understand and convey meaning. • Initiates talking and responds to talking during conversation. • Uses private speech as a learning strategy. • Understands and expresses a number of basic communicative meanings (e.g. greetings, expressing likes and dislikes, and, asking and answering questions). • Recognizes and uses appropriate facial expressions, gestures and body movement that convey meaning. • Recognizes and uses stress, rhythm and intonation that convey meaning. • Recognizes and uses basic word order patterns that convey meaning. • Addresses communicative problems by clarifying or seeking clarification (e.g. through rewordings and repetitions).

Materials' development. The NALAP materials consist of three teacher's guides, a learner's textbook, supplementary reading books (e.g., ten big books) and teaching aids (e.g., conversational posters, alphabetic cards). These materials were developed in alignment with standards and milestones for learning to read, write, listen and speak two languages. Although Ghana is home to over 100 indigenous languages and dialects (Akrofi, 2003), the NALAP materials were produced in 11 Ghanaian languages that have been approved for classroom instruction in grades KG1, KG2, and P1-P3. For cost-effectiveness, only three teacher's guides were developed: each one covered three to four languages. For instance, for the Eastern region, Asante Twi, Akuapem Twi, Fanti and Nzema are all included in one teacher's guide (Rosekrans et al., 2012). Teacher's guides are predominantly in English, while activities (i.e., questions, instructions, songs, poems, etc.) that teachers must communicate directly to students are in the local language (Rosekrans et al., 2012). These highly scripted teacher's guides were developed based on results of a survey on teacher knowledge that showed low local language proficiency rates. The guides thus were designed to help both teachers and their students to develop L1 skills (Rosekrans et al., 2012).

The introduction to the teacher's guides gives a general overview of the new approach, an abbreviated version of the standards and milestones, and general guidelines. There are 24 lesson plans or units developed around themes. Each unit covers ten lessons, comprised of five Ghanaian language lessons and five English language lessons. Lesson 5 of each unit is often an assessment of the four previous lessons. Detailed instructions are given for optimal, step-by-step use of the teaching and learning materials (Rosekrans et al., 2012, p. 607-609).

The learner textbooks are organized in a similar fashion to the teacher's guides. For instance, in Primary 1 (P1), the learner textbooks include oral and written activities and periodic

assessment units. There are 24 units divided into three parts. The first part includes activities to promote early literacy (songs, tales to be read aloud, illustrations to be commented upon, etc.); the second part aims at learning to read and write short texts (combining the whole-part-whole approach and the phonics approach); and the third part contains supplementary reading texts and a glossary (Rosekrans et al., 2012, pp. 607-609). The English as a Second Language (ESL) units in the teacher's guide are organized by the theme of the week and incorporate oral activities (e.g., songs, poems, games and rhymes) aimed to develop speaking and listening skills. All primary KG-P3 teachers were to have received the following NALAP materials: a teacher's guide, 10 big books, 10 conversational posters, and 76 alphabetic cards to help children build vocabulary and develop oral fluency (Rosekrans et al., 2012, pp. 607-609).

Akpeampong (2011) notes that the overall NALAP curriculum and methodology is grounded in research. For instance, reading lessons are 90 minutes, which allows sufficient time to engage in meaningful tasks; there is an emphasis on oral activities for the second language and reading in the Ghanaian language, which follows the bilingual education research; and, there is systematic and explicit teaching of phonics and word recognition (reading whole words by sight recognition) and phonics methods presented in one lesson. These strategies among other components were implemented nationwide between 2009 and 2010, and an implementation study was conducted to assess the effectiveness of the program in 2010. The implementation and effectiveness of the program are covered in subsequent sections of this review.

Research on Effective Reading Instruction

In recent years, the U.S. has invested an enormous amount of resources in improving reading in the early grades of primary school in the U.S. and in Africa. The most notable in the U.S. is the federal No Child Left Behind legislation enacted in 2001. Similar to literacy goals in

Ghana, a central goal of this policy was to have all students reading at grade level by the end of grade 3 (Duke & Block, 2012). Comparable to progress in developing countries, there has been little improvement in the last decade. Two-thirds of fourth and eighth-grade students do not reach the "proficiency" category on the National Assessment of Educational Progress (NAEP), and performance gaps are greatest between low and high socioeconomic groups (Duke & Block, 2012).

The U.S. has conducted several landmark reading research studies to identify ways to prevent reading difficulties. The two most noteworthy were the "Preventing Reading Difficulties in Young Children" report in 1998 that examined reading in pre-school through grade 3 and the "National Reading Panel Teaching Children to Read" report in 2000, which focused on improving reading in K-12. Results of these seminal reports, which have been reinforced by research studies over the past decade, have informed the development of scientifically based reading instruction (SBRI), which calls for providing instruction on the five big ideas of beginning reading instruction. There is widespread consensus among researchers (National Early Literacy Panel, 2008; National Reading Panel, 2000; Snow et al., 1998; Fletcher, Lyon, Fuchs, & Barnes, 2007; & Lyon, 1999, 2005) that these five skills are essential in preventing reading difficulties: *phonological awareness* (discriminating sounds in spoken words), *phonics* (relationship of sound and letter), *fluency* (ability to read orally aloud or silently with speed, accuracy and proper expression), *vocabulary* (sight vocabulary and inferring new words), and *comprehension* (connecting sentences, inference and deriving meaning) (National Institute of Child Health and Human Development, 2000).

Despite having achieved consensus on the requisite reading skills for children in the early grades, research shows these skills have not been well integrated into teacher preparation

programs (Walsh, Glaser, & Dunne-Wilcox, 2006). Consequently, a significant number of teachers and school administrators do not adequately know how to implement SBRI practices into their reading curricula (Al Otaiba, Kosanovich-Grek, Torgesen, Hassler, & Wahl, 2005; Foorman & Torgesen, 2001; Moats & Foorman, 2003; Moats & Lyon, 1996). This lack of content and procedural knowledge has serious implications for children's reading skills attainment. While other factors may be correlated with low reading achievement (e.g., race, ethnicity, socioeconomic factors, student motivation, or parental involvement) (Snow et al., 1998; Vellutino, Scanlon, & Jaccard, 2003), Lyon and Weiser (2009) stress "it is ineffective instruction that dooms children to a lifetime of reading failure" (p. 476). The U.S. Committee on Preventing Reading Difficulties likewise concluded that the best intervention to prevent reading difficulties is excellent reading instruction (Snow et al., 1998).

Factual and Conceptual Knowledge of Excellent Reading Teachers

First and foremost, to become excellent reading teachers, educators need to know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension. It is especially important for kindergarten and first-grade teachers to know phonemic awareness (discriminating sounds in words) and phonics skills (associating written letters with their sounds) (Denton, 2014). In order to provide explicit instruction to students, teachers need to understand both the written structure and the spoken structure of the languages (Podhajski, Mather, Nathan, & Sammons, 2009). Therefore, teachers (Akyeampong et al., 2011) must be proficient in the language of instruction and must have in-depth knowledge of the orthography. Akyeampong et al. (2011) recommends training teachers to write and produce short stories, which in the process will help them to understand the language structure.

Factual knowledge of the five key skills and language alone, however, is not sufficient. Teachers also need to have *conceptual knowledge* in order to understand how the five components working together contribute to reading proficiency; and, they need to know how to teach them in an integrated fashion (Lyon & Weiser, 2009; Akyeampong et al., 2011). Research shows that "easier to master skills" such as word reading and decoding skills are being taught in the U.S. and Africa (Duke & Block, 2012; Dubek, Jukes, & Okello, 2012), but the higher-level skills, such as vocabulary, comprehension and unfamiliar content knowledge are being neglected (Duke & Block, 2012) in the early primary grades. Akyeampong et al. (2011) recommends that teachers at all levels should be trained in teaching decoding and comprehension as integrated components; and, easier word level approaches such as syllabic and 'look and say' approaches (reading whole words by memorization or sight recognition) need to be coupled with more difficult methods, such as identifying words from the context. These skills need to be integrated into bilingual and multilingual classrooms. Teachers need to know how to teach reading in two or more languages and to understand the important influence of mother tongue instruction on learning a second language (UNESCO, 2014; Akyeampong et al., 2011).

Gaps in Factual and Conceptual Knowledge of Ghanaian Teachers

In a study of continual professional development in Ghana, researchers (Akyeampong et al., 2011) observed 15 newly trained teachers teaching a reading class. They found that trainees focused more on the easier to teach pronunciation and decoding skills, such as 'look and say' and phonics approaches, rather than fluency and comprehension (Akyeampong et al., 2011). This is likely attributed to a knowledge gap due to less emphasis on comprehension skills in pre-service curriculum for the early primary grades (Akyeampong et al., 2011). Researchers found that many trainers were not familiar or proficient in the local languages used for instruction and very few

studied reading methodologies in the Ghanaian language. As a result, researchers observed a lack of conceptual understanding about the crucial links of first and second language learning. Teachers also did not understand the importance of printed text, longer passages, and teaching aids for fostering vocabulary and comprehension skills (Akyeampong et al., 2011).

In a formative evaluation study of NALAP in 2011, results from teacher interviews revealed a general lack of understanding of phonics instruction (USAID, 2011). For instance, phonics, the understanding that printed words are composed of individual letters and sounds (Edwards et al., 2005), is often taught through "decoding" strategies, such as segmenting and blending sounds into recognizable words (University of Oregon Center on Teaching and Learning, 2009). Teachers assessed cited the following examples for effective teaching of phonics: using picture cards, singing, or repeating after the teacher. In fact, only one teacher mentioned blending and segmenting. This finding indicates that teachers have little understanding of phonics (USAID, 2011).

Procedural Knowledge Required for Delivering Scientifically Based Reading Instruction

According to the International Reading Association (2000), excellent reading teachers share many characteristics of good teachers in general; they have strong content knowledge and pedagogical knowledge in reading, know how to create active and participatory classrooms, are able to facilitate self-guided learning, and use a variety of methods to support struggling learners. The research to date shows that excellent reading teachers use six effective instructional practices: (1) explicit and systematic reading instruction, (2) differentiated instruction, (3) flexible grouping strategies, (4) opportunities for guided and independent practice, (5) sufficient time to engage in meaningful learning tasks, and (6) monitoring of students' progress.

Explicit and systematic reading instruction. Excellent reading teachers provide direct, explicit and systematic instruction (Denton, 2014; National Reading Panel, 2000) when needed, model the skill, demonstrate how to use it, and explain why it is important (IRA, 2000). According to Dubeck et al. (2012) *explicit instruction* means that the concept is directly taught so that students do not have to infer what the teacher means while *systematic instruction* signifies progressing in order of complexity from the easiest to the most difficult. Researchers (National Reading Panel, 2000; Dubeck et al., 2012) recommend the explicit teaching of phonemic awareness and phonics for preventing reading difficulties followed by guided practice as the skills are applied. For example, the Center for the Improvement of Early Reading Achievement (Taylor, Pearson, Clark, & Walpole, 1999) reported that the most effective reading teachers taught phonics in isolation, but coached students to apply phonics skills in real reading situations (Blair, Rupley, & Nichols, 2007). Numerous research studies have demonstrated that when students receive explicit instruction in phonology and phonics, their reading performance improves at a faster rate (e.g., Ball & Blachman, 1991; Bos, Mather, Narr, & Babur, 1999; Cunningham, 1990; Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998; Moats & Foorman, 2003; O'Connor, 1999; Podhajski & Nathan, 2005; Torgesen, 1997).

Lower-level skills, such as phonics and word reading, require more direct instruction than do higher-level cognitive processes, such as comprehension skills, which require more use of inquiry, modeling and coaching techniques (Blair et al., 2007). Effective strategies for teaching comprehension include both pre-reading strategies such as making predictions about a text and post-reading strategies such as summarizing a story or inferring main ideas from the context (Taylor, Pearson, Peterson, & Rodriguez, 2005).

Differentiated instruction. Excellent reading teachers know how to use a variety of methods to teach reading, when to use each method, and how to combine the methods (IRA, 2000) to create a successful learning experience. For instance, effective teachers recognize the influence of language, culture, ethnicity and individual ability in the learning process (Denton, 2014; Lyon & Weiser, 2009), and they know that instruction must reflect attention to these individual differences.

Flexible grouping strategies. A type of differentiated instruction is flexible grouping strategies, whereby teachers group pupils according to ability. A study on early primary literacy in Kenya found that grouping students by ability, either pairing strong students with weak students or same-level students together, was helpful for struggling readers; in fact, it was one of four factors enabling effective literacy instruction (Dubeck et al., 2012). Numerous other researchers (Bowman, Donovan, & Burns, 2001; Leeper, Witherspoon, & Day, 1984; Landry, Swank, Smith, Assel, & Gunnewig, 2006) assert that both small and large groups aligned with the learning objectives and abilities of students can maximize learning outcomes.

Opportunities for guided and independent practice. For children to master reading, they need opportunities for independent and guided practice with support from their teacher or peers. According to Blair et al. (2007) students who do well in learning isolated reading skills during direct classroom instruction, but who do poorly in reading fluency and comprehension may lack the opportunity to practice reading skills independently. Allington (1983) reported that low-achieving students spent more time on worksheets and on isolated word-recognition activities rather than on whole-text reading and comprehension activities. In contrast, teachers who provide opportunities for independent practice often have students who achieve at a higher level than teachers who do not (Rupley, Wise, & Logan, 1986). Feedback and guidance is

important at the initial stages of reading practice according to Vygotsky's (1986) theoretical work on mediated instruction. The amount of guidance is great at the beginning, but then gradually declines to little or none (Blair et al., 2007). The National Reading Panel (2000) further recommends guided oral reading aloud with clear corrective feedback. This approach supports students to read accurately when they transition to reading silently or in pairs.

Sufficient time to engage in meaningful learning tasks. The amount of time students are engaged in reading tasks is important for learning to take place (Duke & Block, 2012). CIERA researchers (Duke & Block, 2012) studied the quality of time and reported that effective reading teachers engaged students on tasks 96% of the time while students of less effective teachers were on task and engaged an average of 63%. Effective teachers also devoted considerably more class time to small-group instruction per day in reading as compared to the least effective teachers (48 minutes versus 25 minutes). In terms of total class time spent on reading instruction, successful models of reading, such as Success for All, devote a 90-minute period to reading instruction in schools with large proportions of disadvantaged children (Duke & Block, 2012).

Monitoring of students' progress. Excellent reading teachers assess their students' oral language and reading abilities on a continuous basis rather than relying on standardized tests (Lyon & Weiser, 2009). Effective teachers use assessment data to select instructional strategies that are appropriate to the desired reading outcomes and to their students' existing reading capabilities (Blair et al., 2007). These school-based assessments are typically informal where teachers ask students to read text for 1–2 minutes and calculate how many words they read correctly (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Hasbrouck & Tindal, 2006). According to UNESCO's Global Monitoring Report (2014), teachers need to be trained in classroom

assessment strategies so that they can detect learning difficulties early and use appropriate strategies to address the deficiencies.

Gaps in Procedural Knowledge of Ghanaian Teachers

In the continual professional development study in Ghana, trainees in Ghana understood the concepts of explicit and systematic instruction — directly teaching phonics and then moving from simple to complex skills (Akyeampong et al., 2011). However, researchers observed that there was a strong emphasis on developing oral language skills and word analysis with limited opportunities for guided practice or interaction with text (Dubeck et al., 2012; Akyeampong et al, 2011). The 'look and say' method was predominantly used throughout all classrooms of newly trained teachers observed in Ghana (Akyeampong et al., 2011). In terms of varying teaching methods, one teacher observed was able to provide remedial and differentiated instruction to help struggling learners with decoding and blending techniques, to form new words. However, the teacher was not as adept at teaching decoding skills in the target language when dealing with printed words or in using flexible grouping strategies to deal with large class sizes. As a result, the teacher often resorted to oral repetition, choral whole class reading, and code-switching – strategies that are less effective for supporting students in learning to read (Akyeampong et al., 2011). Teachers also did not know how to produce or effectively use teaching and learning aids to manage large, multilingual classrooms. Akyeampong et al.'s (2011) research further found that classes were heavily teacher-centered with very few teachers using group work and paired reading as recommended in the NALAP teacher's guide.

In a NALAP implementation study carried out in 2010, classroom observations of 240 NALAP trained teachers across 13 districts revealed that there was virtually no teaching of phonological awareness (the sound of words) or phonics (the link between sounds and letters),

and there was improper use of teaching aids to instruct the essential reading skills outlined in the teacher's guide (Hartwell, 2010).

In conclusion, the available research indicates there is a knowledge gap with regards to teaching the essential reading skills (phonological awareness, phonics, and decoding), using teaching aids and flexible grouping strategies, providing opportunities for guided or independent practice, and engaging students in meaningful reading tasks that build comprehension skills.

Factors Affecting Teacher Motivation and Performance

According to the International Reading Association (2000), excellent reading teachers believe children can learn how to read and are able to motivate their students. Moreover, effective teachers have a strong sense of self-efficacy — they believe in themselves and their ability to improve students' learning (Pressley, Allington, Wharton-McDonald, Block Collins, & Morrow Mandel, 2001). Several factors can affect teachers' self-efficacy such as a mismatch between the training they receive in teacher preparation colleges and the realities they are confronted with when they enter the classroom, teacher expectations of learning outcomes, or overconfidence in their knowledge of reading. These factors are briefly described below.

Self-efficacy. Research has shown that teachers believe that they are more knowledgeable and prepared for teaching reading than they really are (Podhajski et al., 2009). In a study on teacher knowledge, Cunningham, Perry, Stanovich, and Stanovich (2004) found that the majority of kindergarten to third-grade teachers who rated their knowledge of children's literature, phonemic awareness, and phonics as being high actually demonstrated limited knowledge about phonemic awareness and phonics. In fact, teachers who reported that they were experts in phonological awareness had trouble counting the number of phonemes in words. The researchers concluded that teachers tended to overestimate their knowledge of reading skills,

which may explain why they may not be open to new ideas presented in professional development.

On the other hand, newly qualified teachers may have less self-efficacy because of under-preparation in the teachers' college. Research has found that newly qualified teachers who arrive to schools with confidence of having successfully completed the training often become less motivated and confident when they find they are ill-equipped to deal with the challenges of large class sizes or lack of resources (Akyeampong et al., 2011). This finding is more prevalent in Africa, and especially Ghana, where teachers are often trained in urban settings under ideal, well-resourced demonstration sites, and then placed in rural areas for their initial teaching post (Akyeampong et al., 2011).

Teacher expectations. Despite expectations of donors and the international community that students should be able to read and understand meaning of text by the end of grade 2 (USAID/Ghana, 2012), research shows that teachers may have different expectations. Teachers interviewed in six countries in Africa believed that students should not be able to read fluently until grade 4 or 5 (Akyeampong et al., 2011; Trudell 2005).

Linguistic factors. In countries and schools where languages familiar to children are used as languages of instruction, these language policies may be difficult to implement, particularly where there is more than one language group in the same classroom and teachers are not proficient in the local language (UNESCO, 2014; Alidou et al., 2006). For example, Akyeampong et al. (2011) found that teacher trainees in Ghana were not always familiar with the language they were expected to teach, and only 23% of trainees at one college studied reading methodology in the Ghanaian language. When teachers are not confident, comfortable or competent in teaching the mother tongue language, students are often taught reading through

memorization and traditional methods rather than comprehension (Trudell et al., 2012) and guided practice. Alidou et al. (2006) reports from cross-country studies in Africa (Benin, Burkina Faso, Guinea-Bissau, Mali, Mozambique, Niger, South Africa, Togo, Tanzania, Ethiopia, Ghana, and Botswana) that when the medium of instruction is in a language children do not understand, teachers are forced to use traditional teaching techniques such as chorus teaching, repetition, memorization, recall, and code-switching. Without opportunities for meaningful interaction with the language, effective learning cannot take place. The authors (Alidou et al., 2006) conclude that the language of instruction and traditional techniques are largely responsible for low academic achievement of students in Africa.

Teaching reading in multilingual classrooms. A prerequisite for learning to read is spoken proficiency and fluency in the language of reading instruction (Akyeampong et al., 2011). Hence, schools have the responsibility to accommodate children with limited proficiency in the national language or English. The Committee on the Prevention of Reading Difficulties in Young Children offers the following guidelines for addressing multilingual classrooms (Snow et al., 1998, p. 11):

1. If language-minority children enter school with no proficiency in English, but there are instructional guides, learning materials, and teachers proficient in the local language, these children should be taught how to read in their mother tongue while acquiring proficiency in spoken English and then they should gradually be taught to extend their skills to reading in English.
2. If language-minority children arrive at school with no proficiency in English, and there are insufficient instructional and learning materials, no local teachers proficient in the language, and there are insufficient numbers of children to justify local

> language materials development, then the instructional priority should be to develop the children's proficiency in spoken English. While print materials may be utilized for developing children's understanding of English speech sounds, vocabulary, and syntax, it is not recommended to use the materials for formal reading instruction until students have achieved an adequate level of proficiency in spoken English.

Ideally, for bilingual education to be effective in developing countries where there are a large number of language-minority speaking children, governments should provide appropriate learning materials, instructional guides, and well-trained teachers who are bilingual. Training should begin in the teacher's college so teachers are prepared to deal with the realties in the classroom. UNESCO (2014) suggests that governments should recruit teachers from minority language groups, provide them with initial and in-service training to teach in both languages, and deploy them to schools where there is a large number of minority language groups.

Reading Teacher Preparation and Professional Development

Professional Development Research

According to researchers (Moats & Foorman, 2003; Walsh et al., 2006), a substantial gap exists between teacher professional development programs and effective reading instruction. Teachers in past studies have reported that they possess limited knowledge in teaching word recognition and phonics (Bos, Mather, Silver-Pacuilla, & Narr, 2000). Direct observations further substantiate that teachers do not spend much time explicitly teaching word analysis skills, such as decoding and letter sound (Juel & Minden-Cupp, 2000; Vaughn, Moody, & Schumm, 1998).

Researchers have found that this disconnect between what teachers must know and what they are actually taught in their preparation programs (Joshi, Binks, Hougan, Dahlgren, Ocker-

Dean, & Smith, 2009; Lyon & Weiser, 2009) is related to knowledge within teacher colleges, universities and testing. Lyon and Weiser (2009) note that the majority of college and university teacher preparation faculty may have inadequate knowledge of linguistic constructs needed for effective literacy instruction. Additionally, tests for obtaining teaching credentials do not adequately assess reading concepts (Lyon & Weiser, 2009).

In order to deliver scientifically based reading instruction that includes phonics integrated with vocabulary and comprehension strategies, teachers need to be taught these specific, evidence-based strategies in their pre-service and in-service training (Lyon & Weiser, 2009; Moats, 2007; Moats & Lyon, 1996; Stainthorp, 2004). Ongoing professional development and support is crucial to ensuring that all teachers know how to deliver excellent reading instruction (Snow, Griffin, Burns, & the NAE Subcommittee on Teaching Reading, 2005; Porche, Pallante, & Snow, 2012). However, research across three decades has consistently found that teachers desire more and better quality in service support (Anders, Hoffman, & Duffy, 2000).

According to Porche et al. (2012), the challenge is to design effective professional development that helps teachers incorporate the five key elements of reading into their teaching, supports their continued use of them, and promotes collaboration throughout a school and ultimately a district. A movement that has emerged as a result of research is, the development of professional learning communities (DuFour, 2007; Eaker & Keating, 2008), which focus on creating groups of teachers committed to changing instructional practices to achieve measurable student gains. One example of this approach is the Collaborative Language and Literacy Instruction Project (CLLIP) in the U.S. The CLLIP was designed to help teachers incorporate research-based practices into literacy instruction (Porche et al., 2012). The CLLIP project incorporates the core principles of professional learning communities: shared vision of student

learning outcomes, ongoing formative assessment to identify individual student strengths and weaknesses, use of data to assess and continuously improve instruction, and inclusion of scientifically based knowledge in making choices about teaching methods (DuFour, 2007).

Apart from developing professional learning communities, research suggests three critical components for the development of excellent reading teachers (Snow et al., 1998): coaching, ongoing feedback from mentors or colleagues, and opportunities for self-reflection. For instance, the National Association for the Education of Young Children recommends a comprehensive professional development package that includes continual in-classroom coaching and mentoring on the use of appropriate curriculum, instructional strategies, and assessment tools (Landry et al., 2006). As a result of research studies, professional learning communities and continuous professional development have become more popular in the U.S. and in Africa.

Pre-Service Training of African and Ghanaian Teachers

Research across Africa indicates that teachers' pre-service training generally does not prepare them to teach reading fluency and comprehension (Trudell et al., 2012). A study on teacher preparation and continuing professional development in six African countries showed that few teacher education courses focused specifically on learning how to teach reading and writing (Akyeampong et al., 2011). In Ghana, for example, only one out of four semesters was concerned with reading methods courses. Although Ghana allocates 30 hours to teaching reading (which is relatively long compared to other countries), it is not sufficient to master the pedagogical knowledge and methods in the curriculum (Akyeampong et al., 2011).

According to the review (Akyeampong et al., 2011) of the primary school curricula across the six countries, children should be reading short texts with fluency and comprehension in grades 1-3. However, the pre-service curricula in the studied countries focus on pre-reading

skills and decoding of words in the lower grades while comprehension is emphasized in upper primary (Akyeampong et al., 2011). This leads to the belief that these skills are not appropriate for younger children. In Ghana, for example, by the end of grade 1, pupils are expected to be able to read 4-5 short sentences of at least four words and by grade 3 read and understand short text. Newly qualified teachers spent more time on easy to teach skills such as letter sounds, syllable reading, pronunciation and punctuation. Higher-level skills, such as comprehension and reading self-selected text, often took place in grade 4 or upper primary (Akyeampong et al., 2011).

Despite this misalignment between the primary school curriculum and the teacher's initial training curriculum, there are several major assumptions schools and the government make about newly qualified teachers in Ghana (Akyeampong et al., 2011). The first assumption is that teachers possess pedagogical knowledge and skills to teach the broad range of reading skills from pre-reading to comprehension. The second assumption is that they have been trained to use both phonics and whole-word methods simultaneously. The third assumption is that they are able to design and use appropriate teaching and learning materials (TLM) to address reading difficulties. The fourth assumption is that teachers have been trained to deal with the challenging realties of urban and remote schools, including large class sizes, multilingual classrooms, and students without prior pre-school preparation. The teaching college courses do cover the primary curriculum content, instructional methods, and materials; however, it does not provide adequate practical opportunities to fully grasp the concepts and skills needed to effectively teach reading (Akyeampong et al., 2011). Even though Ghana offers one of the longest practicums — a full year at the end of the coursework, there is no formal system in place to ensure trainees are supported by expert teachers in the practicum schools or scheduled opportunities for critical

reflection with their college tutors. There is also a question of whether the training and mentoring actually takes place, since tutors' supervision of trainees can be sporadic and contingent on the availability of college funds and transport. In some cases, it may not be incorporated into the college's plan or budget.

Professional Development of NALAP Teachers

In-service support. The most recent continuing professional development for in-service teachers in Ghana is the National Literacy Acceleration Literacy Program (NALAP). Through a cascade-training model, 70,000 teachers and head teachers from KG-3 grades were provided a one-week orientation to the NALAP concepts and teacher's guide (Hartwell, 2010). During the training that took place in December 2009 and February 2010, teachers were introduced to NALAP structure, materials and pedagogy; literacy standards and milestones; the key reading components (print concepts, phonological awareness, phonics, vocabulary, comprehension); and instructional strategies for developing oral skills in the English language and reading skills in the mother tongue. Teachers were provided with opportunities for preparation of lessons, practice demonstration sessions, and critical reflection (Hartwell, 2010; Rosekrans et al., 2012).

Results of NALAP professional development. Several evaluations of NALAP implementation have been conducted to assess the effectiveness of the professional development program. The first implementation study (EQUALL; Hartwell, 2010) was in August 2010 to assess the effectiveness of NALAP's instructional strategies. It covered a purposeful sample of 60 schools in six regions, 13 districts and 240 teachers from KG-P3. In 2011, USAID carried out a smaller formative evaluation of NALAP to assess whether teachers were making use of the NALAP teaching and learning materials. The sample consisted of three regions, 11 schools and 12 teachers in grades P1-P3. Additionally, in 2011, the multi-country Teacher Preparation and

Continuing Professional Development research project assessed 15 newly qualified teachers in the teachers' college who had been trained in NALAP methodology. Most recently in 2013, a basic education study on the quality and inclusiveness of schools was conducted across Ghana's three northern regions. This study included observations of 30 literacy lessons across a sample of 86 schools. Each of these studies informs the results of the NALAP training on teachers' instructional classroom practices.

Consistent across all studies was the finding that teachers loosely followed the teacher's guide. In 75% of classrooms observed, teachers did not observe timeframes or activities in the teacher's guide, which limited the use of learner textbooks and teaching aids and lowered the effectiveness of NALAP on student outcomes (USAID, 2011; Hartwell, 2010). According to classroom observations, teachers generally emphasized repetition and memorization, and there was virtually no teaching of phonological awareness or phonics, or opportunities to practice decoding (Hartwell, 2010; USAID, 2011; Casely-Hayford et al., 2013). As a result, children could memorize large sections of their textbooks but "could not read a simple word taken out of the context" (Casely-Hayford et al., 2013, p. 6).

Akyeampong et al.'s research in 2011 found that the teachers generally followed the pattern prescribed by the program. Teachers began lessons with oral activities, introduced key words both orally and in written form, and then facilitated reading words and text through repeated chorus drills. However, classes were heavily teacher centered. Even when pupils were arranged in groups, lessons were teacher led (Hartwell, 2010). Very few teachers used group and pair reading as recommended in the NALAP teacher's guide or independent silent reading and comprehension exercises (Akyeampong et al., 2011).

Teachers struggled with teaching in the Ghanaian language often shifting between English and Ghanaian language, even during Ghanaian language lessons (Hartwell, 2010). Akyeampong et al. (2011, p. 33) observed that, "some teachers could not read or write in the target language they were expected to use for instruction."

Only one-third of schools had reorganized the timetable to accommodate the 90-minute Language and Literacy period (Hartwell, 2010). According to Akyeampong et al. (2011, p. 52), "most teachers felt that 90 minutes was too long."

Materials were incorrectly used or not used at all. For instance, conversation posters are designed to support oral language development, but teachers wrote the words describing objects in the posters on the blackboard for 'look and say' repetition and memorization activities, rather than using the posters to support conversation and comprehension (Hartwell, 2010). Observers in the 2010 study did not find any teachers using alphabet cards, which could indicate a lack of procedural knowledge and insufficient training.

There was universal agreement among stakeholders that the training was too short for teachers to master the new approaches and materials (Hartwell, 2010). Head teachers and teachers recommended the following professional development, needed to improve implementation: (1) training on how to prepare lesson notes using the new teacher's guide, particularly as this does not align well with the existing syllabi in English and Ghanaian language; (2) support for teachers who are not fluent readers and writers in the Ghanaian language they are assigned to teach, especially in the Northern and Upper West regions; and, (3) ongoing professional support in using the new methodology, teacher's guides and materials, which emphasize much greater engagement and interaction with students.

Organizational Barriers to Fidelity of Implementation

Factors Affecting Language Policy Implementation

Both formal research and informal classroom observations indicate that there is a lack of fidelity to language policy implementation in Africa. For example, in Kenya, despite the national bilingual language instruction policy promoting the mother tongue in grades 1-3, teachers used English 70 to 80% of the time for classroom instruction (Piper, 2010). In Ghana, in 75% of classrooms observed, teachers were not following the NALAP teacher's guide as intended (USAID, 2011). Research shows that there are generally five factors that affect fidelity to implementation of language of instruction policies: (1) lack of instructional materials or inappropriate materials that do not explicitly show teachers how to teach reading in the mother tongue (Dubeck et al., 2012); (2) inadequate training to fully master bilingual and bi-literacy skills and concepts (Akyeampong et al., 2011); (3) insufficient mentoring and coaching to support teachers with changing classroom practices (Hartwell, 2010); (4) whether teachers buy-into the teaching methodology and believe that it can produce positive results for their students or whether it is a top-down approach that does not allow for autonomy and creativity (Datnow & Castellano, 2000); and, (5) an emphasis on English-only instruction due to the belief that students will perform better on national exams (Dubeck et al., 2012) if they learn English in the early grades.

On the other hand, Landry et al. (2006) identified the following factors that support fidelity of implementation and scale-up: (1) a research-based curriculum that explicitly shows teachers how to teach reading skills; (2) providing literacy coordinators and mentors to support teachers with making instructional changes in the classroom; (3) periodic and ongoing training with the same set of teachers for building consensus on implementation strategies and a learning

community within the school and district; (4) multiple classroom observations of teachers across the year to systematically assess performance and strengthen areas through targeted coaching and follow-up trainings; and, most importantly,(5) long-term implementation over several years to allow for course correction and integration of lessons learned. Fisher, Frey, and Nelson (2012) note that it takes several years of sustained professional development to achieve success with education policy reform. The authors stress that, "sustained focus, with quality professional development, clear expectations for implementation, and support for change are important for a successful education reform" (Fisher et al., 2012, p. 562).

To achieve large-scale education reform, it is also important to allow for flexibility in implementation while staying true to the core principles of the reform that largely impact results. Datnow and Castellano (2000) found that all teachers made adaptations to the School for All (SFA) program despite monitoring and accountability measures in place and strong support from trainers, principals and facilitators. The adaptations made by teachers in SFA schools demonstrate that education reforms are rarely implemented exactly as expected. Wylie's (2008) Tight But Loose Framework addresses this issue. Wylie states that for any intervention to be both effective and scalable, there must be three conditions: (1) a clear idea of the program theory of change; (2) a common understanding of the types of scaling, both small-scale and large-scale; and, (3) consideration of the diverse contexts in which the intervention is being scaled. With these three concepts in mind, education reformers are empowered to make good decisions about what parts of the intervention can be adapted at the school-level and which components are integral and critical to the theory of change. In other words, having "clarity on the theory of action, allows for rigor without rigidity" (Wiley, 2008, p. 40).

Factors Affecting NALAP Implementation in Ghana

Although 100% of 240 teachers interviewed at the beginning of NALAP felt positive about teaching the new curriculum and over 99% found the teacher's guide easy to use (Hartwell, 2010), classroom observations from numerous studies (Casely-Hayford et al., 2013; Hartwell, 2010; USAID, 2011) have consistently found that there is a lack of fidelity to the sequence, timing, and activities in the teacher's guide. In fact, only 15-20% of teachers are properly using the teacher's guide to carry out active learning activities (Hartwell, 2010). Furthermore, only 2 of 15 newly trained teachers observed (Akyeampong et al., 2011), fully adhered to the teacher's guide, whilst the majority relied on their experience and pre-service training to inform teaching methods.

Past assessments have identified five factors affecting fidelity of NALAP implementation in Ghana: (1) insufficient training; (2) delayed, insufficient and inappropriate materials; (3) high teacher turnover mostly due to teacher transfers; (4) inadequate mentoring and follow-up support and, (5) difficulties with speaking, reading and teaching the local language and English.

Insufficient training. District supervisors, head teachers and teachers interviewed in the 2010 implementation study asserted insufficient training largely contributed to lack of adherence to the teacher's guide (Hartwell, 2010). District supervisors who had observed classes indicated that teachers generally had difficulty covering the lessons according to sequence and within the time allotted (Hartwell, 2010). District supervisors also observed that teachers were not comfortable or conversant in using the big books and conversational posters. This is likely due to insufficient training and limited follow-up support. Due to budget and time constraints, the original 12-day NALAP training was reduced to a five-day orientation (Hartwell, 2010). Program staff acknowledged that the orientation would not be sufficient to transfer the

knowledge and skills required for teachers to effectively deliver the NALAP methodologies and materials; however, the studies do not indicate whether there has been any follow-up training since 2010. Informal interviews suggest there may have been pockets of training, but nothing on a large-scale.

Delayed, insufficient, and inappropriate materials. The delayed delivery of materials (five months after the training) further hampered teachers' ability to immediately apply what they had learned in the training (Hartwell, 2010). An assessment of P3 classrooms showed that some schools received an insufficient number of teacher materials and pupil readers (Mulcahy-Dunn et al., 2013). Other studies found that in many cases the English text was too advanced for the level of learners (Casely-Hayford et al., 2013). The P2 guide begins with a full-page story and did not include a review of the letter sounds and word reading strategies, which children should have learned in P1 because NALAP assumes that students have mastered these skills already. Therefore, teachers did not know how to provide remedial instruction for struggling learners (Hartwell, 2010). Literacy assessment results show that explicit instruction in phonics and word reading is still needed in P2 and P3 (USAID, 2011).

High turnover. Furthermore, due to teacher transfers and newly recruited teachers, many teachers observed had not been trained in NALAP implementation (USAID, 2011). High turnover of NALAP trained volunteer teachers coupled with a large number of untrained and transient teachers has affected the continuity of NALAP (Hartwell, 2010).

Inadequate mentoring and follow up support. While NALAP originally had planned further professional training and support during implementation to be provided by master trainers and head teachers, Hartwell (2010) found that less than half (only 42%) of teachers reported that they had received some kind of support. Most common types of support received were from head

teachers (19%) followed by district trainers (14%) with very little support from Circuit Supervisors or peer teachers (Hartwell, 2010).

Linguistic difficulties. Nearly 70% of observations revealed that the teachers were orally proficient in the Ghanaian language, with enough mastery to provide explanations (USAID, 2011), however, the evaluators conclude that, "many teachers who are fluent in a language are not well prepared for teaching the unique and specific area of reading in that language" (USAID, 2011, p. 9). The findings further showed that 60% of the teachers were not completely comfortable teaching in English (USAID, 2011). In 20% of schools visited, evaluators found that teachers had difficulties with the curriculum because a significant proportion of teachers or students were not fluent in the language selected for instruction. Since NALAP materials were only developed in 11 languages, district supervisors were at a loss as to how to deal with schools that do not speak one of the NALAP languages. This could affect the fidelity to implementation on the national level, since teachers and students may not find it useful to learn another language. Finally, some district supervisors assert that there are grammatical and spelling errors in some of the language guides, which could also affect language learning if teachers are not fluent in the language.

Positive factors contributing to effective NALAP implementation. The five most significant factors supporting NALAP implementation ranked in order of influence were (1) teachers' language competence in English, (2) teachers' oral and written competence in the Ghanaian language, (3) whether the teacher is properly using the teacher's guide, (4) classroom size (level of crowding), and (5) whether the teacher had been trained (Hartwell, 2010).
The most influential factor, fluency in English, is extremely important for fidelity to implementation because the teacher's guides are written in English. The second factor, command

of language, was defined according to best practice as the teacher having command over oral and written (English/Ghanaian) language and the ability to communicate effectively in it, correct written English on the chalkboard and on teacher-prepared materials, and, teacher uses oral English only in KG1, KG2, and P1 and does not attempt to teach children to read English in those classes (Hartwell, 2010, p. 36).

The third factor, whether the teacher makes use of the teacher's guide, was defined as the teacher following the guide in terms of "arrangement of learners, use of teaching and learning materials (TLMs), thinking skills and learner interaction" (Hartwell, 2010, p. 36). Consistent with prior research (Porche et al., 2012; Snow et al., 1998; Landry et al., 2006), critical reflection was also a key factor in how well teachers used the guide. According to the NALAP implementation study (Hartwell, 2010, p. 36), where teachers were taking the time to reflect on NALAP training and using teacher's guides for lesson preparation, classrooms were transformed along with teaching practices towards more learner-centered approaches and learner-focused behavior. The fourth ranked factor, overcrowded classrooms, is also important in that it affects whether the teacher can carry out the child-centered activities. Surprisingly, whether the teacher was trained was the fifth factor affecting fidelity to implementation with results showing that 18% more trained teachers than those who were untrained were using the teacher's guide correctly (Hartwell, 2010).

Past NALAP Evaluation Findings, Conclusions, and Recommendations

Despite the challenges of NALAP implementation, the majority of education officials interviewed in past assessments at the district level, head teachers, and teachers were strongly in favor of the program. The first NALAP implementation study by Hartwell in 2010 concludes with recommendations for a second round of orientation and training for the trainers and teachers

in KG-P3, particularly on issues related to teachers' concepts of literacy and methods, the use of teacher's guides and help with L1 reading, and, addressing the issue of people and languages not currently served by the 11 official languages.

The second NALAP implementation study by USAID in 2011 concludes with a validation of the program stating that, in many ways, NALAP is a model for sub-Saharan African countries with similar language-of-instruction policies. The evaluation (USAID, 2011) provided recommendations for improving teacher performance, emphasizing close adherence to the teacher's guide, particularly with a focus on phonics and decoding in grades 1-3, and a refresher course that trains all KG1–P3 teachers on NALAP methods. The evaluation further suggested applying the Guskey Theory of Teacher Behavioral Change (Guskey, 2002), which would bring teachers together for a shorter training period during which they would focus on phonics skills. Initially, the teachers would observe model lessons and discuss classroom instruction with other teachers, and then, they would return to their classrooms to put into practice what they had learned, which would lastly be followed by support and reflection with other teachers and instructional coaches (USAID, 2011). Following this would be a second round of training where teachers would have a chance to reflect and refine their newly acquired skills with the addition of new ideas and content.

The evaluators (USAID, 2011) stressed the importance of teachers receiving consistent and frequent feedback, especially immediately following the training to increase motivation and address challenges, and throughout the school year for continued monitoring. Ghana's supervisory support structure is more advanced than most sub-Saharan African countries with circuit supervisors (who provide pedagogical and administrative support to Head Teachers and teachers), District Teacher Support Teams, and Head Teachers in place (USAID, 2011).

Providing specific training on how each could deliver support to teachers for NALAP was recommended and entailed how to observe, model and give effective, specific, and targeted feedback on instructional implementation (USAID, 2011). Increasing oversight and involvement of district-level supervisors would require administrative reforms, such as a plan for delivering travel and transportation funds based on the number of schools, number of visits, and distance of travel (USAID, 2011).

The final recommendations centered on using existing data and assessment structures for measuring literacy outcomes. Within the NALAP curriculum, there are pupil assessments given on the fifth day of each unit. Teachers and head teachers could be trained in how to use the information gained from these assessments to make decisions about refresher trainings or classroom observations. In addition, Ghana could track reading achievement through the existing school and district report card system. Finally, the evaluation proposes considering associating advances in the teacher career ladder with NALAP implementation as a way to give teachers non-monetary incentives for changing teaching practices over the long-term.

World Education's Response to NALAP

Building on the well-established NALAP materials and methodology, and research on best practices for reading instruction, World Education is planning to implement a pilot teacher-training project in the Eastern Region of Ghana to support the government with improving teaching and learning of reading in the mother tongue in early primary school. The goal of the project is to provide kindergarten and first-grade teachers with the tools, skills, and support needed to successfully implement the NALAP curriculum, and ultimately improve reading proficiency rates in the early primary grades (World Education, 2014). If implemented appropriately, KG and P1 classrooms using NALAP curriculum would demonstrate the

following; sufficient allocation of time to reading (at least 40 minutes per language), the use of instructional approaches suitable to the selected mother tongue language, explicit and systematic instruction (transitioning from phonemic awareness to more complex skills such as comprehension) and assessment (World Education, 2014). Prior to launching their program, baseline research is needed to understand current knowledge, motivation and organizational gaps of teachers in target schools so that appropriate strategies can be developed for effective implementation.

World Education is a private voluntary organization. The mission of World Education is to bring hope through education to children and adults around the world. World Education has worked in more than 50 countries, and in Ghana for the past 30 years.

Knowledge, Motivation and Organizational Gaps from the Literature Review

This section describes the assumed knowledge, motivation and organizational causes that are barriers to 80% of teachers teaching reading in accordance with lessons in the NALAP teacher's guide. The causes were identified through background literature review and will be measured for validation. The World Education (2014) concept paper for the teacher-training program on mother tongue instruction in Ghana, past evaluations of teacher performance in implementing the NALAP curriculum in Ghana, global studies, and general best practices of effective reading instruction have informed the assumed causes identified in this section.

Knowledge and Skills Gaps

Research to date indicates that there is a gap in teachers' factual, conceptual and procedural knowledge of the five essential reading skills for beginning reading instruction (Akyeampong et al., 2011). Past evaluations found that teachers do not possess factual and conceptual understanding of phonics, and do not know how to appropriately apply instructional

aids for teaching phonemic awareness and phonics — two of the most crucial skills for acquiring reading fluency and automaticity (Edwards et al., 2005; NICHHD, 2000; Samuels, 2006; Akyeampong et al., 2011, Hartwell, 2010). The review also indicated that teachers do not know how to produce, manage and effectively utilize teaching aids as directed in the teacher's guide (Akyeampong et al., 2011, Hartwell, 2010). In prior classroom observations (Hartwell, 2010; USAID, 2011), teachers demonstrated limited skills in effective reading instruction such as child-centered instruction, using differentiated learning and flexible grouping strategies, providing opportunities for guided, independent practice or interaction with text, and engaging students in meaningful reading tasks that build comprehension skills. Researchers (Akyeampong et al., 2011) also found that many trainers were not proficient in the local languages used for instruction and lacked awareness about the crucial links of first and second language learning. Finally, it is inferred from the research that teachers may not know how to effectively plan lessons according to the milestones, assess student's reading skills, and conduct critical reflection in order to adjust their strategies to reach struggling learners. This demonstrates a lack of procedural knowledge.

Motivational Issues

There were six motivational issues found in the literature. They relate to self-efficacy, expectancy theory, or utility value. Past evaluations reported that teachers were not comfortable or conversant in using the teacher's guide, teaching aids or in teaching in the Ghanaian language (Hartwell, 2010), demonstrating a lack of self-efficacy. Akyeampong et al. (2011) found that teachers in Ghana were not always proficient in the Ghanaian language of instruction further hampering their self-efficacy.

Research shows that teachers have a tendency to overestimate their reading knowledge (Cunningham, Perry, Stanovich, K. & Stanovich, P., 2004) indicating a high-sense of self-efficacy. Newly qualified teachers, however, may have low self-efficacy due to ill-preparation in the teachers' college to deal with the challenges of local language instruction, large class sizes, or lack of resources (Akyeampong et al., 2011).

The literature review suggests that teachers may not expect their students to read fluently with comprehension until grade 4 or 5 (Akyeampong et al., 2011; Trudell, 2005). Additionally, in up to 20% of schools, the language selected for the school is not the familiar language of the teachers or students (Hartwell, 2010). Teachers, therefore, may not consider the NALAP materials useful or relevant to their student population (low utility value). Scanning interviews confirm that this is a problem in the Akuapem Twi speaking region.

Organizational Barriers

The literature revealed seven potential organizational barriers. Past NALAP evaluations identified four issues. First, overcrowded classrooms affect teachers' abilities to carry out interactive and encouraging activities (Hartwell, 2010). Secondly, there is lack of ongoing support and coaching with implementing the new methodologies in the classroom (Hartwell, 2010). Thirdly, teachers have had insufficient training to fully master NALAP bilingual and bi-literacy skills and concepts (Hartwell, 2010; USAID, 2011; Akyeampong et al., 2011). Fourth, teachers had challenges adhering to the 90-minute timetable. Research suggests that teachers' pre-service training in Ghana generally does not prepare them to teach reading comprehension (Trudell et al., 2012) in the early grades of primary school and professional development opportunities are limited (Akyeampong et al., 2011). A summary of the assumed knowledge causes from the literature review is presented in table 4.

Table 4.

Summary of Assumed Knowledge Causes from Literature Review

Knowledge	Assumed Cause	Lit. Review
K1	Teachers do not know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (F)	X
K2	Teachers do not know how to explicitly teach phonics and decoding skills (P)	X
K3	Teachers are not proficient in speaking and reading the Ghanaian language of instruction (F)	X
K4	Teachers do not know how to integrate the five skills to teach reading fluency and comprehension (P)	X
K5	Teachers do not know how to use teaching aids to foster learning of the five reading skills (P)	X
K6	Teachers do not know how to produce TLMs (P)	X
K7	Teachers do now know the crucial links of first and second language learning (C)	X
K9	Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones (P)	X
K12	Teachers do not know how to use child-centered pedagogies (e.g., guided-learning, small group work) (P)	X
Motivation	**Assumed Cause**	**Lit. Review**
M3	Teachers do not expect all their students read with comprehension by the end of P3 (Expectancy theory)	X
M4	Teachers are not confident teaching in the Ghanaian language or English (Self-efficacy)	X
M5	Teachers are not confident in using the teaching guide and teaching aids (self-efficacy)	X
M8	Teachers not confident in their ability to teach reading (Self-efficacy)	X
M9	Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work) (Self-efficacy)	X
M10	Teachers do not believe the NALAP material is relevant because the language selected for the region differs from students' mother tongue language (Utility value)	X
Organization	**Assumed Cause**	**Lit. Review**
O4	Insufficient training to master NALAP methodologies	X
O5	Overcrowded classes prevent teachers from using child-centered strategies	X
O6	Lack of ongoing support and coaching on NALAP implementation in the classroom	X
O7	Limited opportunities to exchange ideas with other teachers	X
O8	Insufficient courses on reading instruction in teaching college	X
O9	Limited opportunities for teaching reading during teaching practicum	X
O10	Challenges adhering to the 90-minute timetable	X

Note. See Table 5 for complete list of assumed causes in numerical order.

Summary and Conclusions

This chapter highlighted the importance of reading acquisition in the early grades and mother tongue instruction, low reading achievement in developing countries, and challenges with implementing local language policies in Ghana. It also provided an extensive overview of Ghana's attempt to increase reading performance through NALAP. Recent studies on the challenges of implementing the NALAP program were discussed and existing gaps in teachers' knowledge and skills were identified. The chapter concluded with the assumed knowledge, motivation and organizational obstacles that prevent teachers from teaching reading in accordance with the lesson plans in the NALAP teacher's guide.

The results of past NALAP studies and research on effective reading instruction clearly demonstrate that teachers require more training on explicit and integrated approaches to teaching reading concepts, teaching the local language, using differentiated instruction strategies, child-centered approaches, and use of assessment to inform instruction. Teachers also need assistance with preparing lessons aligned with the teacher's guide, milestones, and teaching aids. Once trained, they need ongoing coaching in the classroom. Ongoing training and assessment of teachers are important for identifying teachers' individual strengths and weaknesses, and addressing deficiencies in future training and coaching sessions. Finally, research shows that building professional learning communities is an essential component for improving teaching quality and ensuring fidelity to NALAP implementation.

CHAPTER 3:

METHODOLOGY

Purpose of the Case Study and Project Questions

The purpose of this case study was to conduct a gap analysis to determine the root causes of 80% of early grade reading teachers in Ghana not adhering to the national literacy curriculum. The gap analysis focused on identifying the underlying knowledge, motivation, and organizational causes of the teacher performance gap. While a complete gap analysis would focus on all stakeholders, for practical purposes of this case study, the teacher was the unit of analysis.

The questions that guided this case study are:

1. What are the knowledge, motivation and organizational barriers that inhibit 80% of first grade teachers from adhering to the set standards in the NALAP teacher's guide by October 2016? Set standards were defined as following the reading methodologies, the child-centered activities, the recommended use of teaching aids, the assessment units, and the allocated timeframes for the Ghanaian language and English, as prescribed in the NALAP teacher's guide.
2. What are the recommended knowledge, motivational, and organizational solutions for first grade teachers to effectively teach reading lessons in accordance with set standards in the NALAP teacher's guide?

Framework for the Study

The conceptual framework that guided the study is Clark and Estes' (2008) gap analysis framework. The framework provides a systematic analytical method to identify the gap between the actual performance and preferred performance of a group or organization. As shown in

Figure 1, the first steps in the application of the framework are identifying the goal, the current achievement and the performance gap. As described in Chapter 1, the goal of the Akuapim North district is for 100% of trained teachers to teach reading in accordance with NALAP. Past evaluations show that fidelity to implementation occurs in 20% of classrooms. Thus, the performance gap is 80%. The next phase of the framework is developing a list of knowledge, motivational, and organizational assumed causes that contribute to the performance gap. The assumed causes are then assessed through surveys, interviews, or other methods of data collection. To identify the root causes of the performance gap, the assumed causes are systematically juxtaposed against the findings and results to determine the extent of validation. In this case study, the findings and results were validated through data content analysis, triangulation, and a validation meeting (see Chapter 4). The final stage of the framework is developing research-based solutions, an implementation plan, and an evaluation framework (see Chapter 5). This chapter focuses on the second phase of the framework. Hence, the subsequent sections of this chapter provide a description of the assumed causes, how they were derived, and the methods for validation.

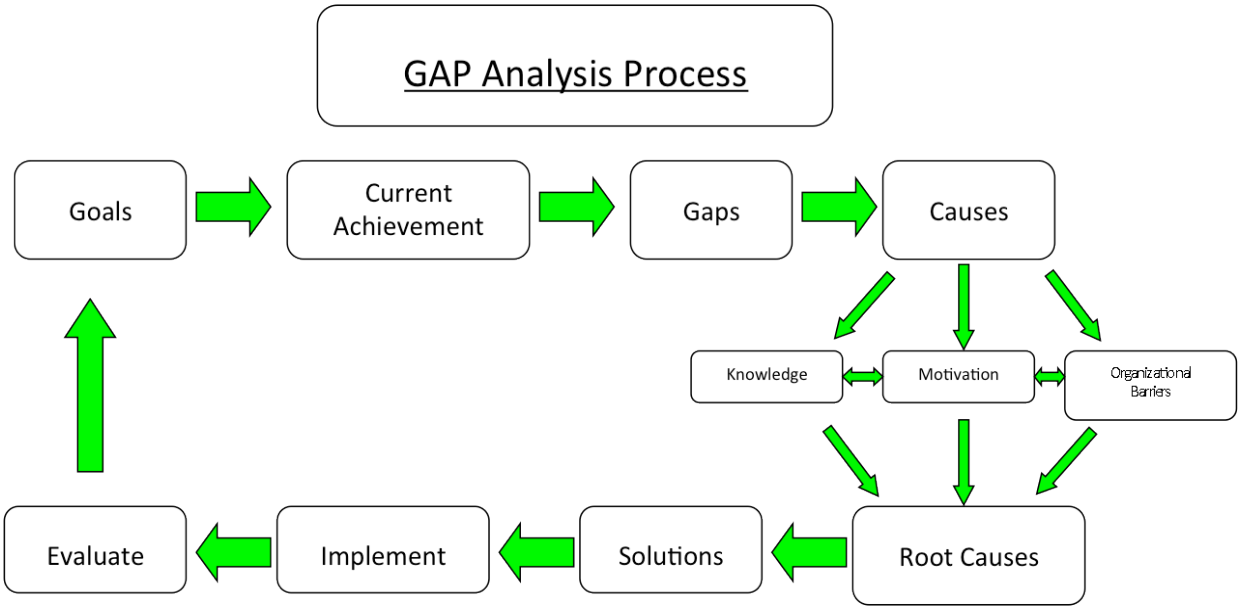


Figure 1. Gap analysis process

Assumed Causes of the Performance Gap

Introduction

Why is it important to validate assumptions of a performance gap? According to performance improvement specialists, Clark and Estes (2008), one of the main reasons performance gaps are not addressed is because consultants often mistakenly assume that they understand the key stakeholders' needs and can identify the root causes of the performance gap (Clark & Estes, 2008). In relying on expert opinion alone and not consulting the key stakeholders responsible for the gap, experts inadvertently omit the true causes of the performance problem. Presumed causes, erroneously identified and not validated, inevitably result in ineffective solutions. This could explain why more than 60% of organizational change strategies undertaken are quickly abandoned (Druckman & Bjork, 1991, 1994; Druckman, Singer, & Van Cott, 1997). To avoid this predicament, a thorough investigation into the causes of performance gaps should be conducted. The causes should be identified through at least three sources: (a) scanning

(informal) interviews with stakeholders, (b) learning, motivation, and organization theory and (c) literature review on the specific topic under question. The assumed causes identified through scanning interviews and learning theories are presented in this chapter. Those found through the literature review were discussed in Chapter 2. A summary of the sources for identification of KMO assumed causes is located in Appendix A.

Scanning Interviews

Scanning interviews are observations formed from informal conversations and observations in the organization of study. In early 2014, the researcher collected preliminary data during a USAID final project evaluation, conducted in 10 regions and 10 schools in the northern and southern regions of Ghana. Therefore, some of the assumed causes listed below were identified through interviews and focus group discussions with teachers, principals and district education officials during the 2014 evaluation. The researcher also interviewed staff currently working on the World Education teacher-training pilot project in Ghana to identify current challenges in the district of study. The assumed causes have been organized according to the KMO framework under knowledge, motivation and organizational categories.

Knowledge and skills. Based on the 2014 evaluation, teachers, principals and district education officials interviewed in Ghana indicated that teachers in the early grades of primary school do not know how to teach essential reading skills, such as phonemic awareness and decoding. There are two assumed factual knowledge gaps. One is that teachers are not aware of the five key components of reading. The second is that teachers do not know the standards and milestones for reading and bi-literacy in KG and P1. Another problem related to a procedural knowledge gap is that, teachers do not know how to adequately assess their students reading

progress. Using Anderson and Krathwohl's (2001) cognitive process dimensions, teachers' knowledge of the five reading skills and application of these principles will be assessed.

Motivation. There are several factors affecting teacher motivation related to opportunity costs. First, frequent teacher absenteeism, including for the head teacher, was reported as a major challenge to improving students' reading skills. The presumed cause is that teachers do not place a high value on the teaching profession due to the profession's low economic and social status. For example, due to the low salary, teachers may place a higher priority on other productive tasks, such as attending to the farm or selling goods on market day. Another reason for teacher absenteeism may be the high transportation costs for teachers living in towns who must commute to remote schools. Therefore, the cost value of engaging in teaching is higher than performing other intrinsically or extrinsically rewarding tasks closer to home.

Another motivational issue related to active choice is the language selected for NALAP instruction. Scanning interviews revealed that the language selected for instruction in some areas differs from students' mother tongue. When this is the case, teachers can choose to not follow the curriculum and may decide to use English, a local language, or to alternate between two languages (code-switch) to facilitate learner comprehension.

Organization. Organizational barriers, such as inadequate processes and material resources, can prevent the achievement of performance goals (Clark & Estes, 2008). Teachers in most districts interviewed, often reported a lack of appropriate and sufficient teaching and learning materials as the greatest challenge they faced in improving reading performance. First, teachers do not have essential teacher's guides and student textbooks to teach language courses effectively, and/or the materials they have are not linked to the NALAP curriculum. Secondly, there is a lack of teaching aids, such as big story/picture books, audio/visual equipment,

conversational posters, and alphabetic cards. Thirdly, with increased school enrollment in grade 1 due to community outreach efforts, the recent addition of pre-K to public schools, and enrollment drives, teachers are burdened with large class sizes (e.g., 100 students in P1), which may prevent teachers from using child-centered approaches.

Another school-wide performance problem related to the NALAP curriculum is an inadequate assessment system to measure student reading progress. This problem stems from two possible causes that have been identified by World Education (2014). The first is that the content in the teacher's guides does not match the desired methodology, standards and milestones for reading, speaking, and listening at each grade level. Therefore, the schemes of work and lesson plans may be out of alignment with the curriculum. Pedagogical approaches and teacher's guides need to match curriculum standards in order to adequately assess students and improve student-learning outcomes (Akyeampong et al., 2011). The second assumption is that teachers have had inadequate training to master the new reading methodologies, materials, and assessment strategies. Some teachers may not have received any training on the NALAP curriculum standards, while others who were trained, may not have been explicitly taught how to meet the language benchmarks. When teachers' knowledge is inadequate or misaligned with the curriculum goals, it can result in chaos and inefficiency (Clark & Estes, 2008).

Finally, the language selected for instruction may not be the pupils' first language. This barrier would significantly contradict the aims of the program and impact results.

Learning and Motivation Theory

This section discusses the assumed causes that were generated based on principal learning and motivation theories. Although they may not have been observed in the school

setting, these factors need to be examined due to the critical role they play in performance outcomes.

Knowledge and skills. Related to Anderson and Krathwohl's (2001) cognitive process dimensions, teachers may not know how to "evaluate" students' progress and "apply" suitable strategies to reach struggling readers. Thus, the assumed cause of the performance gap is that teachers do not have procedural knowledge to assess student's learning and differentiate their instruction accordingly.

Secondly, the literature review suggests that teachers may not recognize the importance of learning to read in the mother tongue language for acquiring foundational phonemic awareness skills, which can be transferred to second language learning. These concepts will be assessed using Anderson and Krathwohl's (2001) Bloom's taxonomy, specifically assessing whether teachers "recognize" the importance of bilingual education.

Motivation. Clark and Estes (2008) have identified three facets of motivation that may affect sustained activity towards a goal: active choice, persistence, and mental effort (Clark & Estes, 2008). Active choice is when the intention to pursue a goal is replaced by action, persistence is when one continues in the face of obstacles, and, mental effort is when people work smarter and develop novel solutions to sustain an effort (Clark & Estes, 2008). When the three are achieved, the result is increased performance. Conversely, when there is lack of choice, persistence or mental effort, the result is underachievement of the performance goal. According to Pintrich's (2003) design principles, the underlying causes of motivational performance problems are due to self-efficacy, attribution, interest, and goal orientation. Both Pintrich's (2003) and Clark and Estes' (2008) motivational theory frameworks have guided the identification of the following motivational causes.

Based on analysis of the frameworks and assumed causes, the possible underlying causes of teachers' underutilization of the bilingual NALAP curriculum are likely due to factors related to utility value, self-efficacy, intrinsic value, and attribution theory. First, teachers may not see the value of teaching reading in the mother tongue (utility value). Perhaps, they hold a higher value of the English language. Secondly, teachers may not expect all their students to become proficient in reading by the end of P3 (expectancy theory). Teachers interviewed in Africa believed that students should not be expected to read fluently until grade 4 or grade 5 (Akyeampong et al., 2011; Trudell, 2005). Thirdly, teachers may not believe that they are capable of teaching in the mother tongue language or English because they are not fluent or confident (self-efficacy). Fourth, teachers may not gain any sense of intrinsic value in teaching reading and hence do not enjoy it. Finally, they might believe their students' acquisition of reading proficiency is largely dependent on factors beyond the parameters of their control (attribution theory). For instance, overcrowded classes may be one barrier that prevents teachers from fully executing the teaching methods and reading activities in the teachers' guide.

Organization. There are no organizational causes presumed based on the theories.

Summary

In summary, there are a total of 34 assumed causes, comprised of 12 knowledge causes, 10 motivational causes, and 12 organizational assumed causes. See Appendix A for a list of all assumed causes generated from the literature review, scanning interviews, and learning theories.

Validation of the Causes of the Performance Gap

The following sections describe how the assumed causes were assessed to determine their degree of validation.

Validation of the Knowledge Causes of the Performance Gap

Anderson and Krathwohl's (2001) knowledge types and cognitive processes guided the selection of instruments and questions for assessing the assumed knowledge causes.

Validation of factual knowledge assumed causes. The assumed teachers' knowledge gaps were assessed through a teacher survey and classroom observation. In the teacher survey, the skills of "list" and "check" in Anderson and Krathwohl's (2001) knowledge dimension were assessed. To assess teachers' knowledge of the five key reading skills, teachers were asked to "list" the essential reading skills children need to learn to be able to read fluently. The reading skills were also assessed during the classroom observation.

To measure language proficiency in the Ghanaian language, teachers were asked to rate their speaking, reading and listening skills against levels of language competency (e.g., fluent, native, proficient, limited, etc.).

To assess whether teachers know the NALAP milestones, during the classroom observation, the researcher asked the teacher how the lesson relates to the milestones in the NALAP teacher's guide.

Validation of conceptual knowledge assumed causes. To determine whether teachers know the crucial links of first and second language learning, the researcher assessed their ability to "recognize" the concept (Anderson & Krathwohl, 2001) by asking teachers in the teacher survey whether they agree with the following statements:

a) It is more important for children to learn to read in their mother tongue before learning a second language (Strongly disagree, disagree, agree, strongly agree)
b) It is better for children to learn English first when they enter school (Strongly disagree, disagree, agree, strongly agree).

Validation of procedural knowledge assumed causes. Using Anderson and Krathwohl's (2001) cognitive process dimension, whether teachers can apply reading principles (e.g., explicitly teaching phonics and decoding skills), teaching aids, differentiated learning methods, and child-centered pedagogies were assessed through a classroom observation. During the classroom observation, the researcher recorded activities conducted, types of instructional aids used for teaching, and the amount of time spent on meaningful tasks. The instructional activities observed on a checklist included phonics and decoding skills, such as guiding students in letter sound identification, syllable reading, familiar word reading, and blending or segmenting words. Teaching methods were also recorded to determine whether teachers are applying interactive instructional methods (e.g., guided practice of reading and comprehension, small group, pair work) or whether they were using rote-learning strategies, such as repetition or code switching. In the teacher interview and teacher survey, teachers were further asked to provide specific examples of reading teaching methods they have applied.

To assess the presumed cause that teachers do not know how to integrate the five skills, the researcher observed a reading class and recorded the skills taught on a classroom observation checklist. The researcher reviewed the results to "determine" whether the teacher was able to teach both lower-level and higher-level skills per Anderson and Krathwohl's (2001) taxonomy.

To be effective, teachers must be able to monitor and adjust their teaching approaches (Ambrose, Bridges, Lovettt, DiPietro, & Norman, 2010) to the student's individual and collective learning pace. During in-depth interviews, teachers were asked the following question to measure teacher effectiveness: "What types of strategies do you use to support struggling learners?" In the teacher survey, teachers were provided with a scenario of two different student profiles (a fast reader and a slow reader) and asked how they would adapt their approach to meet

each learner's needs. The survey also included the following question, "How much time do you spend critically reflecting on your reading lessons per day?"

To assess whether teachers know how to adequately assess their students' reading progress, they were asked the following interview question: "How do you typically keep track of students' reading progress?"

One of the assumed causes is that teachers do not know how to produce teaching and learning materials (TLMs). To assess this assumed cause, teachers were asked during the interview, "What types of TLMs do you currently use to teach reading? How did you obtain these TLMs?" If teachers did not provide sufficient information, then a follow-up question was, "Did you produce them or were they provided by the government?"

Whether teachers are able to carry out lesson planning in alignment with the teacher's guide and NALAP milestones was determined through document analysis. The researcher collected the teacher's lesson plan and teacher's guide, and then reviewed the lesson objectives to determine whether they directly correlated with the milestones. By comparing lesson objectives in teachers' lesson notes with reading and bi-literacy milestones for KG1, KG2, and P1 in the teacher's guide, the researcher determined whether the teacher fully understood NALAP objectives and competencies. See Appendix B for a summary of the assumed knowledge causes and validation methods.

Validation of the Motivational Causes of the Performance Gap

This section describes how each assumed motivational cause was assessed.

Validation of motivational assumed causes. The first assumed cause, teachers' low value of the teaching profession, was validated through a survey and interview. In the survey, teachers were asked to rank the social status of teachers as high, average, low or poor (compared

to similar professions). Secondly, teachers were asked if they agreed with the following statements:

1. Survey item: The costs associated with teaching (e.g., travel time, out-of-pocket expenses, etc.) reduce teachers' motivation to attend school regularly (strongly agree, agree, strongly disagree, disagree).
2. Survey item: I think teachers should come to school regularly no matter what commute times or costs, are incurred by the teacher (strongly agree, agree, strongly disagree, disagree).

This assumption was further verified through the following interview question:

1. Interview question: What barriers do teachers face, that prevent them from attending school regularly?

The second assumed cause identified through learning theory is that teachers do not value teaching in the mother tongue language. This cause was assessed through the following items:

1. Interview item: How important is it for students to learn how to read in their mother tongue?
2. Survey item: (a) I believe it is important for children to learn how to read in their mother tongue language; (b) I believe it is better for children to learn English as soon as they enter school.

The assumed causes for why teachers do not use the bilingual NALAP curriculum and materials were validated through the following survey and interview items:

- Possible cause 1: Teachers do not enjoy teaching reading (intrinsic value).
    - Survey item: I enjoy teaching my students how to read books.

- Possible cause 2: Teachers may not believe the NALAP methodology is effective because the language selected for the region differs from the students' mother tongue language.
    - Interview question: How many pupils speak the NALAP language as their mother tongue? (the majority, half, less than half)
    - Interview question: What do you think are the strengths and weaknesses of the NALAP methodology? Have you experienced any challenges with applying the NALAP materials in the classroom?
- Possible cause 3: Teachers do not expect all their students to read with comprehension by the end of P3 (expectancy theory).
    - Survey item: I do not expect all students to be able to read with comprehension in the local language by the end of P3.
    - Survey item: Learning reading comprehension is more appropriate for upper primary than the early grades.
- Possible cause 4: Teachers are not confident teaching in the Ghanaian language or in English (self-efficacy).
    - Survey item: I am confident in my ability to read and write the mother tongue/English language well. (strongly agree, agree, strongly disagree, disagree).
    - Survey item: How confident do you feel about your ability to teach listening, reading and writing skills in the Ghanaian language? (Very confident, confident, not very confident, not at all confident)

    - Survey item: How confident do you feel in your ability to teach listening, reading and writing skills in the English language? (very confident, confident, not very confident, not at all confident).
- Possible cause 5: Teachers believe student acquisition of reading proficiency is largely due to factors beyond their control (attribution theory)
    - Survey item: Student proficiency in reading is largely dependent on my teaching ability. Students' reading proficiency is largely dependent on other factors beyond the teachers' control.
    - Interview question: Does your classroom size have any effect on your ability to fully teach the reading methods?

The assumed cause for why teachers do not use mental effort to consistently apply the NALAP principles is that they are not confident in their ability to teach reading. Through a Likert-scale survey, teachers were asked, "How confident do you feel about your ability to teach reading?" (very, somewhat, enough, not very, not at all).

The last two assumed causes assess persistence. These were validated through the following survey and interview items:

- Possible cause 1: Teachers are not conversant in using the teacher's guide and teaching aids to teach.
    - Survey item: "How confident do you feel in your ability to use the teacher's guide and relevant teaching aids to teach reading?" (very confident, confident, not very confident, not at all confident)

  - Interview question: "What do you think are the strengths and weaknesses of the NALAP methodology?" "Have you experienced any challenges with applying the NALAP materials in the classroom?"
- Possible cause 2: Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work, etc.).
  - Survey item: (a) "How confident do you feel in managing classrooms?" (very, somewhat, enough, a little, not at all); (b) "How prepared are you to address the needs of struggling learners?" (very, somewhat, enough, a little, not at all).
  - Interview question: "What types of strategies do you use to support struggling learners?"

See Appendix C for a summary of the assumed motivational causes and validation methods.

Validation of the Organizational Causes of the Performance Gap

This section describes how each assumed organizational cause was assessed.

Validation of organizational causes. The first assumed cause of poor teaching quality is insufficient teacher's guides and learner textbooks. This cause was validated through the following close-ended survey questions:

- Survey item: "Do you have a teacher's guide?" (yes, no). There should be one teacher's guide per teacher.
- Survey item: "What is the pupil textbook ratio? (one per student, one per two students, one per three or more students)." The core textbook ratio should be 1:1.

To assess the lack of supplementary teaching aids and reading resources appropriate for the NALAP curriculum, the assumed causes were validated during the post-classroom observation teacher interview. The following questions guided teacher interviews:

- Interview question: What kinds of teaching aids do you use to teach reading classes? (Verify through asking to see examples of materials and where they are stored.)
- Interview question: Do you have supplementary reading books for students? (If yes, verify through observation whether the books are accessed through a reading corner in the classroom, library or purchased by parents.)

Additionally, the teacher's guide was reviewed to determine whether the five key reading skills and methodology, are explicitly described and easy to follow.

The alignment of the teaching materials with the milestones was assessed through a document analysis. The researcher collected the lesson plan and teacher's guide of the teacher selected for the classroom observation. She reviewed the lesson objectives to determine whether they explicitly state the milestones.

The following interview questions were asked to validate the presumed cause of insufficient training to master the NALAP methodology and materials:

- Interview question: Have you participated in any training on the NALAP curriculum? If yes, when? What did you learn?
- Interview question: Was the training sufficient to give you the skills and knowledge you needed to apply the lessons in the classroom? Why or why not?
- Interview question: Is any additional support necessary, to help you successfully use the NALAP teacher's guide and TLMs? If yes, what types of support?

To measure whether teachers have received coaching or mentoring with implementing NALAP methodologies in the classroom, the following interview question was asked:

- Interview question: Have you received any coaching, mentoring or assistance with implementing the reading methods and materials in the classroom? If yes, from whom and how often?

To determine whether overcrowded classrooms presented a barrier, the researcher collected data from the teacher regarding the number of students enrolled in the class and additionally took note of observed constraints during the classroom observation.

The challenge of adhering to the 90-minute timetable was assessed during the classroom observation. The researcher simply recorded the start and end times of the language class.

Whether teachers were able to participate in professional learning communities was assessed through the following open-ended and multiple-choice survey and interview questions:

- Survey item: "Have you attended professional development meetings?
- Survey item: What do you generally do at the meetings? (share ideas, practice lessons, reflect critically on teaching, develop schemes of work, other _____)
- Interview: "Is there time built into the day or week for critically reflecting on your teaching lessons?"

Teacher level of preparation in reading methodology was assessed through the following interview questions:

- Interview question: What courses related to reading instruction did you take at the teacher college? Were any courses dedicated to reading instruction in early childhood (KG-P1)? If yes, what did you learn?
- Interview question: Did you participate in a teaching practicum during your pre-service teacher training? If yes, how many hours did you spend teaching reading or language classes? What grades did you teach?

The last assumed cause, inappropriate language of instruction, was validated during the interview. Teachers were asked, “How many pupils speak the NALAP language of instruction as their mother tongue?” (the majority, half, less than half, none).

Summary

A summary of the assumed organizational causes and validation methods is located in Appendix D.

Participants

Five public schools selected for the World Education teacher-training project agreed to participate in the case study. Within each school, one KG1 teacher, one KG2 teacher and one P1 teacher were selected for surveys, interviews and classroom observations. In total, all 15 teachers (5 KG1, 5 KG2, and 5 P1) enlisted were successfully engaged in the case study.

Although the World Education project will focus specifically on training first grade teachers, the rationale for including teachers in KG1 and KG2 were twofold. First, it helped to expand the sample size from five teachers to 15, allowing the researcher to gain greater insights into the range of reading methodologies applied and the challenges faced. Secondly, understanding what students are taught in KG1 and KG2 would indicate how well-prepared students are for Grade 1 and would help to inform the design of the training program. For instance, students should be learning phonemic awareness and letter identification (e.g., the alphabet). If these skills were not taught, World Education could integrate them into their reading program.

As described in Chapter 1, World Education field staff selected the schools for the case study based on pre-established criteria. The researcher selected the teachers for the study. In

most cases, there were only two teachers per grade sharing the same classroom. Thus, the researcher randomly selected one of the two teachers or observed the lead teacher.

It is also important to mention that teachers' counterparts, one school principal, and several district education administrators participated in the validation meeting. During the meeting, the teacher participants completed a questionnaire asking them to confirm the key findings. Therefore, while the sample size for the interviews, surveys and classroom observations is 15, the sample size for the validation meeting questions is 20.

Procedures

To validate the knowledge, motivation and organizational assumed causes, a qualitative case study was carried out. The data collection methods included in-depth interviews, teacher surveys, classroom observations, and document review. Qualitative data were collected through open-ended questions on the teacher interview, the teacher survey and classroom observation, as well as through document analysis. Quantitative data were collected through Likert scale or multiple choice questions on the teacher survey and a checklist of skills observed on the classroom observation survey.

All instruments and protocols were specifically designed to assess the KMO assumed causes. For guiding the teacher interviews, a semi-structured interview guide was developed to assess the assumed knowledge, motivational and organizational causes. The interview guide included 20 open-ended questions. A paper-based survey was constructed to assess the knowledge and motivational assumed causes. The survey included 22 items, which consisted of a mix of multiple choice, open-ended and Likert scale questions. For the document analysis, a document analysis checklist containing the Ghanaian milestones for bi-literacy and bilingual speaking and listening in KG and Grade 1, was developed. This tool was used as a reference

when reviewing the NALAP materials (Ghanaian standards and milestones, teacher's guide, and lesson plan). A classroom observation instrument was designed to record teaching and learning activities in accordance with the essential reading skills and milestones. It also assessed the organizational barriers observed. Comparing the classroom observation tool's questions and structure, with a classroom observation tool that was developed and tested under the NALAP final project evaluation, validated the classroom observation tool. All tools were reviewed for accuracy by World Education staff familiar with NALAP and field-tested at a pilot school prior to data collection.

Data Collection

Surveys

Teachers in KG1, KG2 and P1 completed the survey in Appendix E (See Section B). It was administered outside of the classroom, and took approximately one hour to complete. As a token of appreciation for teachers' voluntary participation in the survey, respondents received a small snack.

Interviews

All 15 teachers responded to the 20 questions in the interview guide (See Appendix E, Section A). The interviews took place after the classroom observation. One hour was allocated for each interview, which allowed time for introductions and follow-up questions.

Document Analysis

Using the document analysis checklist and protocol in Appendix E (Section C), the following documents were analyzed:

- NALAP teacher's guide and pupil textbook
- Ghanaian standards and milestones of bi-literacy

- Ghanaian milestones for bilingual speaking and listening
- Kindergarten lesson plan for Ghanaian language and English
- First-grade lesson plan for Ghanaian language and English

The teacher's guide was reviewed to determine whether the five reading skills, reading methodology, and milestones were explicitly described and easy to follow. The lesson plan was reviewed during classroom observations and analyzed, to assess whether the lesson objectives aimed to achieve the reading skills and milestones. The researcher compared the lesson objectives with the bi-lingual and bi-literacy milestones in the teachers' guide to assess alignment of lessons with curricular objectives.

Classroom Observations

In each school visited, a classroom observation was conducted in one KG1 classroom, one KG2 classroom, and one P1 classroom. The classroom observation tool is located in Section D of the data collection instrument and protocol guide (see Appendix E). The classroom observation protocol included a checklist of the key reading skills and milestones to assess the assumed knowledge causes. It also included open-ended questions for reflection during the observation as a way to inform the organizational barriers. The observations were recorded directly on the classroom observation checklist and questionnaire. The researcher observed the class for 30-45 minutes. Prior to the observation, Section A (classroom demographic information) was recorded. In Section B, observed activities were recorded. Section C was completed post observation. It took approximately one hour to complete the entire classroom observation form.

Role of Investigator

The role of the investigator in this study is one of a consultant recruited to conduct a problem-solving investigation of the schools, in order to identify possible solutions for improving teachers' performance and enhancing reading outcomes. To mitigate any misconceptions about the purpose of the research, the researcher worked with World Education to inform the school's head teacher and teachers in advance, about the nature of the study. While the information will be used by World Education to improve their project's performance, it is also hoped that the information will be shared with the Ministry of Education to inform administrators of validated causes contributing to the gap in achieving bilingual literacy goals across the nation. So that the information can be used to inform project or policy decision-making, the responses were kept confidential. Each participant was assigned a code. Participants were also informed of the voluntary nature of participation and their right not to participate. However, given the small sample size of the schools selected, steps were taken to obtain permission well in advance of the study to facilitate data collection. Additionally, to ensure protection of the Ministry of Education, USAID, and World Education intellectual property, only documents publicly available on the worldwide web or authorized by World Education were used as research material. Results of the study were shared with all teachers interviewed during a validation meeting to confirm accuracy of interpretation. Any discrepancies in the findings were addressed and corrected prior to final data analysis and reporting of the results in Chapter 4.

Data Analysis

Data analysis consisted of several steps. First, descriptive analysis was applied for surveys and interviews. The individual responses were aggregated by each question corresponding with the KMO cause. Next, the interview data was crosschecked with the survey

data to identify any inconsistencies. Any issues identified were raised at the validation meeting (see Chapter 4) and corrected. The overall perception of NALAP's strengths and weaknesses were also identified and shared at the validation meeting. After the teachers confirmed the survey and interview findings (see Chapter 4), all recorded data from the interviews, surveys, classroom observations and document analysis were consolidated into an Excel spreadsheet to assist with validating the assumed causes. Organized by the KMO framework, the assumed causes were juxtaposed against the results and findings from multiple sources to determine validation. A justification for each cause validated or not validated was recorded during data analysis, directly into the spreadsheet. Finally, corresponding charts were developed for reporting of results. The following strategies were applied for increasing the validity and trustworthiness of the results:

1. All data was validated through triangulation – interview and survey results were crosschecked with information gleaned from the document analysis and classroom observations to increase the validity of the study.
2. Only school names and grades were recorded in the database to increase anonymity of teachers, and responses were aggregated through descriptive statistics.
3. The data was stored on a password-protected computer in a locked office.
4. Preliminary interpretations of the data collected were shared with the teachers interviewed to ensure that emerging themes reflected both the majority viewpoint and their individual response (see Chapter 4 for details).

Limitations and Delimitations

There are three delimitations of the case study. First, rather than random assignment, World Education selected the schools based on project selection criteria. Second is the small sample size - five schools in the Akuapim North district of Ghana. As a result of the purposeful

sampling method and small sample size, the findings are context specific and cannot be generalized. Third, the study is further delimited to examining one key stakeholder group's experience: teachers in grades KG-P1. While other stakeholders' experiences are important to the organization, an in-depth investigation lies outside the scope of the study.

There are also several limitations inherent in the design of this study. First, the study is limited by the social desirability bias, resulting in participants providing answers they believe to be socially desirable rather than a true representation of their experience. This is the case both in interview and survey contexts. Secondly, the study is limited by the fact that it assumes that all participants understood and interpreted the interview and survey items in the manner intended. The results in Chapter 4 showed that due to language barriers, some questions were misinterpreted and responses were contradictory. However, the contradictions were clarified during the validation meeting through follow-up, one-on-one interviews with individual teachers and through group discussions. Thirdly, the classroom observations may have influenced teachers' behavior in the classroom due to the Hawthorne Effect. Because of this external variable, the findings may not reflect a typical class since teachers may have been prepared or might have taught a previous lesson. Teachers were also in the middle of preparing for national examinations, which could have caused them to focus on specific aspects of the lesson. Finally, the statistical analysis is limited to producing correlational, not a causational relationship. However, triangulation of data sources does help to strengthen the validity of the findings.

CHAPTER 4:

RESULTS AND FINDINGS

The purpose of this section is to report the results and findings of data collection. Multiple quantitative and qualitative data were collected through surveys, interviews, classroom observations, and document analysis. The data were analyzed and triangulated to understand the knowledge, motivation, and organizational challenges teachers encounter in implementing the NALAP curriculum. The results were then compared with the assumed causes of the knowledge, motivation and organizational gaps described in Chapter 3 to determine whether they were valid and thus require solutions, or were invalid and should be eliminated as the root cause of the underlying performance gap.

This chapter is organized according to the KMO framework and consists of the following sections:

- Description of participating stakeholders and data collection methodology;
- Results and findings for knowledge causes;
- Results and findings for motivational causes; and,
- Results and findings for organizational causes.

Each section highlights the assumed causes that have been validated, those that have not been validated, and any new causes identified during fieldwork. The chapter concludes with a summary of the validated causes that informed the development of solutions in Chapter 5.

Participating Stakeholders

Five public schools selected for the World Education teacher-training project agreed to participate in the case study. Within each school, one KG1 teacher, one KG2 teacher and one P1 teacher were selected for surveys, interviews and classroom observations. In total, all 15 teachers

(5 KG1, 5 KG2, and 5 P1) selected were successfully engaged, indicating a 100% response rate. Fourteen of the 15 teachers were qualified teachers, meaning they had at least a teaching diploma or higher level of education. Participating teachers had an average of 13 years of experience in the teaching profession, and had spent an average of five years teaching at their current school.

Data Collection Methodology

Table 5 shows the in-country data collection schedule. The dissertation fieldwork took place from December 8 to December 18, 2014 in the Akropong town of the Akuapim North District within the Eastern region of Ghana.

Table 5.

Data Collection Schedule

Date	Activity
12/8 – 12/12	Data collection in five primary schools
12/13 – 12/17	Data entry, cleaning and analysis Preparation of findings for validation meeting
12/18	Validation meeting

The researcher visited one school per day and spent a half-day at each school to complete the data collection activities. Due to the overlap with the national exam, the sequence of activities varied per school. Generally, the researcher observed the literacy class upon arrival to the school and interviewed the teacher observed. She then met with each teacher individually until each teacher in kindergarten 1 (KG1), kindergarten 2 (KG2), and first grade (P1) were

interviewed. During the school lunch break, teachers were invited to complete the survey. The researcher and a local assistant oversaw the survey administration ensuring questions were understood and completed without influence from peers. Translation was provided as needed. At the end of the day, teachers were appreciated with a small snack kindly donated by World Education.

Data Analysis. Between December 13-17, 2014, data entry and analysis were conducted in preparation for the validation meeting. This initial sweep of data consisted of several activities. The researcher recorded raw notes from the classroom observations and interviews in a Word document following the sequence of questions and KMO coding. An Excel data entry template was developed for capturing and calculating frequency of survey and interview responses. All data was entered and crosschecked for consistency. Missing responses were highlighted. Initial KMO findings were recorded for sharing at the validation meeting.

The validation meeting took place at the Akropong District Education Office on December 18, 2014. All teachers who participated in the survey, interviews, and observations were invited, as well as their assistants or co-teachers. District Education Officers, including the Kindergarten Coordinator and Literacy Focal Person, attended the debriefing session. During the meeting, the researcher shared the initial KMO gaps identified, the strengths and weaknesses of NALAP, and noted any contradictory findings. She then met individually with each teacher interviewed and surveyed to review any missing or conflicting responses.

By the end of the field visit in Ghana, the researcher felt confident that she had a complete set of data validated by participants and their peers. Upon returning to the U.S., the researcher performed data entry of classroom observations and document analysis findings, triangulation of results, comparison of findings with assumed causes to determine degree of

validation, and organized the data into visual graphics for reporting results. The researcher determined that a cause was validated if the findings were consistent across more than one source, or if the majority of teachers confirmed the findings during the validation meeting. The next section reports the output of the analysis per the KMO framework.

Results and Findings for Knowledge Causes

There were 12 assumed knowledge causes. Table 6 shows that seven causes were validated and five were not. There was one new knowledge cause identified.

Table 6.

Knowledge Gaps Validated, Not Validated and New Causes

Category	Assumed Cause	Validated	Not Validated	New Causes
Factual	Teachers do not know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension	√		
Factual	Teachers do not know the standards and milestones for reading and bi-literacy in KG and P1	√		
Factual	Teachers are not proficient in speaking and reading the Ghanaian language		X	
Procedural	Teachers do not know how to integrate the five skills to teach reading fluency and comprehension	√		
Conceptual	Teachers do not know the crucial links of first and second language learning		X	
Procedural	Teachers do not know how to explicitly teach phonics and decoding skills	√		
Procedural	Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones	√		
Procedural	Teachers do not know how to use child-centered pedagogies (e.g., guided-learning, small group work	√		
Procedural	Teachers do not know how to use teaching aids to foster learning of the five reading skills		X	
Procedural	Teachers do not know how to produce TLMs		X	
Procedural	Teachers do not know how to apply metacognitive (critical reflection) skills and differentiated instructional methods		X	
Procedural	Teachers do not know how to develop lessons according to the integrated approach			√
Procedural	Teachers do not know how to effectively assess their students' reading progress	√		

Following the KMO framework, the findings and results have been grouped into three knowledge categories: factual, conceptual, and procedural.

Factual Knowledge Gaps

Validated factual knowledge causes. According to results in Table 7, two assumed factual knowledge causes were validated.

Table 7.

Validated Assumed Factual Knowledge Gaps

Category	Assumed Causes (Validated)	Instrument	Know	Don't Know
Factual	Teachers do not know the five key elements of effective reading instruction (phonemic awareness, phonics, fluency, vocabulary, and comprehension)	Survey	0	100%
Factual	Teachers do not know the standards and milestones for reading and bi-literacy in KG and P1	Document Analysis	0	100%

The first assumed cause, that teachers do not know the five key elements of effective reading instruction, was validated through the survey question: "*What are the essential reading skills children need to learn to be able to read fluently?*" As illustrated in Figure 2, none of the 15 teachers identified all five skills correctly. Four teachers (3 P1 teachers and 1 KG2 teacher) were familiar with phonics. One teacher was familiar with phonemic awareness. Eight teachers provided an incorrect response not associated with reading skills and two left the question blank.

In total, of the 15 responses, two-thirds of (10) teachers did not know any key elements of effective reading instruction and none knew all five.

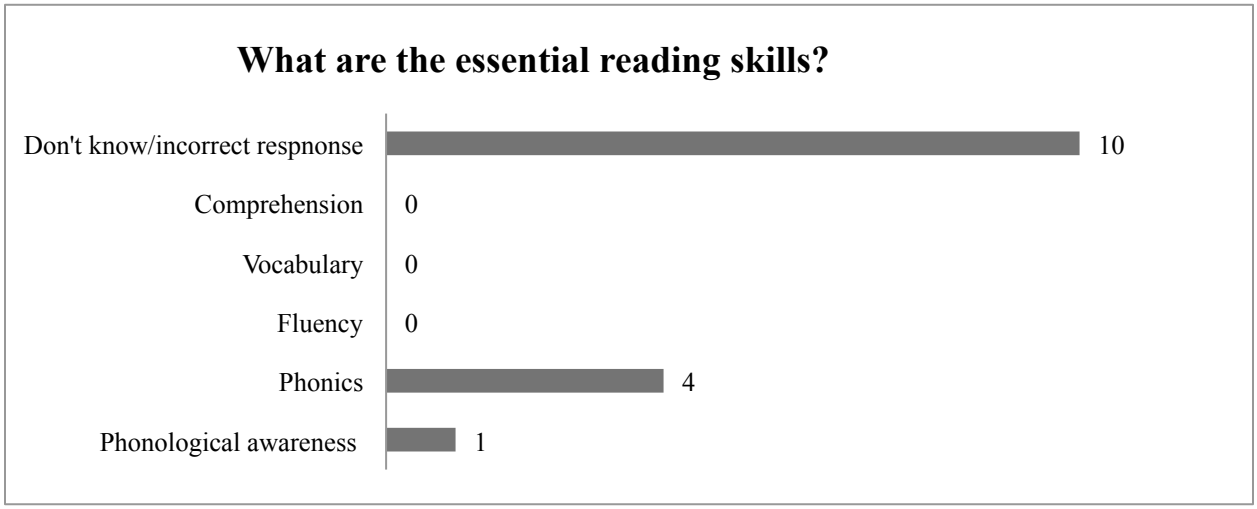


Figure 2. Survey results*:* What are the essential reading skills?

The second factual knowledge assumption is that teachers do not know the standards and milestones for reading and bi-literacy in KG and P1. This assumption was verified through document analysis. Teachers' lesson plans were reviewed to determine whether the standards and milestones were specifically stated. None of the lesson plans included standards or milestones. Therefore, this assumption is valid.

Factual knowledge causes not validated. Past evaluations indicated that teachers might not be fluent or proficient in the Ghanaian language. The survey findings did not validate this assumption. On average, 82% of teachers rated themselves as proficient, fluent, or native in speaking and reading the Ghanaian language. About 20% of teachers (18%) indicated limited ability to write in Akuapem Twi (see Table 8). Therefore, this assumption is not validated since the majority of teachers can read and speak the Ghanaian language well.

Table 8.

Teacher Proficiency in Ghanaian Language of Instruction

Assumed Cause	Survey item	Response	Frequency	Percent
Teachers are not proficient in speaking and reading the Ghanaian language (KF3)	Rate how well you speak, read and write the NALAP language selected for the medium of instruction	Native	6	13%
		Fluent	25	56%
		Proficient	6	13%
		Limited	8	18%
		Not at all	0	0%

Conceptual Knowledge Gaps

The assumed conceptual knowledge gap that teachers do not know the crucial links of first and second language learning was not validated. The finding was revealed through a Likert scale survey question (See Table 9) in which teachers were asked if they agree that it is more important for children to learn to read in their mother tongue prior to learning a second language or whether they agree that it is better for children to learn English when they first enter school. During the initial survey administration, nearly all teachers agreed with both statements since the integrated approach encouraged mixing L1 and L2 in grades KG-P3. Once it was clarified in the validation workshop that the two are mutually exclusive, and that statement a. represents predominant instruction in mother tongue and statement b. indicates English-only instruction, they revised their responses to emphasize the importance of mother tongue instruction before introducing English.

Table 9.

Teacher conceptual knowledge of bilingual education

Category	Assumed Cause	Survey item	Agree	Disagree
Conceptual	Teachers do not know the crucial links of first and second language learning (KC7)	a. It is more important for children to learn to read in their mother tongue before learning a second language (KC7)	93%	7%
		b. It is better for children to learn English when they enter school. (KC7)	20%	80%

As shown in Figure 3, 14 of 15 teachers (93%) of teachers agree or strongly agree that it is more important for children to learn to read in their mother tongue language prior to learning a second language.

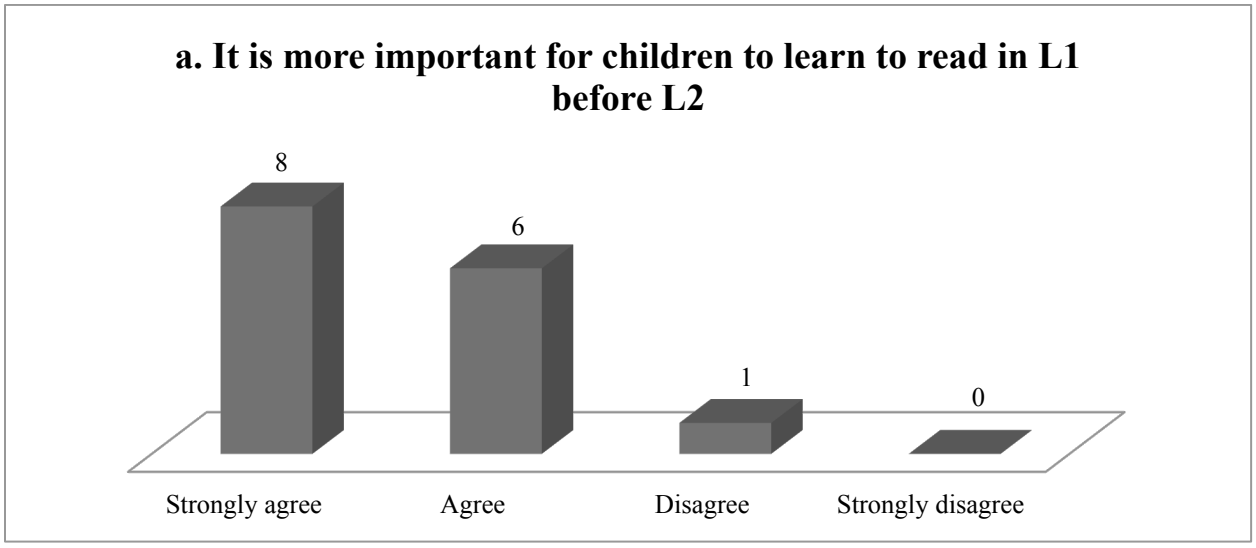


Figure 3. Survey results: Teachers who believe it is more important for children to learn to read in L1 before L2.

Figure 4 shows that 12 of 15 teachers (80%) of teachers disagree or strongly disagree that it is better for children to learn English when they first enter school.

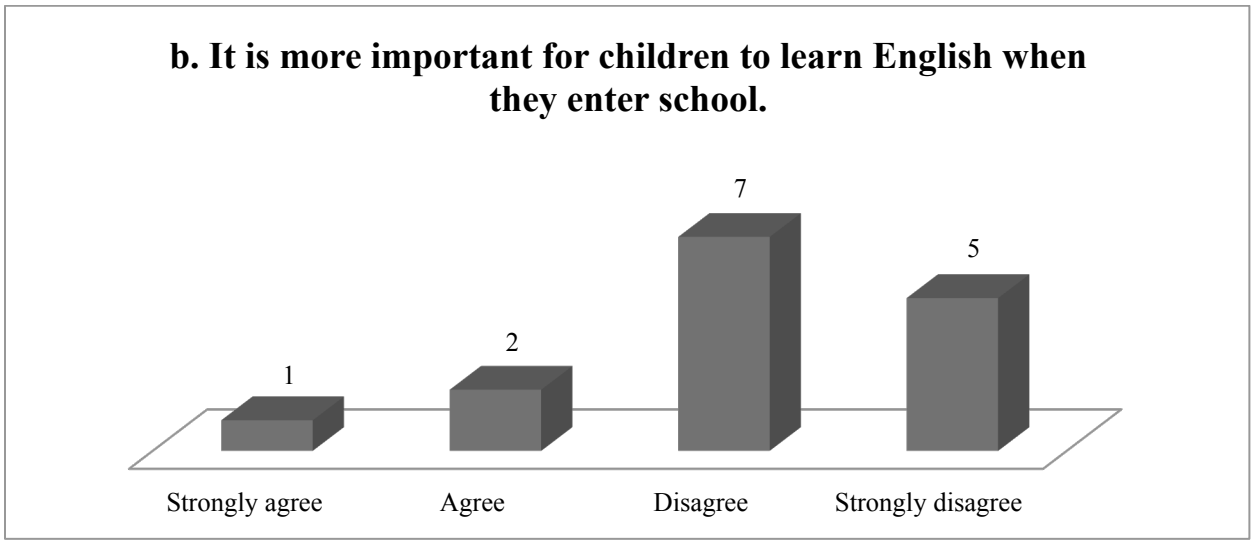


Figure 4. Survey results: Teachers who believe it is more important for children to learn to read in English when they enter school.

These results indicate that over 90% of teachers agreed with the NALAP approach of teaching in the mother tongue in KG through P3 with gradual transition to English, and that they understood the importance of L1 to build a strong foundation for learning L2. Therefore, the assumption that teachers do not understand the crucial links of first and second language learning is not validated.

Procedural Knowledge Gaps

There were five assumed causes for the procedural knowledge gap and one newly identified cause totaling six validated causes, as shown in Table 10.

Table 10.

Validated Procedural Knowledge Assumed Causes

Category	Assumed Causes (Validated)	Instrument	Know	Don't Know
Procedural	Teachers do not know how to explicitly teach phonics and decoding skills	Survey	46%	53%
		Classroom Observation	29%	71%
Procedural	Teachers do not know how to integrate the five skills to teach reading fluency and comprehension	Classroom Observation	20%	80%
Procedural	Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones	Document Analysis	0	100%
Procedural	Teachers do not know how to use child-centered pedagogies (e.g., guided-learning, small group work)	Classroom Observation	16%	84%
Procedural	Teachers do not know how to effectively assess their students' reading progress	Interview	0	100%
		Document Analysis	0	100%
Procedural (New cause)	Teachers do not know how to develop lessons according to the integrated approach	Survey	80% agree	20% disagree

Validated procedural causes. The first assumed cause, teachers' procedural knowledge of phonics instruction, was measured through two instruments — a survey question and classroom observation. On the survey questionnaire, teachers were asked, *"What activities do you use to teach students letter sound?"* The survey results showed that 46% of teachers (7) described decoding teaching strategies appropriately, providing such examples as using alphabet cards, realia, or rhymes to teach letter sounds. The remaining 54% (8) provided an incorrect response indicating they did not know how to teach phonics. The classroom observation further revealed a lack of procedural knowledge of phonics instruction. An average of 29% of teachers were observed teaching letter sounds, syllable reading, or blending and segmentation of words (see Figure 5). Hence, the assumption is validated since the majority of teachers (71%) did not demonstrate procedural knowledge of phonics or decoding skills.

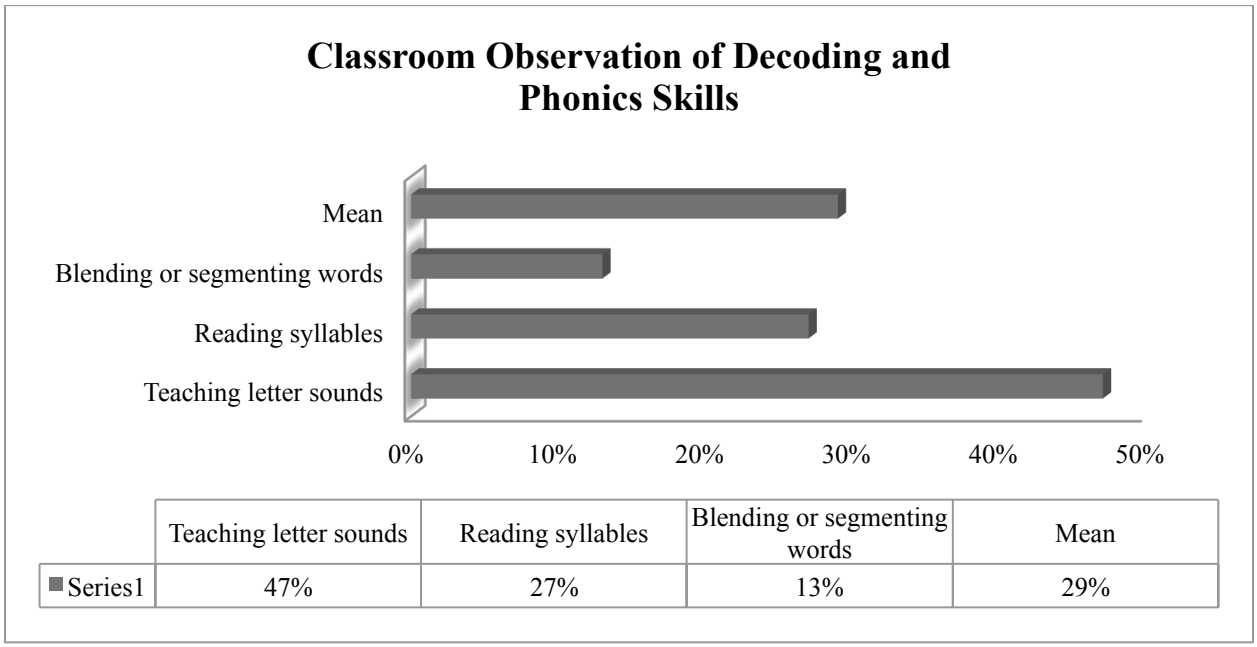


Figure 5. Classroom observation findings: Percent of teachers teaching decoding and phonics skills.

The second assumption, that teachers do not have the procedural knowledge in order to integrate the five key reading skills, was validated. The classroom observation data was analyzed to determine what percentage of teachers taught both decoding and reading comprehension skills in the lesson to build both lower and higher-level reading skills. Figure 6 indicates that 80% of teachers, representing 12 of the 15 teachers observed, do not know how to integrate both decoding skills and comprehension skills in order to assist students with acquiring reading comprehension, and 20% do possess the skill. Hence, this assumption is validated for the majority of teachers.

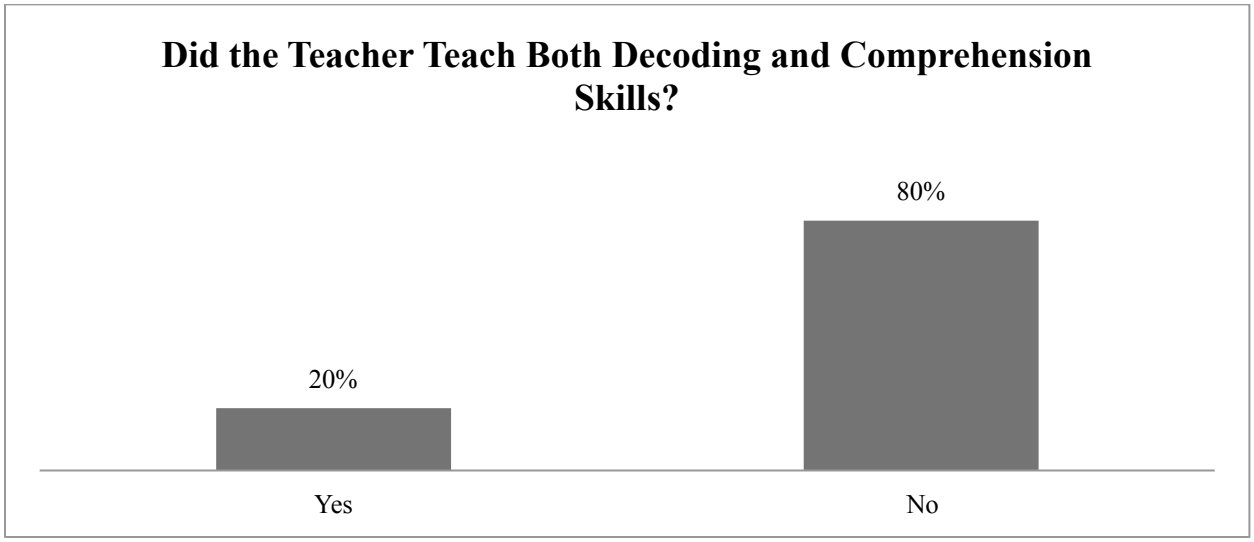


Figure 6. Classroom observation findings: Did the teacher teach both decoding and comprehension skills?

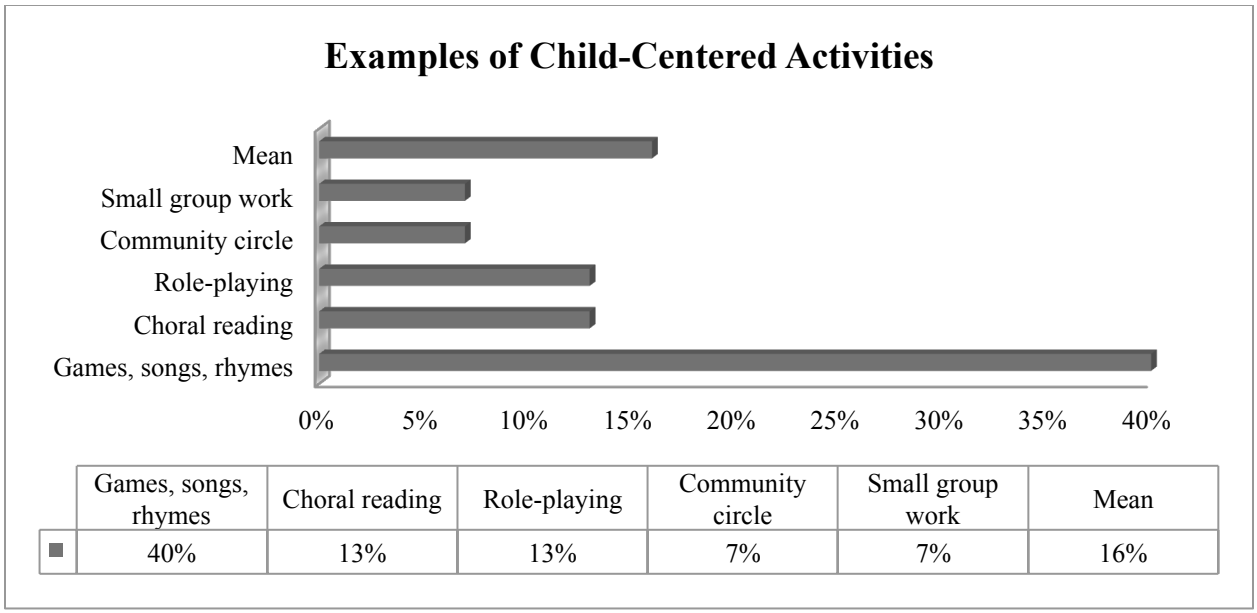
The third assumed cause — teachers do not know how to develop lesson plans aligned with the NALAP milestones — was validated through document analysis of teachers' lesson plans. The criteria used to assess the lessons were whether the lesson objectives aimed to teach a bi-literacy or bilingual milestone. Teachers' lessons were collected at the beginning of the lesson and reviewed to determine whether the milestones listed in the annex of the teachers' guide were

specifically stated under lesson objectives. The results indicated that none of the lesson plans included NALAP standards or milestones, confirming a general lack of factual and procedural knowledge with regards to developing lessons aligned with the NALAP milestones.

The fourth assumed cause, teachers do not know how to use child-centered pedagogies, was validated through classroom observations and interview questions. Through interviews, the researcher investigated the allocation of time spent on teacher-led guided practice and child-led activities. The classroom observation sought to identify examples of child-centered activities.

According to 15 teachers interviewed, the average class time was 83 minutes, seven minutes short of the 90-minute timeframe allocated for NALAP. Teachers typically spent 64% of class time, averaging 56 minutes, on guided practice of L1 and L2. The remaining class time, averaging 27 minutes, was dedicated to writing exercises in either the KG literacy workbook or P1 pupil textbook.

The teacher's guide suggested a number of child-centered activities such as pair-sharing, singing, reading rhymes, role-playing, or choral reading in a community circle so that students may follow along the text in the big book as the teacher reads aloud. Figure 7 shows examples of child-centered activities observed during the classroom observation. On average, 16% of teachers used child-centered activities. Forty percent of teachers observed, primarily KG teachers, used games, songs, and rhymes found in the teacher's guide. Only 7% of teachers facilitated the community circle for the Big Book story reading or small group work.



	Games, songs, rhymes	Choral reading	Role-playing	Community circle	Small group work	Mean
■	40%	13%	13%	7%	7%	16%

Figure 7. Examples of child-centered activities

The assumption that teachers do not know how to use child-centered pedagogies is valid because although lessons were very interactive and engaging, students were rarely asked to lead an activity, do pair shares, do small-group work, or follow along with the text as the teacher reads aloud among other activities recommended in the teachers' guide.

The fifth assumed cause that teachers do not have the skills to effectively assess their students' reading progress was validated through interviews and document analysis. None of the 15 teachers interviewed had an official record or grade book for recording students' grades in reading and language exercises. Seven out of 15 teachers relied on the end-of-term exam to measure student achievement. Only one teacher conducted a midterm exam. Six of 15 teachers conducted an informal reading assessment once per term mandated by the district, but they themselves do not use the results to inform their teaching strategies. Several teachers have recently received the new School-Based Assessment (SBA) Booklet provided by the District

Education Office, but had not yet been trained in its usage. The SBA is a continuous assessment form for tracking grades per term, but does not set benchmarks or require a reading assessment. Therefore, this assumption is validated, as there was no record of children's language or reading skills in all 15 schools visited. Furthermore, teachers could not respond to the question, "How many of your students can read?"

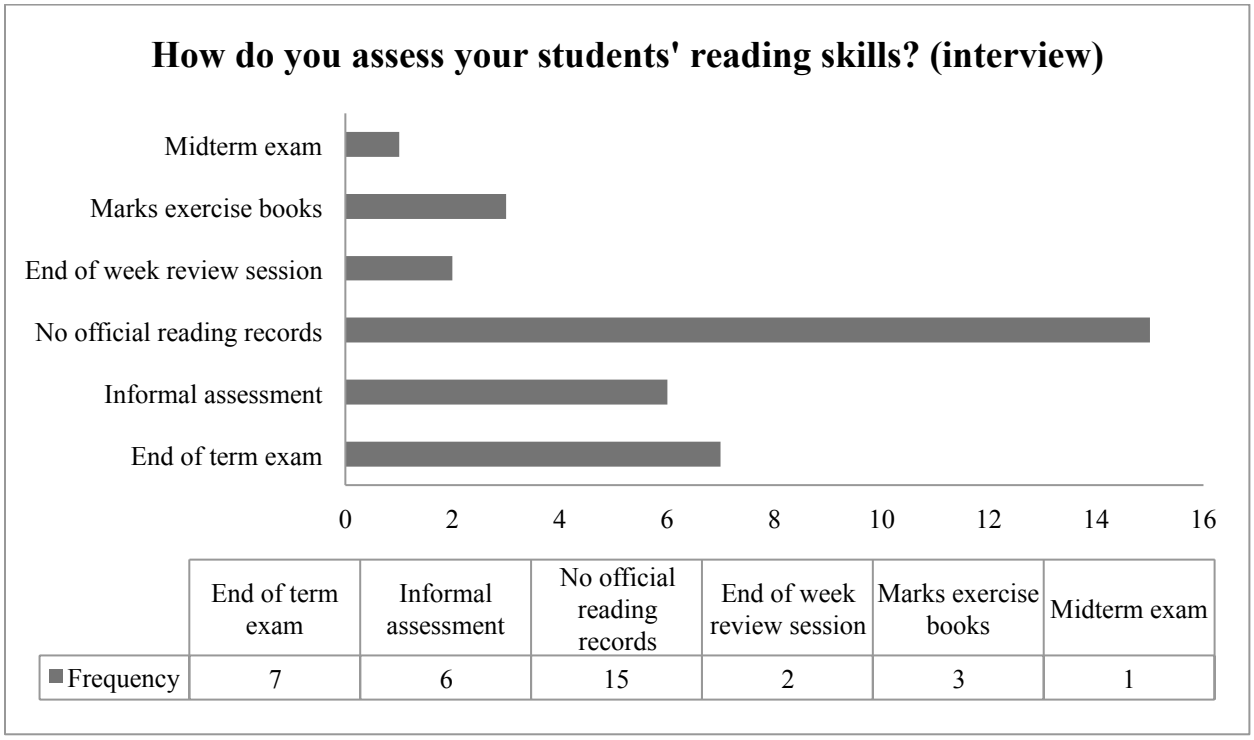


Figure 8. Interview findings: How teachers assess students' reading skills

The sixth cause is a new procedural knowledge gap that emerged throughout the data collection process and was verified during the validation workshop. The researcher learned from school visits that teachers have shifted from teaching L1 and L2 separately to using an integrated approach that now blends the two languages' lessons as well as the activities in the textbooks and literacy workbooks. This new approach has left teachers challenged with how to manage time

effectively and develop comprehensive lesson plans. Therefore, the fifth cause validated is *"teachers do not know how to develop lesson plans according to the new integrated approach."* Figure 9 shows that 80% of teachers agree or strongly agree with this procedural knowledge gap.

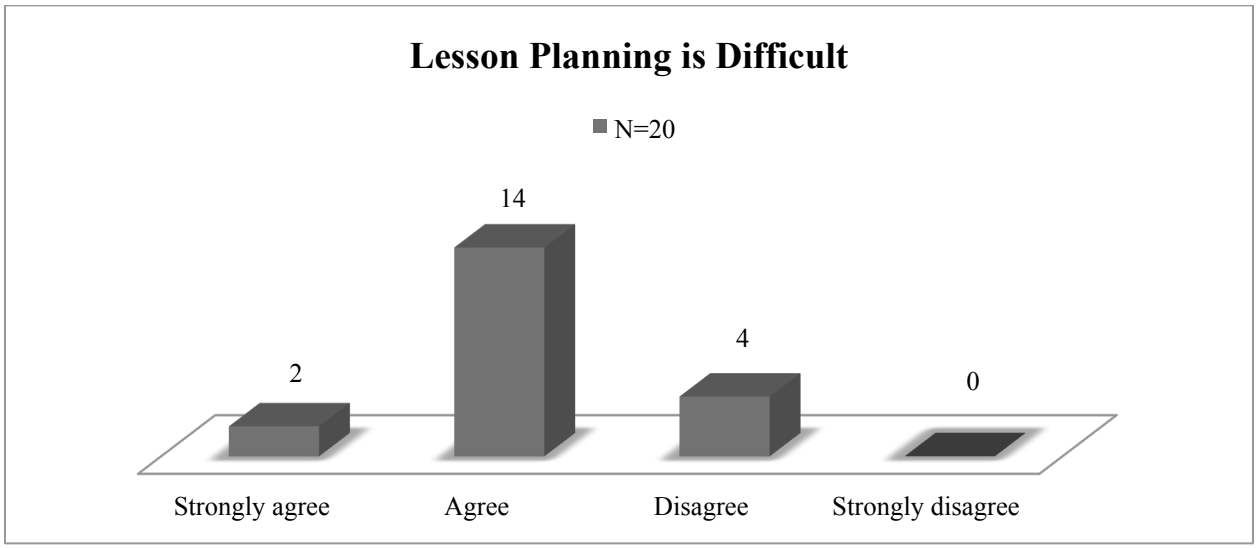


Figure 9. Validation meeting survey results: Lesson planning is difficult

Procedural knowledge causes not validated. Table 11 shows the three procedural knowledge causes that were not validated.

Table 11.

Procedural Knowledge Assumed Causes Not Validated

Category	Assumed Causes (Invalidated)	Instrument	Knows	Does not Know
Procedural	Teachers do not know how to use teaching aids to foster learning of the five reading skills	Classroom Observation	14	1
Procedural	Teachers do not know how to produce TLMs	Interview	7	8
Procedural	Teachers do not know how to apply differentiated instructional methods	Interview Survey	15	0

The results of surveys and interviews found that teachers actually do possess the above procedural knowledge. For example, 14 of the 15 teachers observed, used the conversational poster and big book to support learning of vocabulary, fluency and comprehension skills. Only a few teachers had trouble holding the big book while reading simultaneously. All teachers interviewed also stated that the materials supported rather than hindered teaching and learning.

With regards to the second assumption that teachers do not know how to produce Teaching and Learning Materials (TLMs), although 7 out of 15 teachers develop their own materials, this was not a significant challenge. Classroom displays, realia (e.g., shopping corner) and sufficient quantities of pictures, posters, teacher guides and materials distributed from past projects and the government, actually reduce the need to create materials from scratch. Nonetheless, teachers do improvise materials on their own when they have their own classroom and a place to store the materials.

The third assumed cause is invalid because results of the survey and interviews indicate that teachers know how to differentiate instruction for struggling and advanced learners. The interview results found that all 15 teachers could provide examples of how to support struggling learners, such as providing tutoring, remedial work, or mixed ability grouping. Nine of the 15 teachers provided examples on the survey for how they support struggling readers. Additionally, 14 of 15 teachers stated their main strategy for supporting advanced learners was to provide extra reading passages or the next lesson.

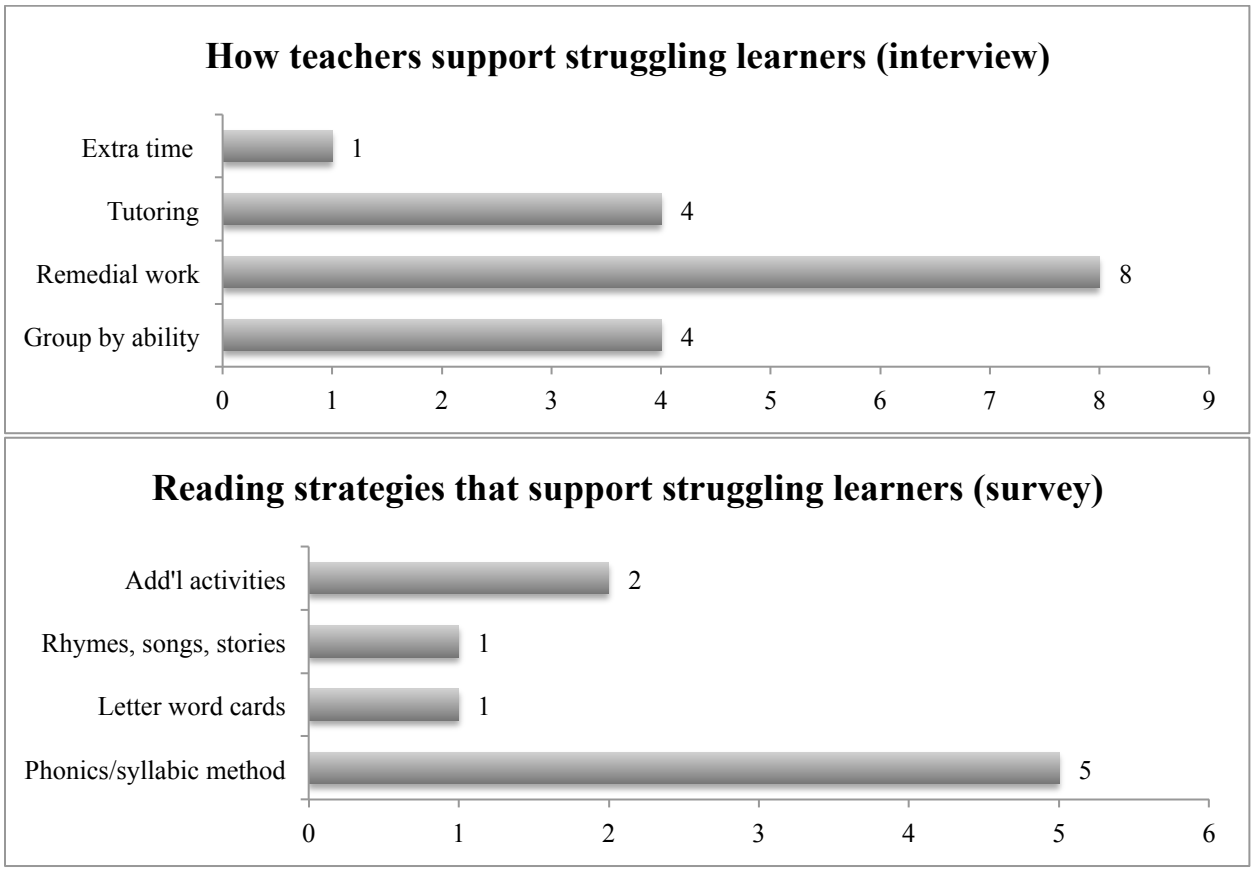


Figure 10. Strategies to support struggling learners (interview and survey results)

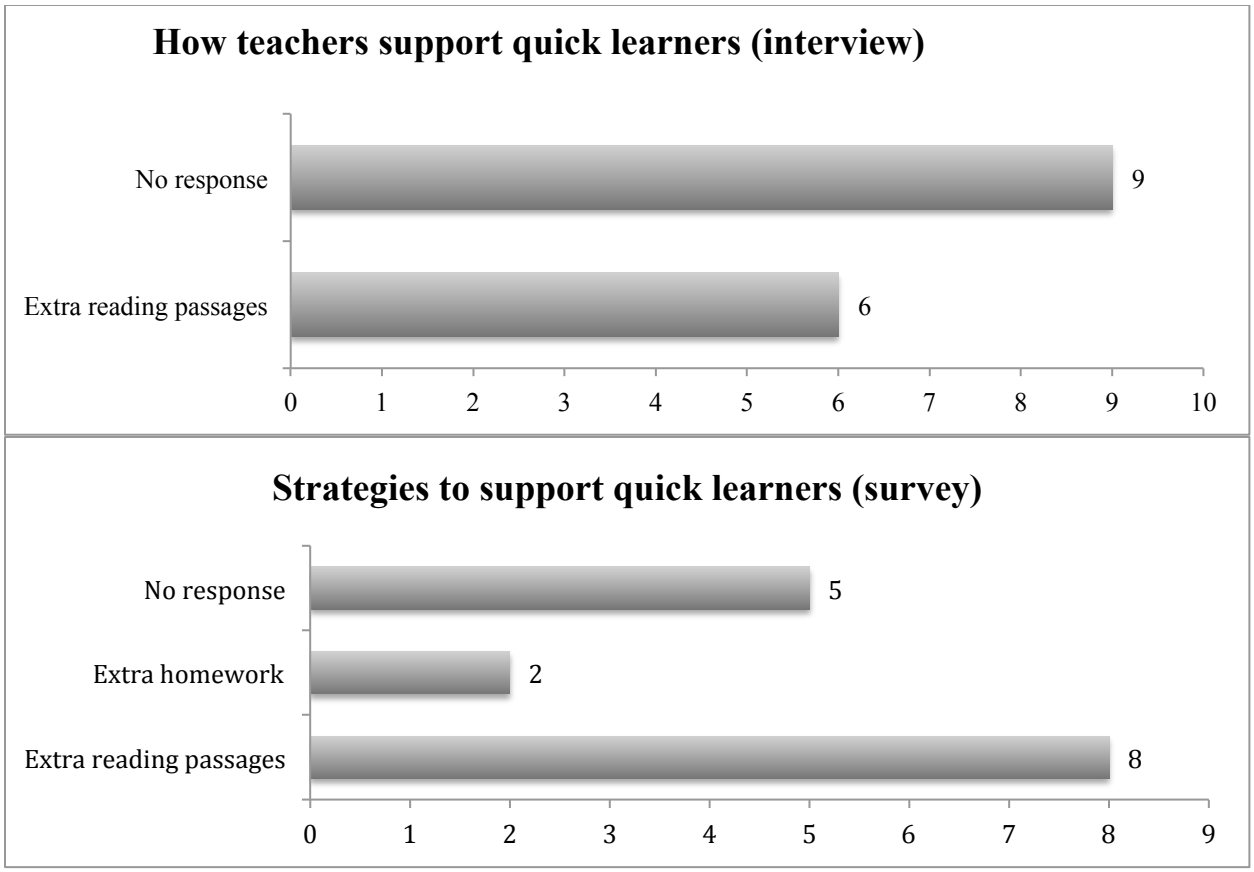


Figure 11. Strategies to support advanced learners (interview and survey results

Synthesis of Results and Findings for Knowledge Causes

The results and findings from the various sources of data showed that seven of the 12 assumed causes were validated plus one new cause for a total of eight validated causes. The validated causes are illustrated in Table 12.

Table 12.

Summary of Validated Assumed Knowledge Causes

Knowledge Category	Assumed Cause	Validated	New Causes
Factual	Teachers do not know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension	√	
Factual	Teachers do not know the standards and milestones for reading and bi-literacy in KG and P1	√	
Procedural	Teachers do not know how to integrate the five skills to teach reading fluency and comprehension	√	
Procedural	Teachers do not know how to explicitly teach phonics and decoding skills	√	
Procedural	Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones	√	
Procedural	Teachers do not know how to use child-centered pedagogies (e.g., pair share, small group work)	√	
Procedural	Teachers do not know how to develop lessons according to the integrated approach		√
Procedural	Teachers do not know how to effectively assess their students' reading progress	√	

Triangulation of survey results, interview findings, classroom observations, and document analysis revealed that, teachers lack factual knowledge of the five reading skills as well as the standard and milestones for bi-literacy and reading in KG and P1. Teachers also demonstrated a lack of conceptual knowledge in teaching decoding and comprehension skills simultaneously. They tended to focus mostly on picture reading, and speaking and listening comprehension tasks, and less on phonemic awareness, phonics, and reading comprehension.

The results further indicate that teachers do not have adequate procedural knowledge in teaching phonics, decoding skills, and using child-centered pedagogies. Additionally, the validation meeting confirmed that teachers are not adept in developing lesson plans aligned with the NALAP milestones and the new integrated approach. Finally, while teachers know how to differentiate instruction for advanced and struggling learners, they lack the metacognitive and procedural knowledge to effectively assess and track their students' reading progress. On the other hand, teachers demonstrated proficiency in the Ghanaian language, an understanding of the crucial links between the mother tongue and second language learning, and expertise in effectively using and developing teaching and learning materials.

Results and Findings for Motivation Causes

There were 10 assumed motivational causes. Three were validated and seven were found to be invalid. There were no new causes identified. Table 13 shows a summary of motivational assumed causes that are validated and those that are not validated.

The findings and results were grouped according to four motivational categories: value, expectancy value, self-efficacy and attribution.

Table 13.

Motivational Gaps Validated, Not Validated and New Causes

Motivation Category	Assumed Cause	Validated	Not Validated	New Causes
Cost Value	Teachers do not place a high value on teaching due to the profession's low economic and social status		X	
Task Value	Teachers do not see the value of teaching reading in the mother tongue language (e.g., think English is more important)		X	
Utility value	Teachers do not believe the NALAP material is relevant because the language selected for the region differs from students' mother tongue language		X	
Intrinsic Value	Teachers do not enjoy teaching reading		X	
Expectancy Theory	Teachers do not expect all their students read with comprehension by the end of P3		X	
Self-efficacy	Teachers are not confident teaching in the Ghanaian language or English		X	
Self-efficacy	Teachers are not confident or conversant in using the teaching guide and teaching aids		X	
Self-efficacy	Teachers are not confident in their ability to teach reading	√		
Self-efficacy	Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work)	√		
Attribution Theory	Teachers believe that students' reading proficiency is largely due to factors beyond their control (e.g., classroom size)	√		

Value

The assumed value causes consisted of cost value, task value, utility value, and intrinsic value (See Chapter 3 for a description of each value type).

Validated value causes. Table 14 shows that none of the assumed value causes were validated.

Table 14.

Motivational Value Causes Not Validated

Value Type	Assumed Cause	Instrument	Results
Cost Value	Teachers do not place a high value on teaching due to the profession's low economic and social status	Survey	Teacher socio-economic status is perceived as average
Task Value	Teachers do not see the value of teaching reading in the mother tongue language; believe English is more important)	Survey / Interview	All teachers believe it is important for students to learn the mother tongue
Utility Value	Teachers do not believe the NALAP material is relevant because the language selected for the region differs from students' mother tongue language	Interview	Majority of students speak Akuapem Twi prior to entering kindergarten.
Intrinsic Value	Teachers do not enjoy teaching reading	Survey	All teachers enjoy teaching reading.

Value causes not validated. The first assumed value cause not validated is cost value. The assumption was that teachers did not place a high value on teaching due to the low economic and social status of teachers. To assess this assumption, teachers were asked to rate the social and economic status of teachers compared to similar occupations requiring the same level of

education. The mean score illustrated in Figure 12 shows that teachers' socio-economic status was perceived as average compared to other professions with similar qualifications. Hence, cost value was not a validated assumption because teachers did not have low self-perceptions of social and economic status affecting their regular attendance or performance.

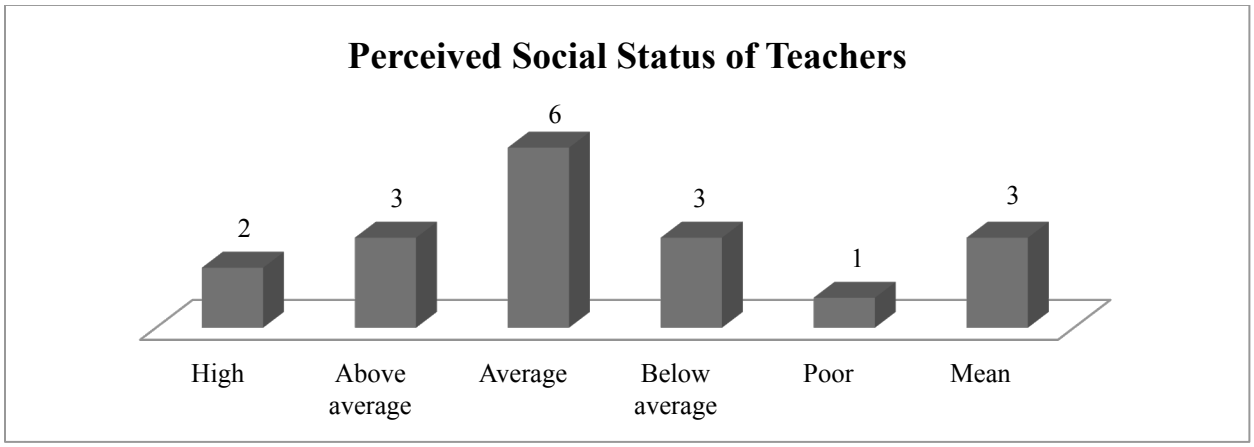


Figure 12. Survey results: Perceived social status of teachers

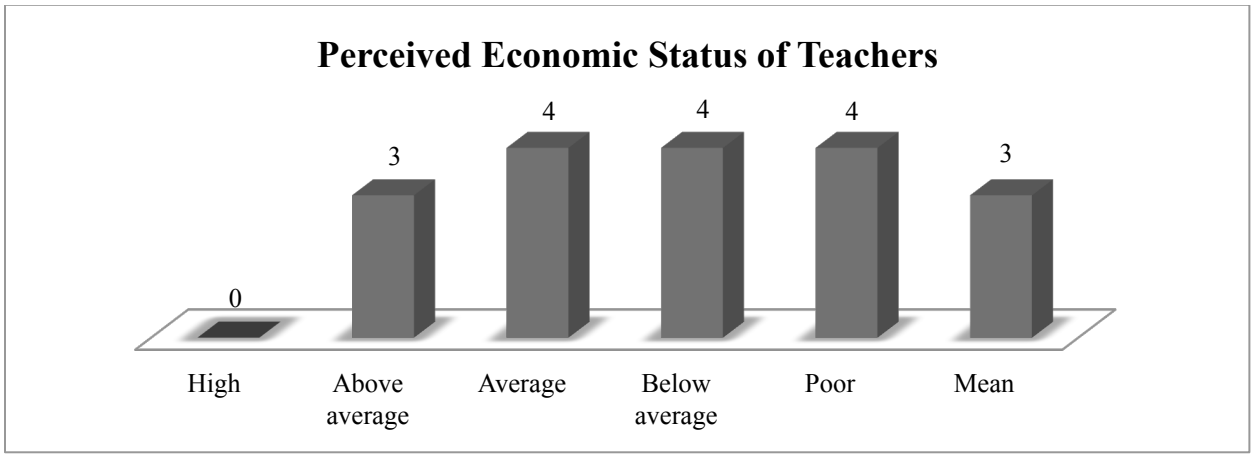


Figure 13. Survey results: Perceived economic status of teachers

The second assumed cause is that teachers do not see the value of teaching reading in the mother tongue language because they believe it is more important for children to learn English. While this is true for the community at large in Ghana, the survey results and interview findings indicated that this assumption is not valid. In fact, all 15 teachers interviewed, believe it is important for students to read in their mother tongue. Eight indicated it was important and seven stressed that it was very important.

On the survey questionnaire, teachers were asked how strongly they agree or disagree with the following statements: (a) I believe it is important for children to learn how to read in L1, (b) I believe it is better for children to learn how to read in English. Prior to the validation workshop, teachers responded positively to both questions. The reason is because this reflects the current integrated approach. Once the question was clarified, nearly all teachers, 14 out of 15, strongly agreed (8) or agreed (7) that students should initially learn to read in their mother tongue. They also recognized the importance of oral speaking and listening skills in English in the early grades.

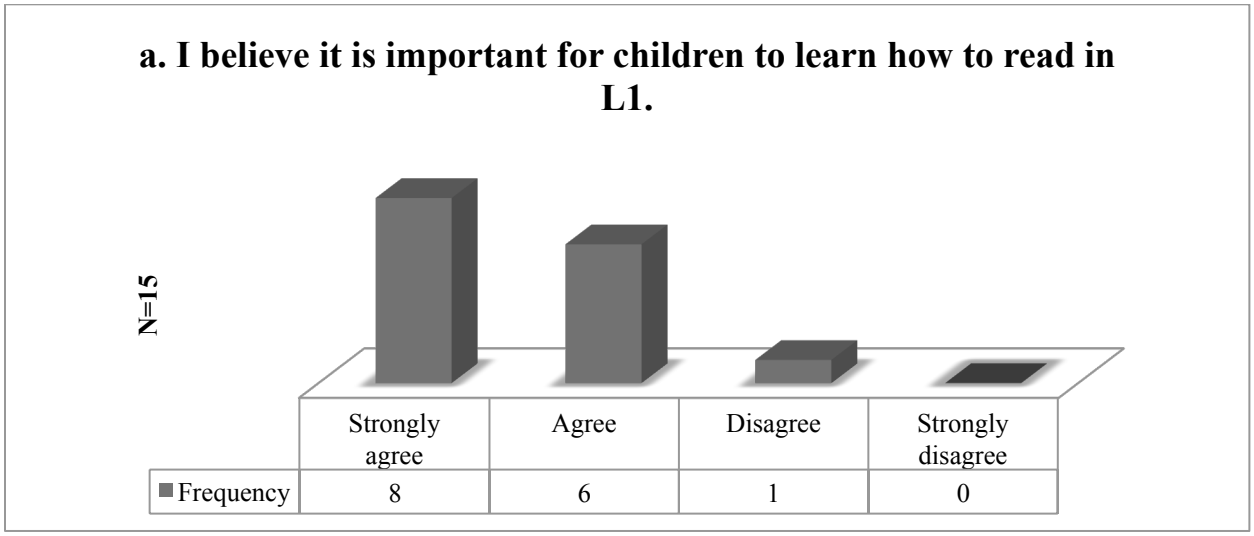


Figure 14. Survey results: Teachers who believe it is important for children to learn how to read in L1

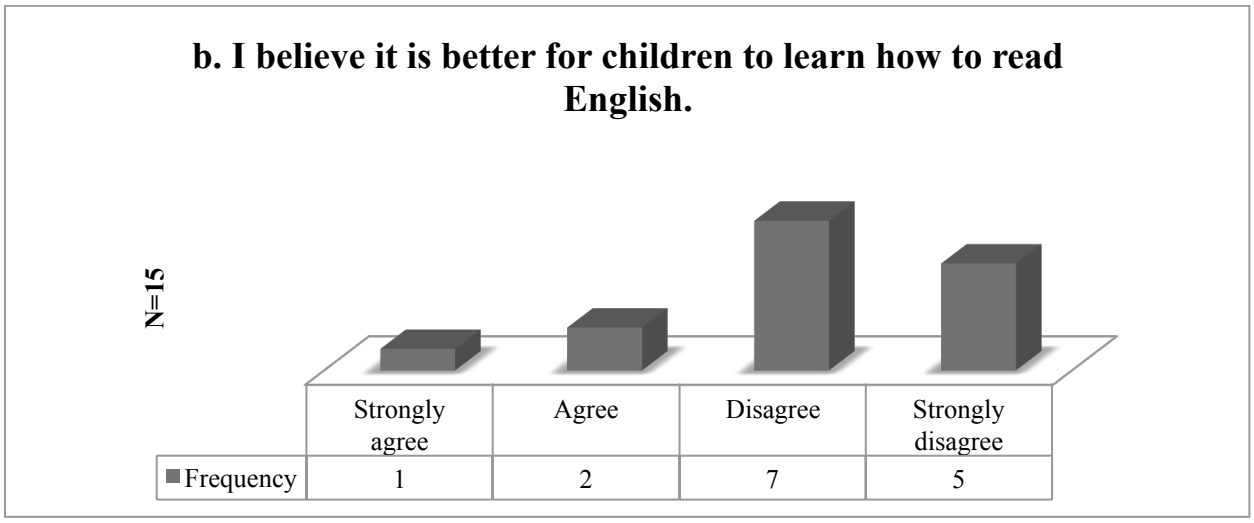


Figure 15. Survey results: Teachers who believe it is better for children to learn how to read in English

The third type of value assumed cause is utility value. Past evaluations showed that in 20% of schools the language selected for NALAP instruction was incongruent with the students' and teachers' mother tongue. This could cause teachers to view NALAP as irrelevant, resulting in low utility value. However, this assumption was not validated. Although the majority of students speak a local dialect at home, teachers reported that 85% of students speak and understand Akuapem Twi before coming to school. In most cases, they have no problem understanding the language of instruction. The researcher observed that students do have limited speaking capability in the local language, and sometimes use English words to respond to questions in the local language, but the majority of teachers asserted that students often use Akuapem Twi on the playground versus their mother tongue since it is the common language and that teaching in the common local language should be maintained.

The fourth value type is intrinsic value. Contrary to the assumption that teachers do not possess intrinsic motivation, all teachers surveyed agreed (8) or strongly agreed (7) with the

following statement, “I enjoy teaching my students how to read.” Thus, this assumption was not validated.

Expectancy Value

Validated expectancy value causes. There were no assumed expectancy theory causes validated.

Invalidated expectancy value causes. Table 15 shows that the assumption that teachers do not expect all their students to read with comprehension by the end of P3 was not validated. The survey results indicated that 80% of teachers expect their students to read with comprehension by the end of P3. Twelve of 15 teachers disagreed or strongly disagreed with the following statement, “I do not expect all students to be able to read with comprehension in the local language by the end of P3.” Classroom observations confirmed that teachers stress listening and reading comprehension exercises throughout reading and oral tasks.

Table 15.

Motivational Expectancy Theory Assumed Cause Not Validated

Type	Assumed Cause	Instrument	Results
Expectancy Value	Teachers do not expect all their students read with comprehension by the end of P3	Survey	80% of teachers expect their students to read with comprehension

Self-Efficacy

Validated self-efficacy causes. There were two assumed self-efficacy causes that were validated through surveys, as illustrated in Table 16.

Table 16.

Validated Self-Efficacy Causes

Type	Assumed Cause	Instrument	Results
Self-efficacy	Teachers are not confident in their ability to teach reading	Survey	1/3 of teachers do not feel confident teaching reading
Self-efficacy	Teachers are not confident in managing classrooms (facilitating small group work, supporting struggling learners)	Survey	1/2 of teachers surveyed did not feel confident managing classrooms

The first self-efficacy cause, teachers are not confident in their ability to teach reading, was validated based on the analysis of surveys and classroom observations. One-third of teachers surveyed did not feel completely confident teaching reading skills. Ten teachers surveyed reported that they felt very confident, two somewhat confident, and three only a little confident in their ability to teach reading. Although 67% of teachers surveyed, self-reported that they felt very confident in teaching reading skills, both classroom findings and knowledge results indicate low comfort and competency levels. Responses to knowledge questions on the survey indicated that few teachers were competent in effective reading instruction. Classroom observations also revealed that few teachers knew how to teach phonics or decoding strategies, and hence lacked procedural knowledge. Therefore, this assumption was validated through triangulation of other sources.

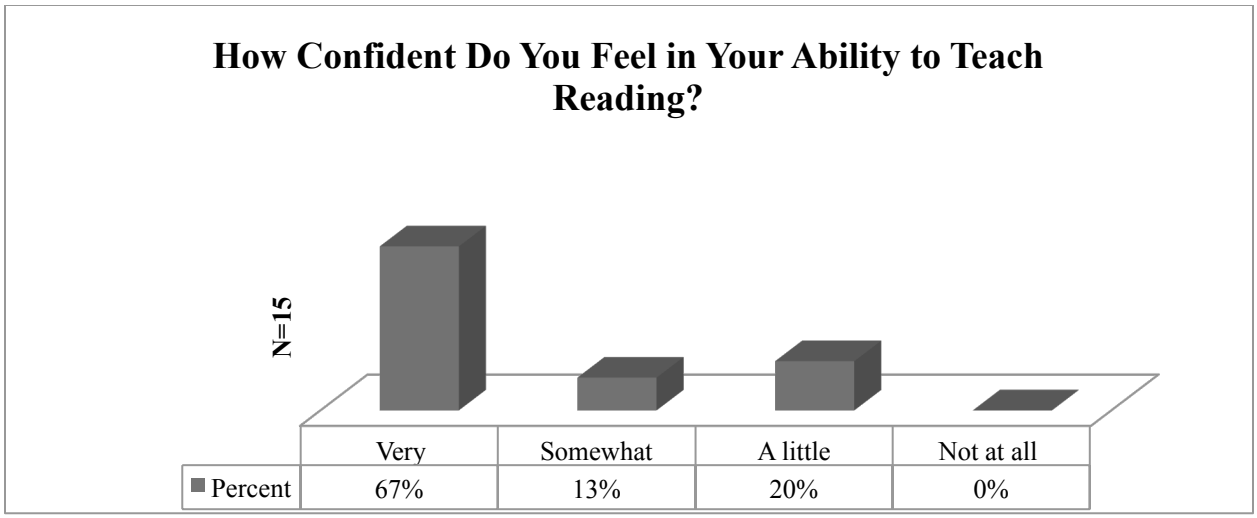


Figure 16. Survey results: Teacher confidence in ability to teach reading

The second validated cause for self-efficacy was that teachers are not confident in managing classrooms, with regards to facilitating small group work or supporting struggling readers. The results showed that 50% of teachers, on average, did not feel confident or very confident in their ability to manage classrooms or meet the needs of struggling learners. As shown in Figure 17, 47% of teachers (7 out of 15 surveyed) felt very confident in their ability to manage classrooms effectively while 53% felt somewhat confident or a little confident. Similarly, about half of teachers (53%; 8 teachers) felt very prepared to meet the needs of struggling learners, while 47% felt somewhat prepared or only a little prepared. Therefore, the assumption is validated because about half of teachers surveyed lacked confidence in managing classrooms and meeting the needs of struggling learners, which could have a significant outcome on student reading achievement.

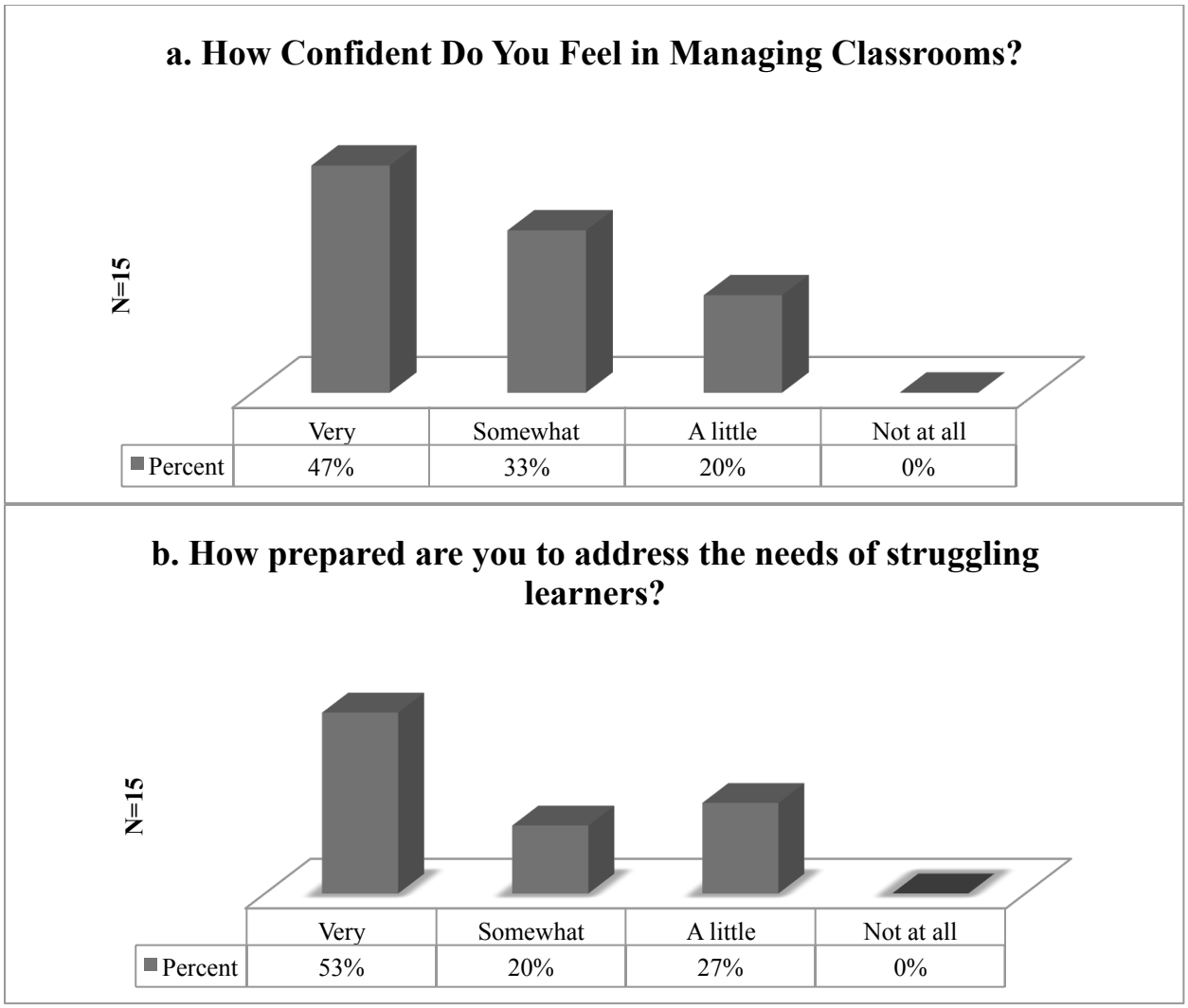


Figure 17. Survey results: Teacher confidence in managing classrooms and addressing the needs of struggling learners

Self-efficacy causes not validated. There were two assumed self-efficacy causes that were not validated (See Table 17).

Table 17.

Self-Efficacy Assumed Causes Not Validated

Type	Assumed Cause	Instrument	Results
Self-efficacy	Teachers are not confident teaching in the Ghanaian language or English	Survey	All teachers are confident in their language abilities and teaching in the local language; 2/3 of teachers are confident in teaching English
Self-efficacy	Teachers are not confident or conversant in using the teaching guide and teaching aids	Survey / Interview	80% of teachers are very confident in using the TG and relevant teaching aids

The first assumed self-efficacy cause, confidence in teaching the Ghanaian language or English, was assessed through survey questions. The survey results demonstrated that nearly all teachers feel confident in their ability to read and write in both the mother tongue (15 of 15 teachers) and English (14 of 15 teachers). Only one teacher did not feel confident in their English language abilities.

With specific regards to teaching reading in the local language, 13 of 15 teachers were very confident teaching listening, reading and writing skills in the local language and two were somewhat confident. In terms of teaching English, two-thirds of teachers were very confident, one was somewhat confident, and four were a little confident. Because the majority of teachers are confident in their language and teaching abilities, this assumption was not validated.

Nonetheless, it is noteworthy that five of the 15 teachers, representing 1/3 of the sample, need to improve their confidence levels in teaching the English language.

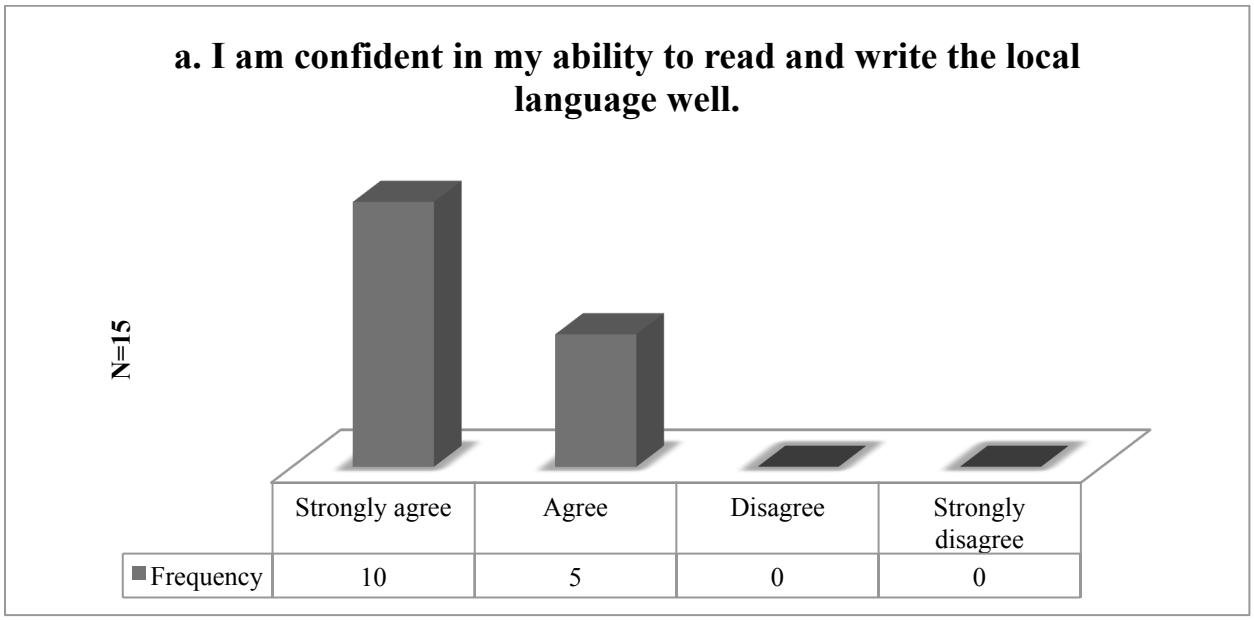


Figure 18. Survey results: Teacher confidence in ability to read and write the local language

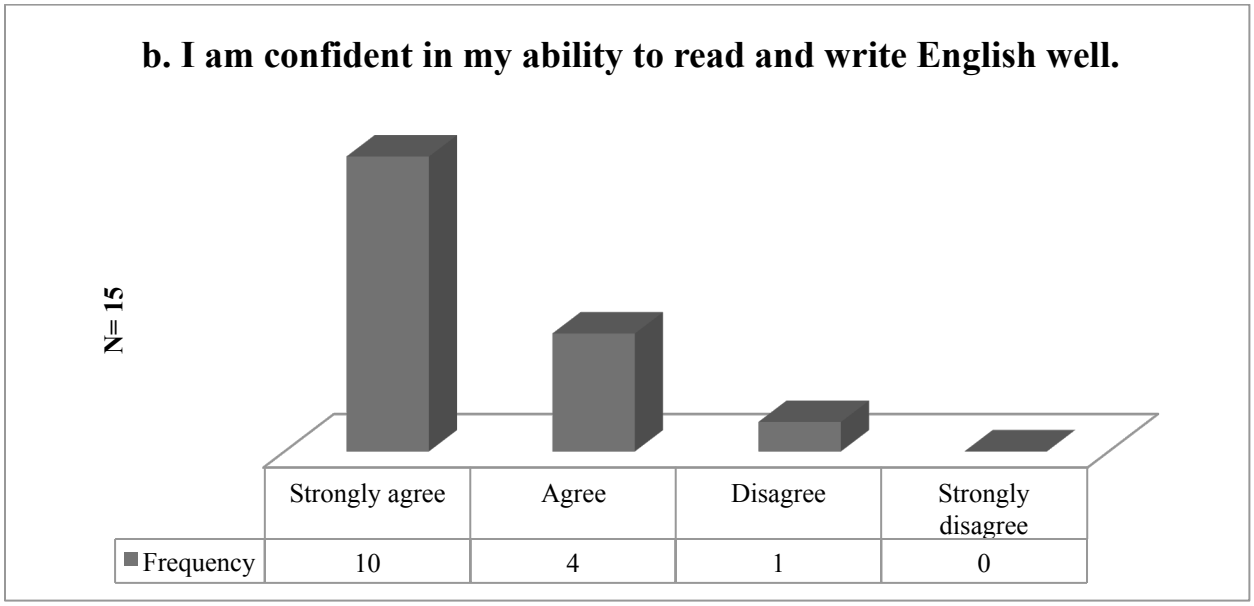


Figure 19. Survey results: Teacher confidence in ability to read and write the English language

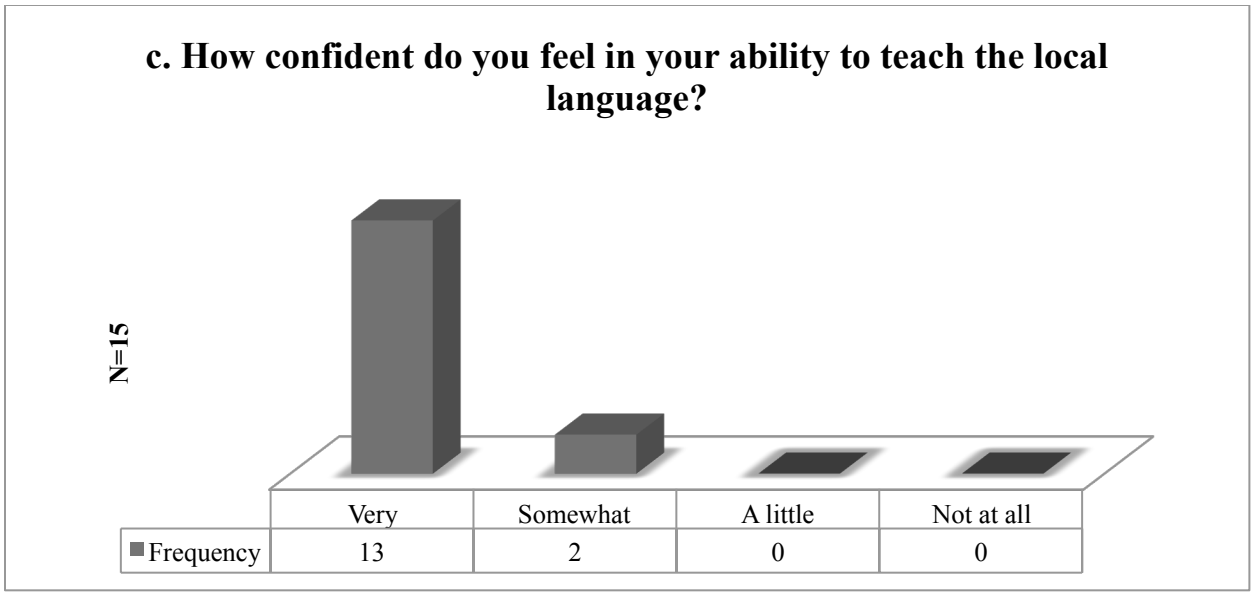


Figure 20. Survey results: Teacher confidence in ability to teach the local language

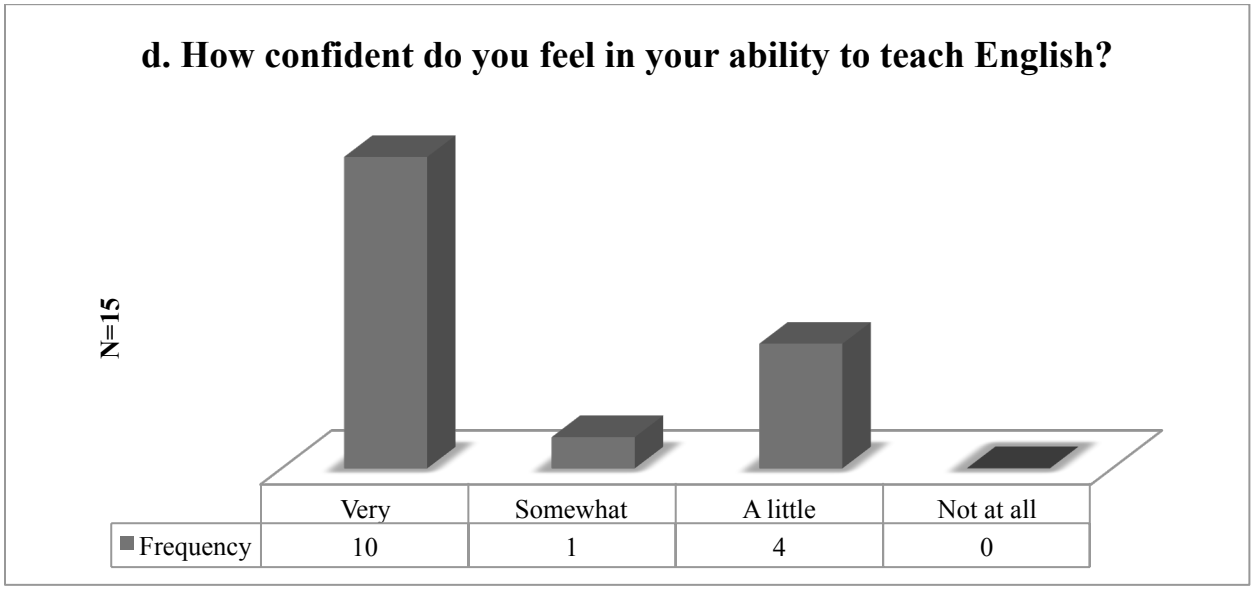


Figure 21. Survey results: Teacher confidence in ability to teach English

The second assumed self-efficacy cause, teachers were not confident or conversant in using the teaching guide and teaching aids, was not validated according to several sources of data. First, knowledge survey results showed that 14 of 15 teachers possess knowledge in using the teaching aids effectively. Secondly, in response to the survey question, "How confident do you feel using the teacher's guide and teaching aids?" 80% of teachers stated they were very confident: one was somewhat confident and, two were a little confident. It is conceivable that the two who were not confident were those who were not trained. Thirdly, the majority of teachers in the validation workshop noted that the greatest strengths of NALAP were the materials and methodologies, 18 and 20, respectively. These results and findings are shown in Figures 22 and 23.

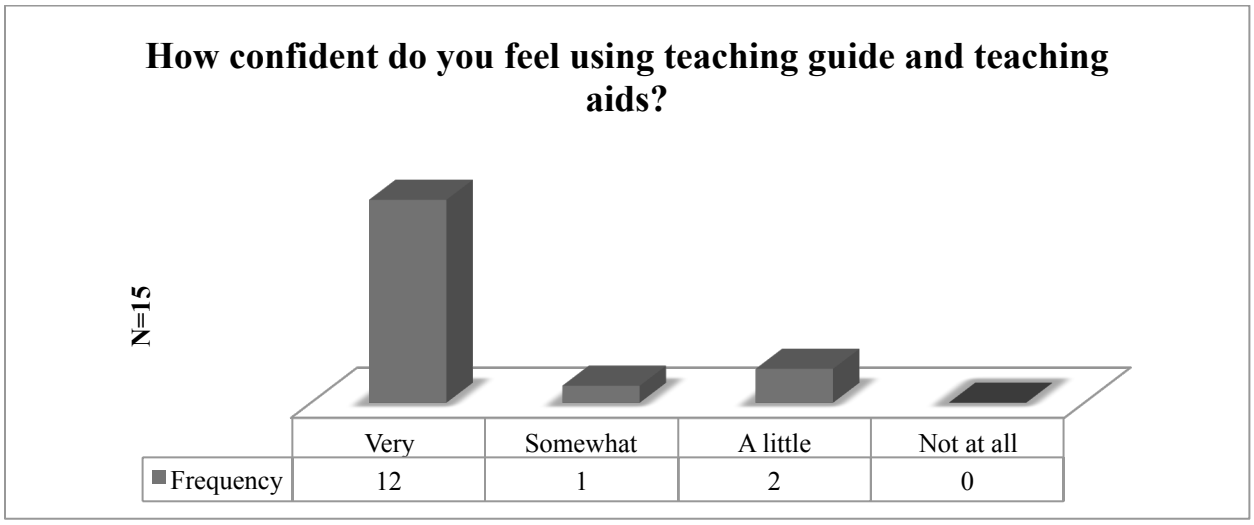


Figure 22. Survey results: Teacher confidence in using NALAP teaching materials

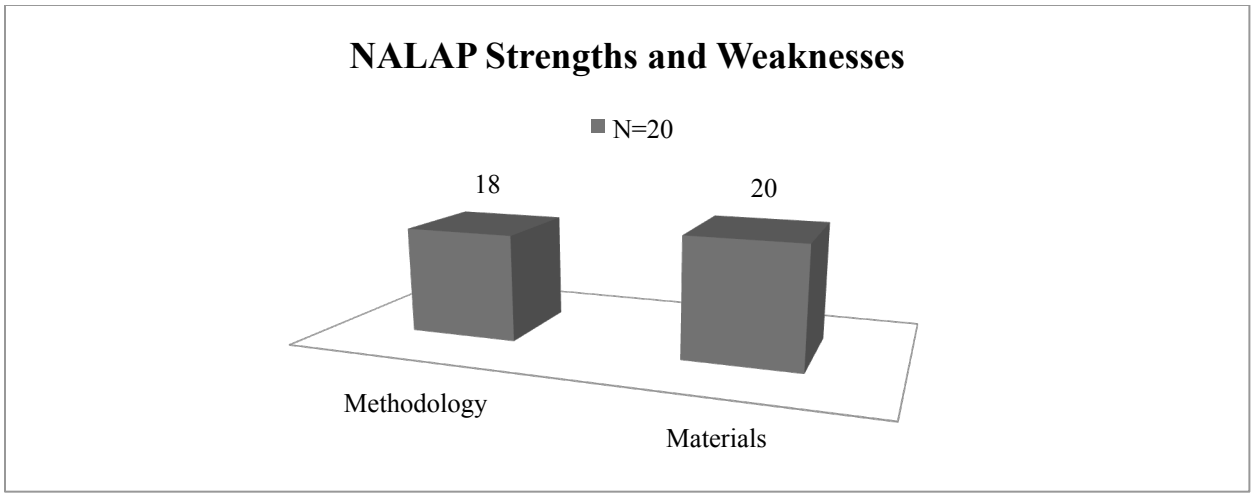


Figure 23. Validation meeting results: NALAP strengths and weaknesses

Attribution

Validated attribution causes. Table 18 shows that the assumed attribution theory cause was validated.

Table 18.

Validated Attribution Cause

Type	Assumed Cause	Instrument	Results
Attribution	Teachers believe that students' reading proficiency is largely due to factors beyond their control	Survey	2/3 of teachers believe student achievement is beyond their control.

The assumed attribution cause that teachers believe that students' reading proficiency is largely due to factors beyond their control was validated through two survey questions, as shown

in Figure 24. Teachers were asked whether they believe student achievement is a) largely dependent upon factors beyond their control or b) dependent upon their teaching ability. The survey results indicated that while one third of teachers believed that reading proficiency is largely dependent on their teaching ability, two-thirds of teachers (10 out of 15) believed that student-reading achievement is largely dependent upon factors beyond the teachers' control. Because the majority of teachers attribute reading achievement to factors beyond their teaching skills, this assumption is validated. The survey results are shown in Figure 24.

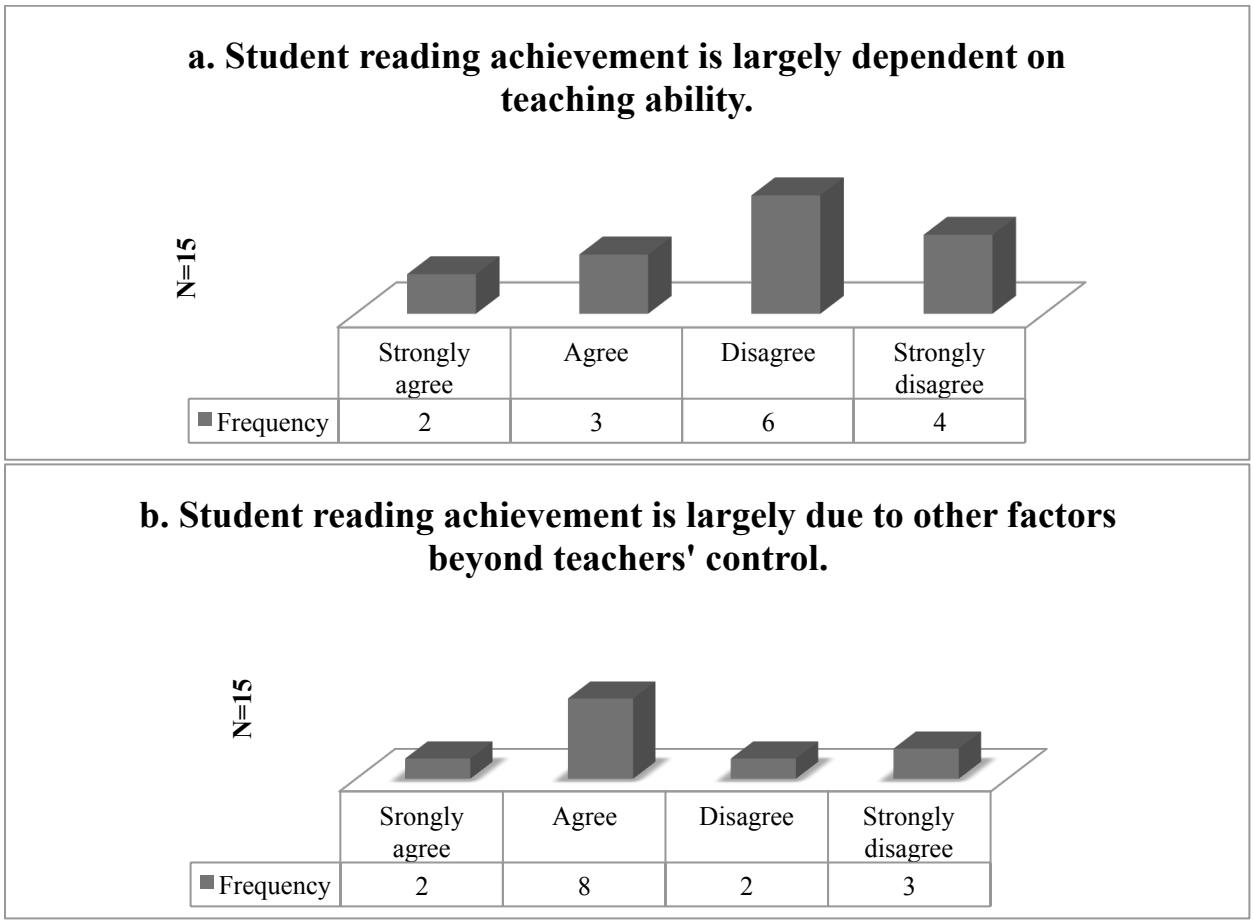


Figure 24. Survey results: Teacher perceived influence on student achievement

Attribution causes not validated. There was only one attribution theory cause, which was validated.

Synthesis of Results and Findings for Motivation Causes

The results and findings indicated that three of the 10 assumed motivational causes were validated. The validated causes are illustrated in Table 19.

Table 19.

Summary of Validated Assumed Motivational Causes

Motivation Category	Assumed Cause	Validated
Self-efficacy	Teachers are not confident in their ability to teach reading	√
Self-efficacy	Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work)	√
Attribution	Teachers believe that students' reading proficiency is largely due to factors beyond their control (e.g., classroom size)	√

Analysis of results from the surveys, interviews and classroom observations prove that teachers' motivation is affected by three factors: their confidence in their ability to teach reading, their confidence in classroom management strategies, and the belief that students' reading proficiency is largely due to factors outside their control. Contrary to motivation research, teachers' motivation is not affected by the following factors: cost value, task value, utility value, intrinsic value, or expectancy theory. In other words, teachers do value the teaching profession, teaching the mother tongue language, and teaching reading through the NALAP approach. They do expect their students to read with comprehension by P3, and are confident in their ability to

teach in the Ghanaian language and English, and in using the TLMs appropriately. The areas where teachers lack motivation overlap with the knowledge gaps and indicate a need for increased knowledge and confidence of teaching beginning reading skills and using child-centered pedagogies for improved classroom management. The more confident teachers feel in teaching reading and influencing student reading outcomes, the more likely they will be to attribute student success to effective reading instruction.

Results and Findings for Organizational Assumed Causes

There were 12 assumed organizational causes. Eight were validated and one was newly identified resulting in a total of nine validated causes. Three assumed causes were found to be invalid. These results are displayed in Table 20.

The assumed causes have been organized into four categories: materials and resources, curriculum alignment, professional development, and support structures.

Table 20.

Organizational Gaps Validated, Not Validated and New Causes

Organization	Assumed Cause	Validated	Not Validated	New Causes
Resources	Insufficient student textbooks	√		
Resources	Lack of supplementary teaching and learning materials appropriate for the NALAP curriculum		X	
Resources	Overcrowded classes prevent teachers from using child-centered strategies		X	
Resources	Inaccurate translation in Akuapem Twi Big Book			√
Curriculum Alignment	Teacher guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening	√		
Curriculum Alignment	Reading methodology and five key skills are not explicitly described in the teacher's guide	√		
Curriculum Alignment	Language selected as medium of instruction is not the pupils' first language		X	
Prof. Dev	Insufficient courses on reading instruction in the teacher college	√		
Prof. Dev	Limited opportunities for teaching reading during teaching practicum	√		
Prof. Dev	Insufficient training to master NALAP methodologies	√		
Support Structure	Lack of ongoing support and coaching on NALAP implementation in the classroom	√		
Support Structure	Limited opportunities to exchange ideas with other teachers	√		
Support Structure	Challenges adhering to the 90-minute timetable	√		

Resource Gaps

Validated resource causes. Two resource gaps were validated, as shown in Table 21.

Table 21.

Organizational Gaps: Validated Resource Assumed Causes

Type	Assumed Cause	Instrument	Results
Resources	Insufficient teacher guides (TGs) and student textbooks	Survey / Interviews / Validation Meeting	Sufficient TGs; Insufficient Pupil materials
Resources (New cause)	Inaccurate translation in Akuapem Twi Big Book	Interviews / Validation Meeting	15 teachers agree or strongly agree

The first organizational assumed cause, insufficient teacher's guides and student textbooks, was partially validated through three sources: the survey, interviews, and the validation meeting.

Figure 25 shows the number of schools with the teacher's guide and textbooks. According to the survey results, all 15 teachers had the new Integrated Approach to Literacy Teacher's Guide. This finding was confirmed through individual interviews and at the validation meeting. In terms of the student textbooks, four of the five schools had the L1 and English textbook for P1 classrooms. None of the KG classrooms had a pupil textbook, but some had a literacy workbook for drawing or letter writing exercises. Four of the five schools had the KG2 literacy workbook. While most schools had access to the books, the pupil textbooks and workbooks were shared amongst pupils (see textbook per pupil ratio in Figure 26). For that reason, students could not write directly in the workbook. Instead, they had to trace patterns in

their exercise books. Fourteen of 15 teachers interviewed stressed the need for more pupil textbooks and literacy workbooks to achieve a one textbook per pupil ratio.

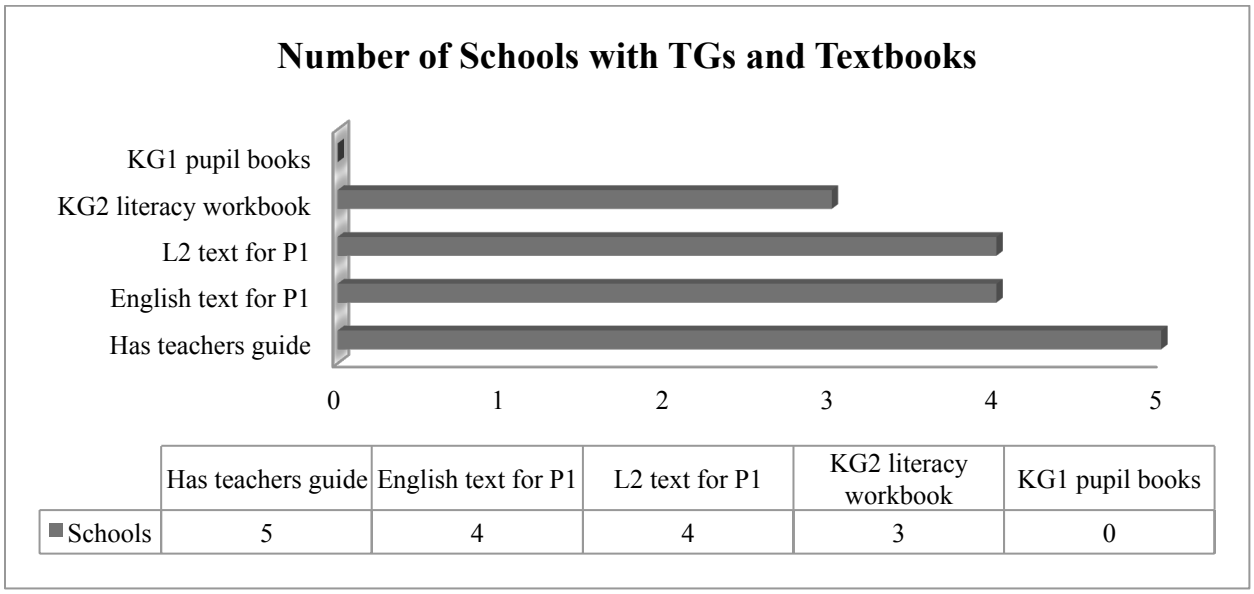


Figure 25. Survey results: Number of schools with TGs and textbooks

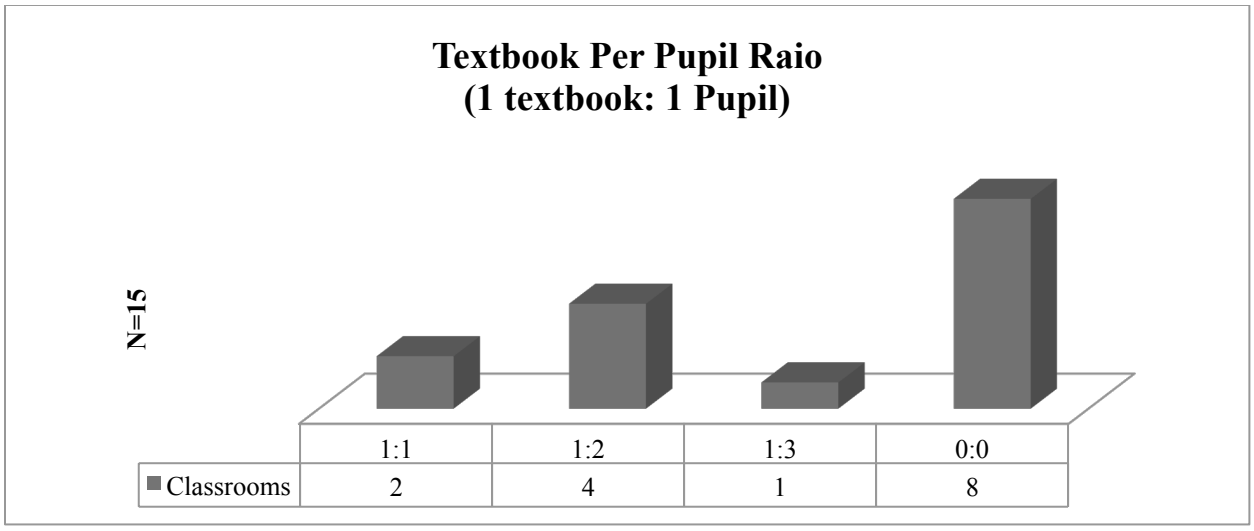


Figure 26. Survey results: Textbook per pupil ratio

This assumption therefore is validated because, although there were sufficient teachers' guides, the majority of teachers believe that there were not enough pupil textbooks per child. They further stressed that teachers and parents must purchase the Literacy Workbook, which limits access for the most economically disadvantaged students.

The interview included one open-ended question about the strengths and weaknesses of the NALAP program, which revealed a new cause. One of the weaknesses identified was the inaccurate translation of the local language (Akuapem Twi) in the Big Book. Several teachers cited that vocabulary words reflect "Asanti" Twi, not "Akuapem" Twi. This assumption was confirmed at the teacher validation workshop. As shown in Figure 27, 15 teachers agreed (8) or strongly agreed (7) with this assumed cause, and five disagreed. Hence, the assumption is validated and requires follow-up from an Akuapem Twi native speaker.

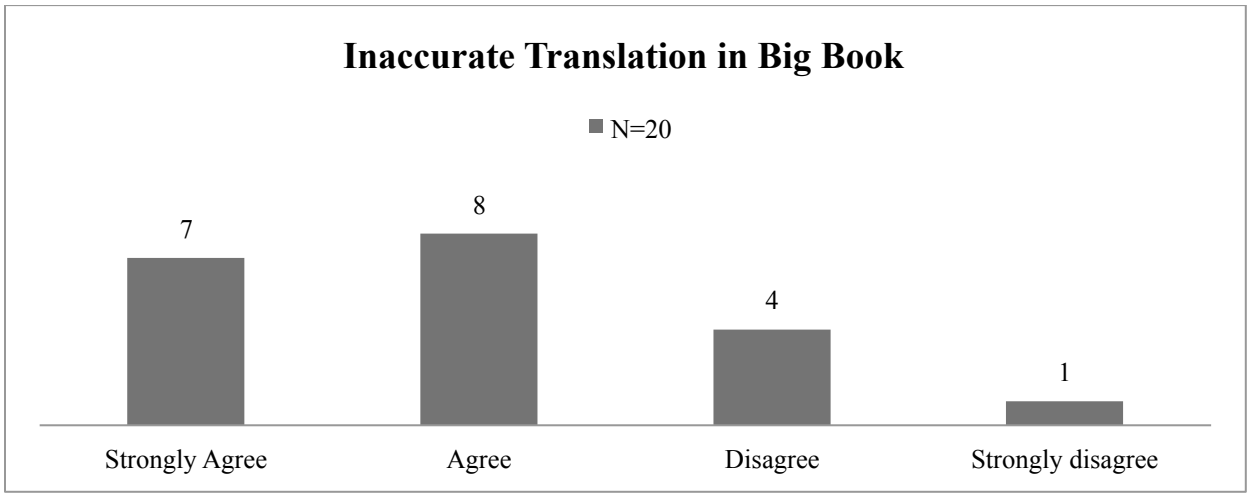


Figure 27. Validation meeting results: Inaccurate translation

Resource causes not validated. Two assumed resource gaps, as shown in Table 22, were not validated.

Table 22.

Organizational Gaps: Resource Assumed Causes Not Validated

Type	Assumed Cause	Instrument	Results
Resources	Lack of supplementary teaching and learning materials (TLMs) appropriate for the NALAP curriculum	Survey	Majority of teachers have TLMs
Resources	Overcrowded classes prevent teachers from using child-centered strategies	Interview Question	Average class size is 27 students

The first assumed cause, lack of supplementary teaching and learning materials, was not validated. The new integrated approach to literacy teacher's guide indicates that teachers should have received the following NALAP teaching and learning materials: alphabet cards, conversational poster, readers and big books. Figure 28 shows that all teachers surveyed received the conversational poster, the NALAP big book, and the Teacher's Guide. While 50% of the teachers at the time had the alphabet cards, 50% also produced their own materials, such as flashcards, word lists, charts, displays, etc. Thus, there were sufficient materials and teaching aids to teach the activities in the Teacher's Guide. As indicated above, the only material lacking was the pupil workbooks and readers.

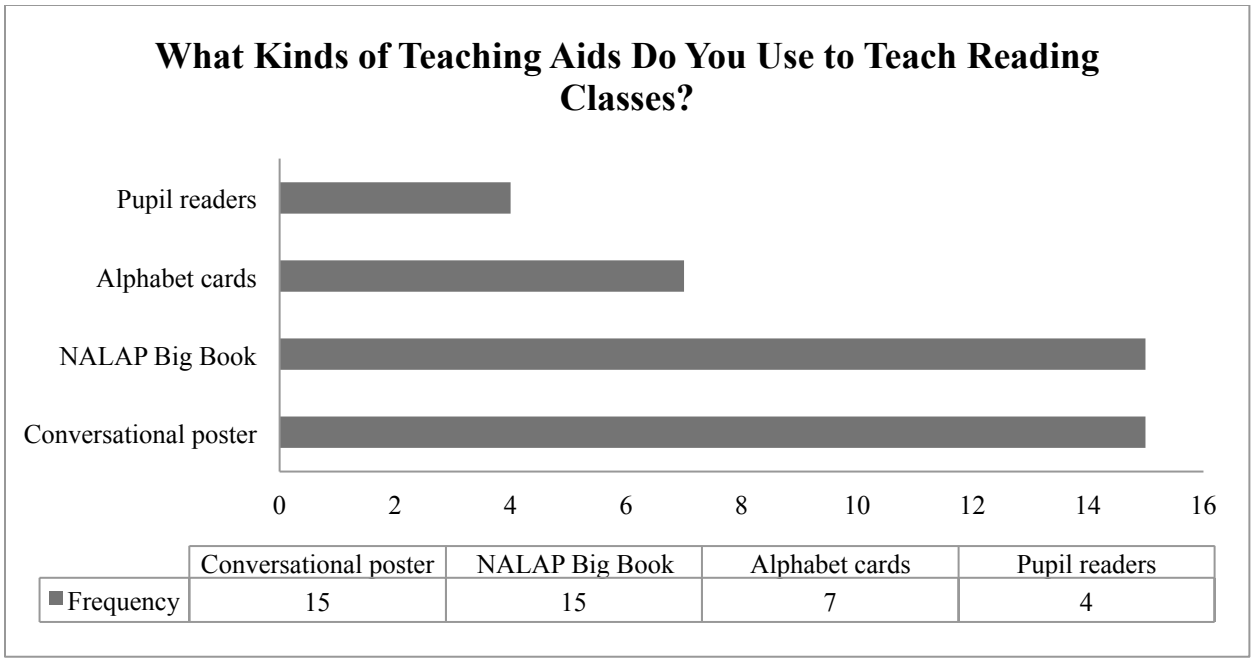


Figure 28. Survey results: Teaching aids used to teach reading classes

Curriculum Alignment

Validated curriculum alignment causes. Two assumed causes related to curriculum alignment were validated through document analysis. The first assumed cause is that teacher's guides and lesson plans are not aligned with NALAP milestones. To validate this assumption, teachers' guides and lesson plans were reviewed for alignment with the milestones for language and reading. The analysis revealed that the milestones were clearly listed by grade in the Appendix of the Teacher's Guide; however, the milestones were not linked to the aims and objectives of the daily lessons. Teachers are expected to familiarize themselves with the milestones and teach them, but there is no guidance provided. It is assumed that if they teach the lessons accordingly, they will teach the milestones. However, teachers often skip steps such as phonemic awareness in the teachers' guides, and hence may not teach all reading skills or milestones. Teachers' lesson plans also do not list the milestones. The second assumed cause, not

all five reading skills are introduced and explicitly described in the teacher's guide, was validated through document review of the teachers' guide. The validated curriculum gaps are illustrated in Table 23.

Table 23.

Organizational Gaps: Curriculum Alignment Assumed Causes Validated

Type	Assumed Cause	Instrument	Results
Curriculum Alignment	Teacher guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening	Document Analysis	Not aligned
Curriculum Alignment	Reading methodology and five key skills are not explicitly described in the teacher's guide	Document Analysis	Not explicitly described

Curriculum alignment causes not validated. The assumption that the NALAP language selected as the medium of instruction is not the pupils' first language was an accurate assumption; however, it was not found to be a barrier to policy implementation. Interview results (as discussed in the knowledge domain) found that 85% of students speak the language of instruction prior to coming to school. The two chief reasons are 1) because the mother tongue is a dialect with no orthography and, 2) because students and parents must use a common local language in the marketplace. Teachers claimed that all students can speak and understand the NALAP language in both the classroom and playground — an indicator of the children's comfort level. The NALAP local language is also very similar to the mother tongue unlike English, which is more difficult for them to comprehend and learn. Table 24 summarizes the results.

Table 24.

Organizational Gaps: Curriculum Alignment Assumed Causes Not Validated

Type	Assumed Cause	Instrument	Results
Curriculum Alignment	Language selected as medium of instruction is not the pupils' first language	Interview	85% are familiar with the language

Professional development

Validated PD causes. Table 25 shows that both pre-service and in-service training do not adequately prepare teachers to teach reading or implement NALAP in the classroom.

Table 25.

Organizational Gaps: Professional Development Assumed Causes Validated

Type	Assumed Cause	Instrument	Results
Prof. Dev	Insufficient courses on reading instruction in the teacher college	Interview	3 of 15 teachers studied reading
Prof. Dev	Limited opportunities for teaching reading during teaching practicum	Interview	4 of 15 teachers taught reading
Prof. Dev	Insufficient training to master NALAP methodologies	Interview / Validation Meeting	Insufficient for over half (8 of 15)

The first assumed cause was validated through interviews. Interview findings indicated that among the 14 certified teachers, nine studied general language skills in their English

coursework, one completed a language course in the Ghanaian language, and three participated in reading-specific courses that were very general in nature and not focused on early literacy skills development. Three teachers completed coursework in early childhood education; yet, content did not pertain to early grade reading. These results suggest that teacher's colleges are failing to prepare newly qualified teachers with the essential skills for effective reading instruction, and hence the assumption is validated.

Secondly, of 14 of the 15 teachers who participated in a teaching practicum during their pre-service training, only four teachers (28%) taught in the early grades. For many teachers, the NALAP training was their first introduction to bilingual instruction. Thus, the assumption that the teaching practicum offers limited opportunities to teach reading in the early grades was validated.

The third assumed cause that the NALAP training was insufficient to master NALAP methodologies was validated by over half of teachers interviewed. Fifty-three percent of teachers (8 of 15) thought that the training was inadequate. The remaining 50% (7) thought that the NALAP training was sufficient because the teaching guide was easy to use. However, when probed, many teachers could not recollect what they had learned during the training nor could they recall in which year they were trained on NALAP.

The most recent training on the integrated approach took place in May 2014. This training on the integrated approach to literacy was also insufficient. The validation meeting results shown in Figure 29 indicate that all 20 teachers strongly agree (12) or agree (8) that the training was inadequate. Similar to the NALAP training, trainers received a five-day training on the full training manual and content while teachers received a half-day orientation to the new approach due to budget constraints. The assumption of the trainers when designing the workshop

was that, not much had changed since the original NALAP training, except for introduction of English vocabulary during the L1 lesson and integration of other subject content into the language course, and thus one day should have sufficed. However, classroom observations and interviews revealed that teachers did not feel completely comfortable preparing lessons according to the new approach or mixing L1 and L2 simultaneously. Some teachers continued teaching L1 for 60 minutes and L2 for 30 minutes because they thought mixing the languages confused students. Others translated every sentence into English and L1, but wrote the English terms on the chalkboard. A few teachers switched back and forth between lessons, interjecting an English rhyme in the middle of the Ghanaian lesson to stimulate students. The evidence shows that the training on NALAP and the new integrated approach were both insufficient to achieve consistent and systematic implementation across the district.

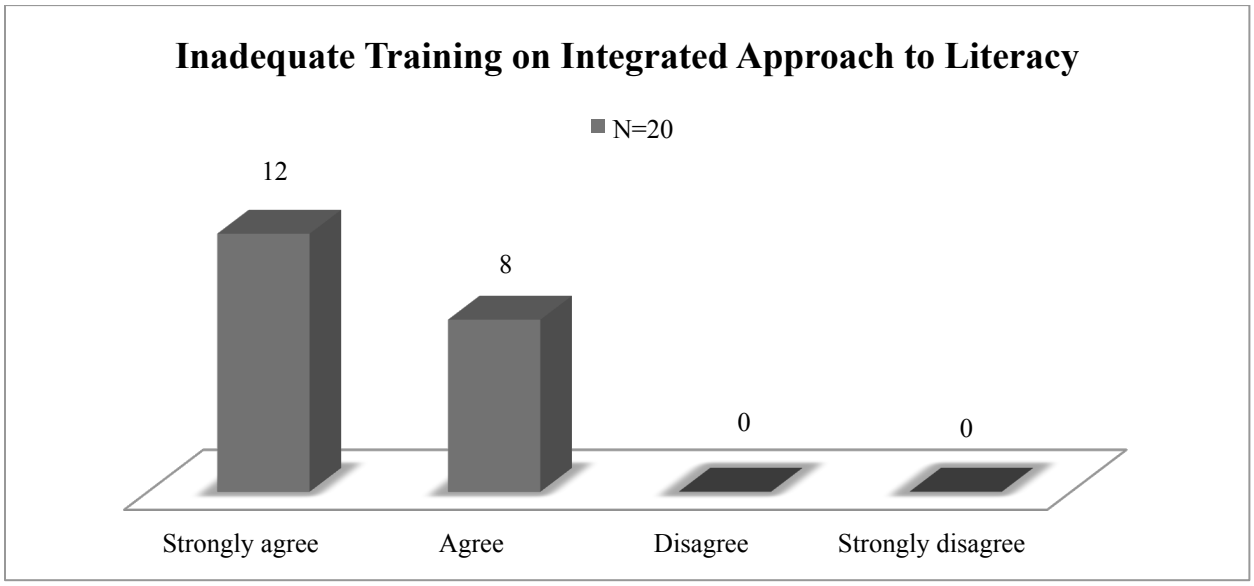


Figure 29. Validation meeting: Inadequate training on integrated approach to literacy

Professional development causes not validated. All of the professional development assumed causes were validated.

Support Structures

Validated support structure causes. As shown in Table 26, three assumed support structure causes were validated.

Table 26.

Organizational Gaps: Support Structure Causes Validated

Type	Assumed Cause	Instrument	Results
Support structure	Lack of ongoing support and coaching on NALAP implementation in the classroom	Interview / Validation Meeting	17 of 20 teachers requested add'l support
Support structure	Limited opportunities to exchange ideas with other teachers	Survey / Interview	2.5 PD meetings per term
Support structure	Challenges adhering to the 90-minute timetable	Interview / Validation Meeting	Exhaustive Too many activities

The first assumed cause, lack of ongoing support and coaching on NALAP implementation in the classroom, was validated through interviews and the validation meeting. The interview findings showed that two-thirds of teachers (10 out of 15) have received coaching on implementing the NALAP methodologies in the classroom. In order of frequency, 31% of teachers have received coaching from peers, 19% from District Education Officers (including the KG Coordinator), 13% from Master Trainers or Head Teachers, and 6% from Circuit

Supervisors. Teachers receive mentoring support on an average of once per team; though many teachers requested additional support. The validation meeting results confirmed that 17 of 20 teachers agree or strongly agree that more coaching support on NALAP and the integrated approach is needed. Hence, the assumption is validated.

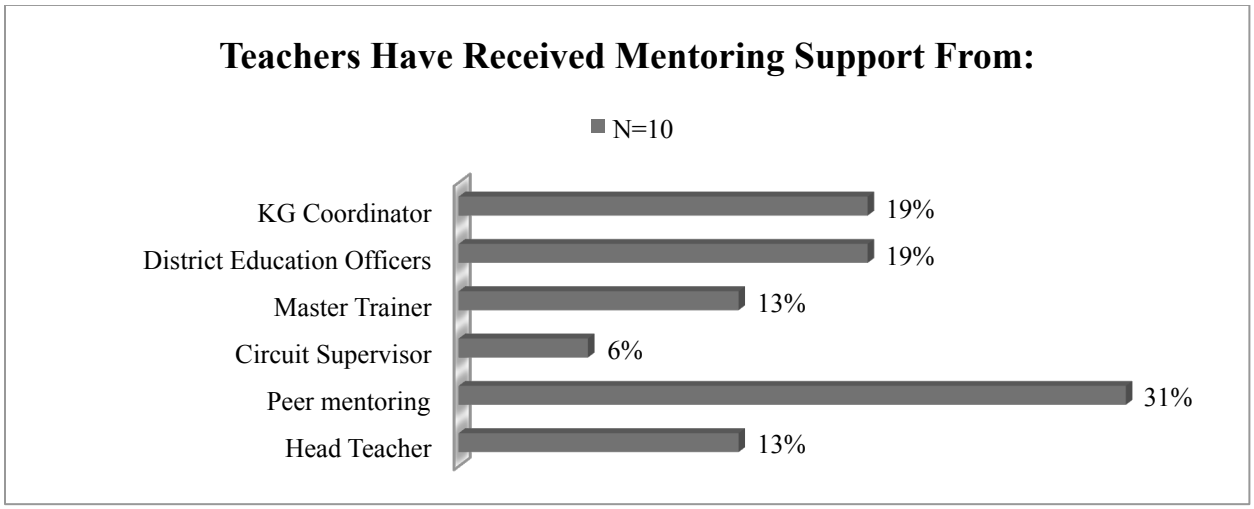


Figure 30. Interview findings: Mentoring support received

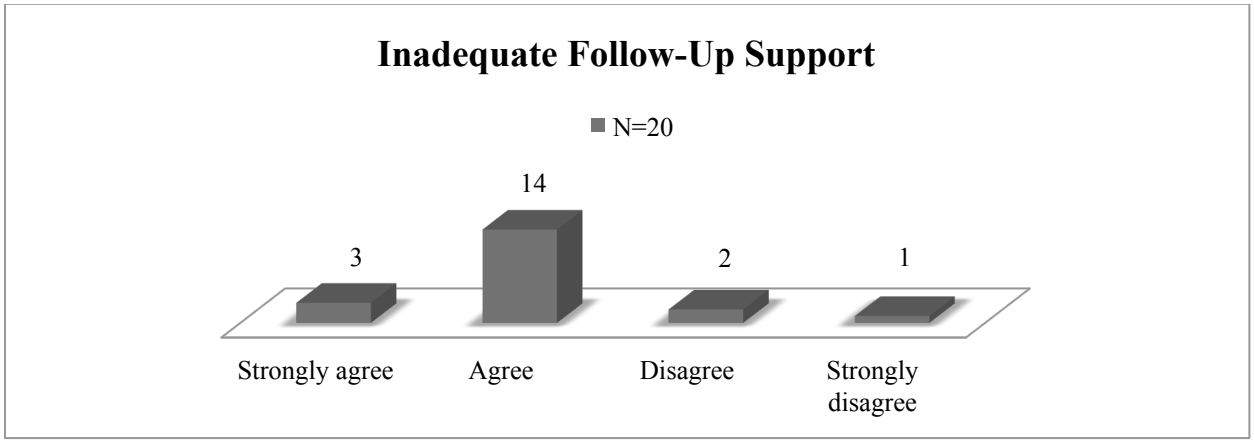


Figure 31. Validation meeting results: Inadequate follow-up support

The second assumed cause — limited opportunities to exchange ideas with other teachers — was validated through surveys and interviews. The survey results showed that 11 out of 15 teachers have attended professional development meetings. On average, teachers attended 2.5 meetings per term. During meetings, 42% of teachers share ideas, about 30% practice lessons, and less than 20% critically reflect on their teaching. The interviews found that teachers often prepare lessons at home on their own time due to heavy teaching loads. In only one school, two KG teachers attended weekly lesson planning sessions with the Head Teacher and peer teachers to share challenges, troubleshoot, and develop joint lesson plans. Thus, the assumption is validated because the majority of teachers rarely meet to reflect, practice teaching, and develop lesson plans for NALAP classes.

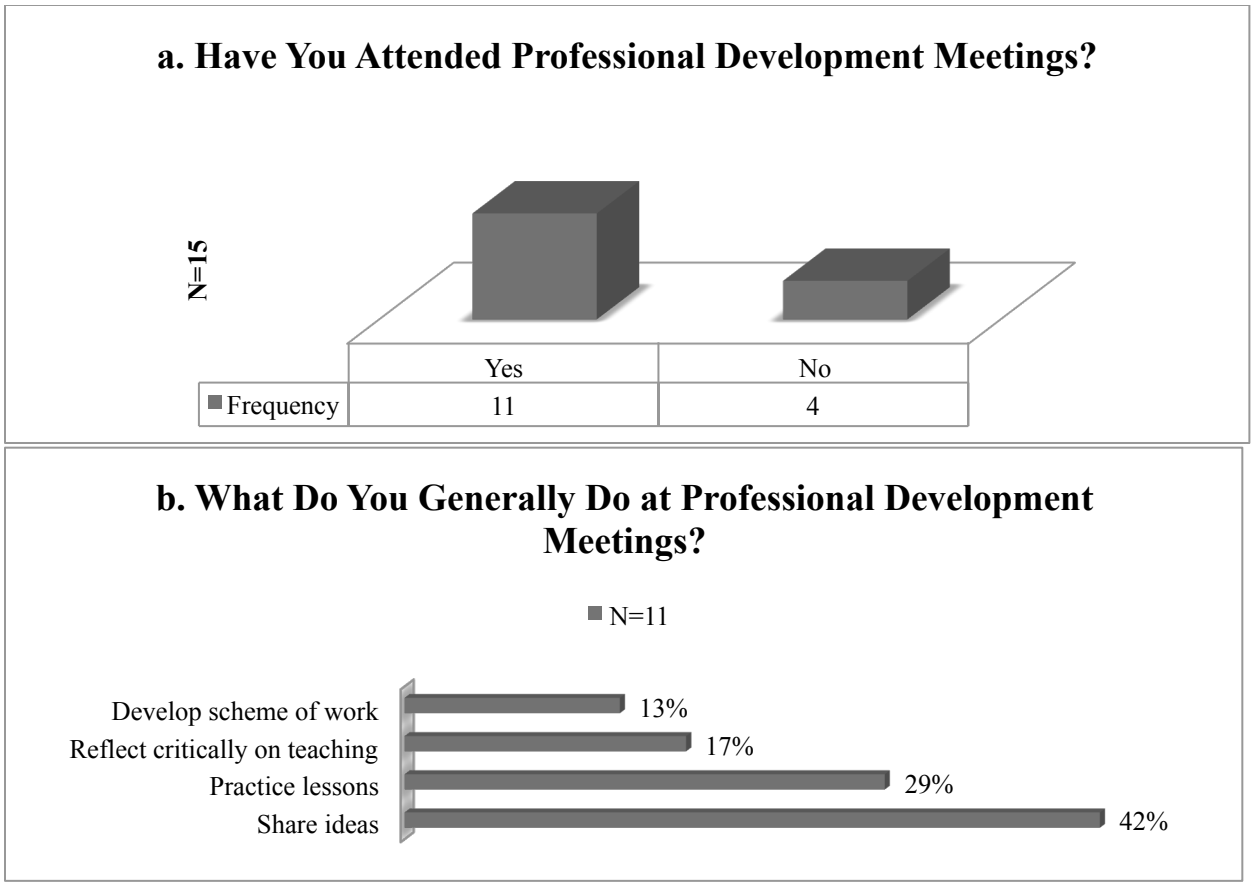


Figure 32. Survey results: Participation in professional development meetings

The third assumed cause that teachers had challenges adhering to the 90-minute timetable was validated. The average class time is 83 minutes; yet, the majority of teachers stressed that the activities are exhaustive for both the teachers and students. According to teachers interviewed, students get bored and tired after 60 minutes. One of the key weaknesses of NALAP as cited by teachers is that, there are too many steps, topics, and materials to integrate into the lesson. When teachers attempt to follow the Teacher's Guide and Workbook Guide, they run out of time. As a result, they must push topics and steps into the next day or week. Translating between the two languages also makes it difficult to complete tasks within the time allocations. Figures 33 and 34 show the results of the validation meeting. As illustrated, all teachers agreed that NALAP is exhaustive: 17 of 20 teachers indicated that there are too many steps and activities in the teacher's guide. Therefore, this assumption is validated.

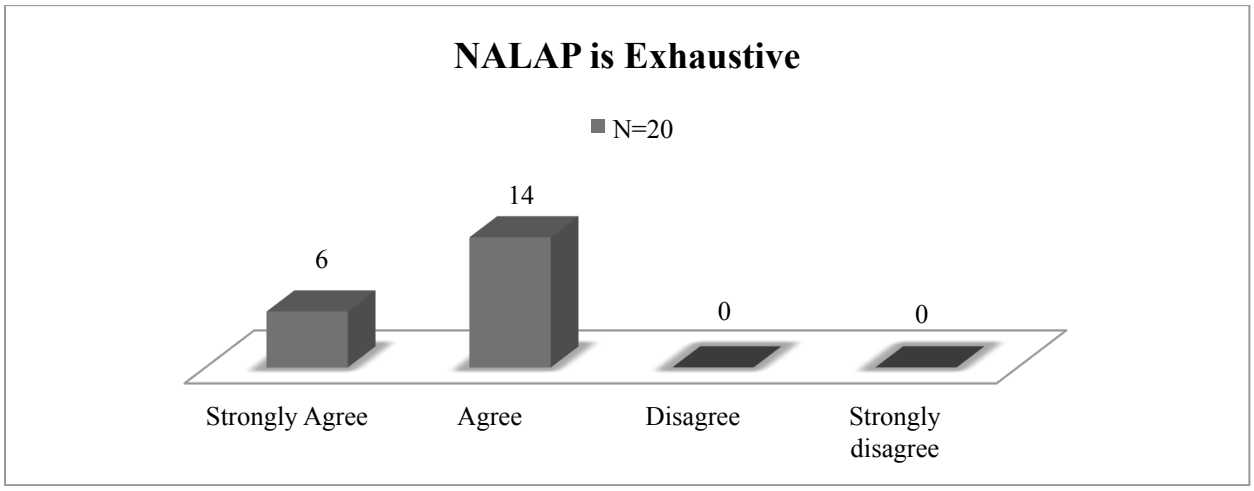


Figure 33. Validation meeting results: NALAP is exhaustive

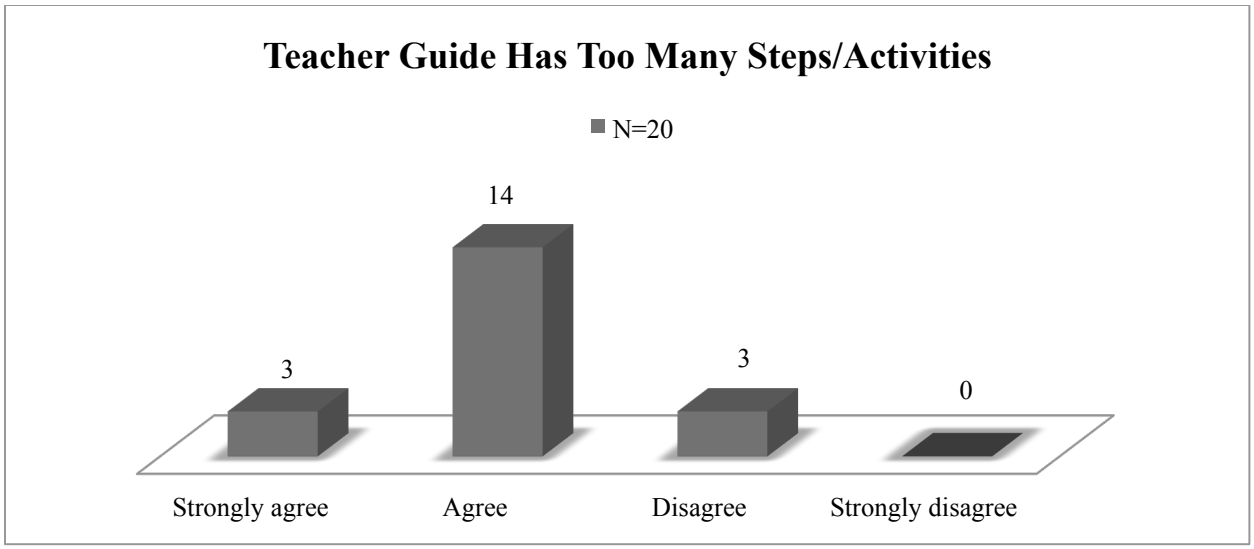


Figure 34. Validation meeting results: Teacher guide has too many activities

Support structure causes not validated. All of the support structure causes were validated.

Synthesis of Organizational Results and Findings

There were nine organizational causes verified through the results, findings, and validation meeting. These validated causes are illustrated in Table 27.

Table 27.

Organizational Gap Assumed Causes Validated

Organization	Assumed Cause	Validated	New Causes
Resources	Insufficient student textbooks	√	
Resources	Inaccurate translation in Akuapem Twi Big Book		√
Curriculum Alignment	Teacher guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening	√	
Curriculum Alignment	Reading methodology and five key skills are not explicitly described in the teacher's guide	√	
Prof. Dev.	Insufficient courses on reading instruction in the teacher college	√	
Prof. Dev.	Limited opportunities for teaching reading during teaching practicum	√	
Prof. Dev.	Insufficient training to master NALAP methodologies	√	
Support Structure	Lack of ongoing support and coaching on NALAP implementation in the classroom	√	
Support Structure	Limited opportunities to exchange ideas with other teachers	√	
Support Structure	Challenges adhering to the 90-minute timetable (90-minute lessons are too exhaustive)	√	

Firstly, in terms of resources, there are sufficient teacher's guides and TLMs, but an insufficient number of pupil textbooks and workbooks to meet the 1:1 textbook per pupil ratio. The interviews revealed that the Big Books were inaccurately translated into Akuapem Twi and thus some vocabulary words were incorrect. This could potentially affect how teachers use the books and whether or not they point to the words as they read aloud. Secondly, document

analysis revealed that the NALAP milestones and reading skills are not explicitly described in the NALAP teacher guide or in teachers' lesson plans. Thus, there is a misalignment between the curriculum and the teaching materials. With regards to professional development, results verified that pre-service and in-service trainings do not adequately prepare teachers to teach reading skills in the early grades. Both the NALAP training in 2010 and the Integrated Approach to Literacy introduced in 2014 insufficiently trained over half of teachers. As a result, teachers have not mastered the reading methods, lesson planning, or time management skills and are unable to effectively adhere to the 90-minute timetable. Teacher effectiveness is further hampered by a lack of on-going support, coaching, and opportunities to exchange ideas with peers on effective NALAP reading instruction. During the validation workshop, the District Education Officers took note of these challenges and offered to provide an intensive workshop to revisit lesson planning according to the new integrated approach.

Summary of Validated KMO Causes

The research confirmed knowledge and organizational barriers identified in the literature review. Teachers lack factual and procedural knowledge, resources, professional development and materials aligned with the curriculum. The motivational gaps, such as lack of confidence in teaching reading and using child-centered approaches, reflect the knowledge gaps. Thus, tackling the knowledge barriers will likely increase confidence and motivation. Considering that past teacher-training programs have had minimal impact, a comprehensive, high-quality teacher training program linked to reading skills, targeted instruction based on formative assessment, and milestones could address the organizational and knowledge gaps. An in-depth literature review will be conducted in Chapter 5, and research-based solutions will be developed for addressing the root causes of the teacher performance gap.

CHAPTER 5:

SOLUTIONS, IMPLEMENTATION AND EVALUATION

The purpose of this chapter is to present evidence-based recommendations for addressing the validated knowledge, motivation, and organization causes reported in Chapter 4 that prevent teachers from effectively implementing NALAP reading lessons. In particular, Chapter 5 responds to the second research question, "What are the potential knowledge, motivation, and organizational solutions for first grade teachers to adhere to the set standards in the NALAP teacher guide?"

This chapter has been divided into four sections. The first section presents the validated causes and the rationale for selecting the key causes. The second section provides solutions from applied research theories, which demonstrate the relevance, applicability and effectiveness of the solutions in closing the gap. The third section outlines an implementation plan, which describes integrated solutions for addressing the KMO barriers. Finally, an evaluation plan is presented in the fourth section, which provides guidance for implementing the proposed solutions and assessing progress towards achieving the expected outcomes.

Validated Causes Selection and Rationale

In a full gap analysis, solutions would be provided for all validated causes identified through the research. Thus, ideally, there would be 21 solutions to address the 21 causes validated in Chapter 4. Since this is likely not cost-effective or feasible, a systematic process was applied for narrowing down the number to the most significant causes affecting the teacher performance gap. The causes were ranked according to criteria, and a mean score was calculated to determine their overall ranking.

Three heuristics were used for ranking the causes according to their significance: 1) the gravity of the problem, measured by the percentage of teachers facing the challenge; 2) the most feasible problems to solve determined by level of difficulty; 3) the problems that would have the greatest impact on closing the KMO gaps. The criteria in Table 28 were used to rank each validated cause from 1-4 in descending order of significance. For instance, if 80% of teachers were affected by the issue, it was the least difficult to address, and most impactful on closing the KMO gap, then the validated cause received a number one ranking for all three criteria.

Table 28.

Ranking Criteria

	Criteria 1	Criteria 2	Criteria 3
Ranking	Percent of teachers facing the challenge	Most Feasible	Greatest impact on closing the KMO gap
1	80-100%	Least difficult	Most impactful
2	70-79%	Somewhat difficult	Impactful
3	50-69%	Difficult	Neutral
4	30-49%	Very difficult	Not impactful

Table 29 shows how the mean scores were calculated for the three criteria. For instance, the mean score for the first validated knowledge cause is 1.0. This score was calculated by averaging the scores for each criterion. In this case, the score was 1.0 for Criteria 1, 1.0 for Criteria 2, and 1.0 for Criteria 3 for a total of 3.0 points divided by three, which equals 1.0.

Table 29.

Validated KMO Gaps Ranked According to Selection Criteria

Knowledge Category	Validated Cause	Criteria 1: Percent of teachers facing the challenge	Criteria 2: Most feasible	Criteria 3: Greatest impact on closing KMO gap	Mean Score
Factual	Teachers do not know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (KF1)	1 (100%)	1	1	1.0
Factual	Teachers do not know the standards and milestones for reading and bi-literacy in KG and P1 (KF8)	1 (100%)	1	2	1.3
Procedural	Teachers do not know how to integrate the five skills to teach reading fluency and comprehension (KP)	1 (80%)	2	1	1.3
Procedural	Teachers do not know how to explicitly teach phonics and decoding skills (KP2)	2 (71%)	2	1	1.6
Procedural	Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones (KP9)	1 (100%)	1	1	1.0
Procedural	Teachers do not know how to use child-centered pedagogies (e.g., pair share, small group work) (KP12)	1 (84%)	1	1	1.0
Procedural	Teachers do not know how to develop lessons according to the new integrated approach (new)	1 (80%)	3	1	1.6
Procedural	Teachers do not know how to effectively assess students' reading progress (KM10)	1 (100%)	2	1	1.3

Table 29, continued

Motivation Category	Validated Cause	Criteria 1 Percent of teachers facing the challenge	Criteria 2 Most feasible	Criteria 3 Greatest impact on closing KMO gap	Mean Score
Self-efficacy	Teachers are not confident in their ability to teach reading (M8)	4 (33%)	1	1	2.0
Self-efficacy	Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work) (M9)	3 (50%)	2	2	2.3
Attribution	Teachers believe that students' reading proficiency is largely due to factors beyond their control (M7)	3 (66%)	3	3	3.0

Table 29, continued

Organizational Category	Validated Cause	Criteria 1 Percent of teachers facing the challenge	Criteria 2 Most Feasible	Criteria 3 Greatest impact on closing KMO gap	Mean Score
Resources	Insufficient student textbooks (O1)	1 (93%)	2	1	1.3
Resources	Inaccurate translation in Akuapem Twi Big Book (O13)	1 (100%)	3	3	2.3
Curriculum Alignment	Teacher guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening (O3)	1 (100%)	2	2	1.6
Curriculum Alignment	Reading methodology and five key skills are not explicitly described in the teacher's guide (O11)	1 (100%)	1	1	1.0
Prof. Dev	Insufficient courses on reading instruction in the teacher college (O8)	1 (80%)	2	1	1.3
Prof. Dev	Limited opportunities for teaching reading during teaching practicum (O9)	2 (73%)	2	1	1.6
Prof. Dev	Insufficient training to master NALAP methodologies and integrated approach (O4)	3 (53%)	1	1	1.6
Support Structure	Lack of ongoing support and coaching on NALAP implementation in the classroom (O6)	1 (85%)	1	1	1.0
Support Structure	Limited opportunities to exchange ideas with other teachers (O7)	1 (86%)	1	1	1.0
Support Structure	Challenges adhering to the 90-minute timetable (90-minute lessons are too exhaustive) (O10)	1 (85%)	1	1	1.0

Mean scores ranging between 1.0 and 2.0 were selected for the next phase of solutions development. Those outside of this range were considered less significant or difficult to address. The selection process revealed that 18 validated causes have the greatest impact on closing the knowledge, motivation and organizational gaps, and three were considered insignificant or difficult to address. The three validated causes that did not meet the threshold were: (1) teachers are not confident in managing classrooms, (2) teachers believe that students' reading proficiency is largely due to factors beyond their control, and (3) inaccurate translation in the Akuapem Twi Big Book. The first two causes are difficult to measure. Unlike reading skills, which can be directly observed, confidence in managing classrooms is more difficult to measure since teachers will choose to use activities they are comfortable with during classroom observations. Teachers' beliefs are also difficult to assess. The third cause, correcting translations in published children's books, is difficult to address without the support and resources of the Ministry of Education, or a donor. It would be easier to provide additional supplementary materials to address the gaps.

Solutions for the 18 causes will be developed in the following sections and organized by KMO category.

Solutions for Knowledge and Skills Gaps

The solutions provided in this section will be based on three sources of research. First is the Anderson and Krathwohl (2001) framework, which is a revision of the original Bloom's taxonomy. The framework classifies four types of knowledge and cognitive processes for learning, teaching and assessing: factual, procedural, conceptual and metacognitive. The teachers demonstrated lack of factual and procedural knowledge. Therefore, a solution to address these cognitive dimensions will be provided. Secondly, knowledge and skill enhancements will be recommended based on Clark and Estes' (2008) gap analysis framework. There are four possible

solutions (information, job aids, training or education) depending on relevant past experience, expertise, and knowledge from routine practice. Thirdly, an extensive literature review will inform how the recommended solutions can be adapted to fit the context of reading instruction in early primary school in Ghana.

Factual Knowledge Gaps and Solutions

The two factual knowledge gaps the teachers demonstrated were:

1. Teachers do not know the five key elements of effective reading instruction (phonemic awareness, phonics, fluency, vocabulary, and comprehension)
2. Teachers do not know the standards and milestones for reading and bi-literacy in kindergarten (KG1 and KG2) and first grade (P1)

To address these factual knowledge gaps, teachers will need concrete knowledge of the reading terminology and specific details of the five key elements (Anderson & Krathwohl, 2001). They will also need to know the milestones for reading and bi-literacy for K-3, so that they can then transfer this knowledge to lesson planning. Although teachers have a teacher's guide and job aids (conversational posters, big books, alphabet cards) to implement the lesson plans, they lack sufficient knowledge of reading terminology, the importance of phonemic awareness and phonics, and the milestones. When teachers have job aids, but require a higher level of knowledge and skills to successfully apply the methodology, Clark and Estes (2008) recommend "training" as a solution. The validated factual knowledge gaps and proposed solutions are illustrated in Table 30.

Table 30.

Factual Knowledge Gaps and Solutions

Factual Knowledge Gaps	Proposed Solutions
Teachers do not know the five key elements of effective reading instruction	Provide training on key reading skills
Teachers do not know the standards and milestones for reading and bi-literacy in kindergarten (KG1 and KG2) and first grade (P1)	Provide training on the NALAP reading and bi-literacy milestones for KG and P1

Solution 1: Provide training on reading skills and milestones. The recommended solution is to provide training on the key reading skills and milestones to increase factual knowledge and understanding. The training should include definitions on reading skills plus guided practice on how to teach them, along with corrective feedback to help teachers master teaching the key concepts (Clark & Estes, 2008).

Procedural Knowledge Gaps and Solutions

There were six procedural knowledge gaps that were validated:

1. Teachers do not know how to integrate the five skills to teach reading fluency and comprehension
2. Teachers do not know how to explicitly teach phonics and decoding skills
3. Teachers do not know how to use child-centered pedagogies (e.g., pair share, small group work)
4. Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones

5. Teachers do not know how to develop lessons according to the new integrated approach
6. Teachers do not know how to effectively assess students' reading progress

To address these procedural knowledge gaps, teachers need to know the criteria for determining when to use appropriate procedures (Anderson & Krathwohl, 2001). For example, they need to know when to teach each specific reading skill, how and when to explicitly teach phonics or decoding, and when and how to use child-centered pedagogies. They also need to know how to develop lessons in the Ghanaian language that are aligned with the NALAP milestones and the integrated curriculum. Finally, teachers need to know how to assess students' reading progress, and when the appropriate time to do so is. Solutions have been developed for these knowledge gaps (See Table 31).

Table 31.

Procedural Knowledge Gaps and Solutions

Procedural Knowledge Gaps	Proposed Solutions
Teachers do not know how to integrate the five skills to teach reading fluency and comprehension Teachers do not know how to explicitly teach phonics and decoding skills Teachers do not know how to use child-centered pedagogies (e.g., pair share, small group work)	Provide in-service training and coaching on how to teach the five key reading skills and child-centered pedagogies
Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones Teachers do not know how to develop lessons according to the new integrated approach	Provide in-service training and coaching on lesson plan development
Teachers do not know how to effectively assess students' reading progress	Develop continuous assessment monitoring tool and train teachers in its usage to track pupil reading progress

Solution 2: Provide reading teachers with in-service training and coaching on how to teach the five key reading skills through child-centered pedagogies. Procedural knowledge gaps in reading instruction and child-centered approaches indicate teachers need demonstration, guided practice, and corrective feedback to perfect the new methodologies (Clark & Estes, 2008). The proposed solution is to provide in-service training that includes demonstration of the key reading skills and child-centered methodologies, observation of practice and corrective feedback, and continued coaching at the school level. It is important to move from training to coaching to independent practice, giving teachers the flexibility and autonomy to innovate as appropriate according to the needs and abilities of students (Brozo & Sturtevant, 2009).

In terms of the training content, teachers should be trained in the child-centered, balanced reading approach so they know when to apply teacher-guided phonics instruction and child-centered whole-language approaches. A child-centered approach immerses students in authentic reading and writing experiences first, and then teaches essential skills within the context (Johnson, 2015). According to Johnson (2015), teachers should use planned, systematic, direct and explicit instruction for short periods of time (30 seconds to no more than five minutes) to teach alphabetic principles, phonics and phonemic awareness, coupled with developmentally appropriate activities to reinforce the letter-sound. Thus, reading skills should be taught in the context of authentic reading and writing followed by brief amounts of explicit instruction and developmentally appropriate activities, such as play, especially for children in pre-school and kindergarten.

Additionally, it is important to train teachers in how to manage time effectively and facilitate complex activities, such as pair share, small group activities, the community learning circle, and other activities in the teacher's guide that are unfamiliar and rarely applied. According

to Brozo and Sturtevant (2009, p. 6), "teachers in successful schools are knowledgeable about child-centered approaches, are able to use time effectively when managing child-centered activities, and are expert at managing complex activities."

Principals, trainers, literacy coaches and district education officers should all be trained in the reading components, milestones and child-centered approaches as well so that they may be equipped with the knowledge and expertise to support teachers. They should receive a one-day additional training on how to use assessment tools and provide corrective feedback, modeling and praise for teachers' efforts (Clark & Estes, 2008; Pintrich, 2003), so that they can fulfill their roles as mentors.

Solution 3: Provide in-service training and coaching on lesson plan development. Teachers also need support planning lessons that focus on reading skills and milestones, and that integrate other subjects. Hence, teachers should be provided with opportunities to practice developing lessons linked to the NALAP milestones and the integrated curriculum during the training workshops. This should be followed with coaching at the school level. Lesson plans should be reviewed during school visits and classroom observations, and corrective feedback provided until lessons reflect the reading skills and milestones. Principals, trainers, literacy coaches and district education officers should all be trained to review the lesson plans for proper components and to provide corrective feedback and praise for teachers' efforts (Clark & Estes, 2008; Pintrich, 2003).

Solution 4: Develop a continuous assessment monitoring tool and train teachers in its usage to track pupil reading progress. The results also indicated that teachers did not have any job aids for assessing students' reading progress. Hence, a monitoring tool or continuous assessment form is recommended for teachers to use to evaluate their students' progress and to

customize lessons to meet the needs of individual learners (Wren, 2003). Johnson (2015) suggests teachers track the scope and sequence of skills or letters taught in a chart or notebook to monitor teachers' progress against the curriculum. Teachers can also keep a chart or checklist to record when students demonstrate mastery of each sub-skill. Therefore, teachers should be trained to track the sequence of reading skills taught and the proficiency of students in reading, writing, and speaking the language according to the NALAP milestones and lesson objectives.

Solutions for Motivation Causes

Motivation Gap

The data revealed that teachers do not consistently apply the NALAP reading skills because they do not feel confident in their ability to teach reading. According to Pintrich's research (2003), this is a manifestation of a lack of self-efficacy. The solution will need to increase teachers' self-efficacy, or the belief in oneself to teach reading effectively.

Solution 5: Assign specific, short-term achievement goals, provide corrective feedback, and praise efforts to build teachers' confidence. As people's belief about whether they have the skills required to succeed greatly affects their commitment to the task and the amount of mental effort they invest in their work (Clark & Estes, 2008), the recommended solution is to provide teachers with training on the specific reading skills, and then to develop specific, short-term, but achievable goals for teachers to master the new methodologies. This can be facilitated through setting clear objectives and agreeing on activities for teachers to teach during demonstration lessons. Subsequently, trainers and coaches can provide constructive feedback that encompasses praise for their efforts, clear and accurate feedback (Pintrich, 2003) balancing comments about strengths and weaknesses (Bandura, 1997), and empathy and encouragement acknowledging challenges teachers are facing in the classroom (Clark & Estes,

2008). It is important to provide individual monitoring and private feedback for all teachers, as this increases accountability (Clark & Estes, 2008; Bandura, 1997). Over time, as teachers begin to gain confidence in teaching the reading skills, the trainers can gradually reduce the amount of instructional support and set more concrete and challenging goals for teachers to pursue independently (Bandura, 1997). The validated motivational gaps and solutions are summarized in Table 32.

Table 32.

Motivational Gaps and Solutions

Motivational Gaps	Proposed Solutions
Teachers do not consistently apply the NALAP reading skills because they do not feel confident in their ability to teach reading (lack of self-efficacy)	Assign specific, short-term, yet achievable goals, provide corrective feedback, and praise efforts to build teachers' confidence

Solutions for Organization Causes

Organizational structures, policies or resources that are not aligned with the goals of the reform can impede teachers' performance and achievement of the reform policy (Rueda, 2011). The case study found three organizational gaps, namely resources, curriculum alignment, and teacher professional development (both pre-service and in-service training). The solutions for organizational causes have been organized into these three constructs reflecting the Ghana NALAP program gaps.

Resource Gaps

When a policy is not supported by effective resources, this creates an organizational gap and barrier to achieving the performance goal (Clark & Estes, 2008). The research findings revealed that there were insufficient student textbooks and literacy workbooks for a one-to-one pupil to book ratio. In other words, students in KG do not have their own literacy workbook for drawing pictures, letters or picture reading/storytelling. Students in P1 do not have their own books for reading in the local language. As 14 of 15 teachers stressed, this resource gap hinders the impact of the NALAP program on student reading achievement. Table 33 presents the proposed solution to address the resource gap.

Table 33.

Resource Gaps and Solutions

Resource Gap	Proposed Solution
Insufficient textbooks and literacy workbooks for a one-to-one pupil to book ratio	Provide low-cost, linguistically appropriate pupil-reading books for KG1 and P1 classrooms using local resources that can be easily reproduced

Solution 6: Provide low-cost, linguistically appropriate reading books for KG1 and P1 classrooms using local resources that can be easily reproduced. There are two possible solutions. One is for World Education to work with the Ministry of Education to leverage public or provide resources to purchase greater quantities of the pupil books and distribute them to the schools lacking sufficient quantities. The other option is for World Education and the Ministry of

Education to develop low-cost, linguistically appropriate reading books for KG and P1 classrooms using local resources that can be easily reproduced. This recommendation is based on the principle that organizations (e.g., schools) require adequate resources and tangible supplies to achieve their goals (Clark & Estes, 2008; Rueda, 2011).

Curriculum Alignment

The study found two organizational gaps related to curriculum alignment:

- Teacher's guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening
- Reading methodology and five key skills are not explicitly described in the teacher's guide

As teachers lack knowledge of the five key reading skills and NALAP milestones, this information should be explicitly spelled out in the teacher's guide.

Solution 7: Provide teachers with a supplementary guide to the teachers' guide that explicitly describes the five key reading skills and the milestones with direct links to the lessons. To ensure that all teachers understand the five key reading skills and milestones, and their relationship to the lessons in the teachers' guide, it is recommended to provide teachers with a separate supplemental guide that describes the five key reading skills and the milestones, and breaks down which skills or milestones are taught in each lesson. This recommendation is guided by Dixon (1994), who suggested "aligning the structures and processes of the organization with goals" (Clark & Estes, 2008, p. 119). A supplementary guide is recommended because it is less costly than revising and re-printing all teachers' guides, which were recently printed and distributed in 2014. A summary of the validated curriculum alignment gap and proposed solution is illustrated in Table 34.

Table 34.

Curriculum Alignment Gaps and Solutions

Curriculum Alignment Gap	Curriculum Alignment Solution
Teacher guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening Reading methodology and five key skills are not explicitly described in the teachers' guide	Provide teachers with a supplementary guide to the teachers' guide that explicitly describes the five key reading skills and the milestones with direct links to the lessons

Professional Development (Pre-Service Training)

The case study revealed two gaps in preparing primary school teachers to teach reading courses in the early grades:

- Insufficient courses on reading instruction in the teacher's college
- Limited opportunities for teaching reading during teaching practicum

The majority of teachers reported that they had not completed any courses specifically focused on early grade reading instruction or the NALAP principles while studying in the teachers' college. Although they spent an average of 8 weeks conducting a teaching practicum, the grades and topics varied. Only four of 15 teachers specifically taught reading courses. For many, the NALAP training was their first introduction to bilingual reading instruction. When newly qualified teachers began working in the early primary grades, they were not well prepared to teach reading and had to rely on other teachers, the teaching guide, and the short in-service NALAP training, which was insufficient for them to master the new methods. These findings indicate that teachers' colleges are failing to produce newly qualified teachers with the essential

skills for effective reading instruction. Table 35 displays the pre-service training gaps and solutions.

Table 35.

Pre-Service Training Gaps and Solutions

Pre-Service Training Gaps	Pre-Service Training Solutions
Insufficient courses on reading instruction in the teacher college Limited opportunities for teaching reading during teaching practicum	Integrate the NALAP early grade reading instructional methods and materials into pre-service training to produce qualified reading teachers.

Solution 8: Integrate the NALAP early grade reading instructional methods and materials into pre-service training to produce qualified reading teachers. The National Research council recommends providing "adequate knowledge, skills and motivational support for everyone" involved in the reform effort (Clark & Estes, 2008, p. 118). Teachers in pre-service training should be equipped with scientifically based content knowledge and skills so that they are well prepared to achieve policy goals. Thus, the proposed solution is to integrate the NALAP early grade materials and methods into teacher training courses, so that teachers are equipped with the knowledge and skills necessary to effectively teach reading in accordance with the NALAP milestones and scientifically based reading instruction.

Professional Development (In-Service Training)

As shown in Table 36, there were four gaps in in-service teacher training that were validated:

- Insufficient training to master NALAP methodologies and integrated approach

- Challenges adhering to the 90-minute timetable because teachers and students become exhausted after 60 minutes
- Lack of ongoing support and coaching on NALAP implementation in the classroom
- Limited opportunities to exchange ideas with other teachers

A comprehensive solution has been developed to address these challenges (See Table 36).

Table 36.

In-Service Training Gaps and Solutions

In-Service Training Gaps	Proposed Solution
Insufficient training to master NALAP methodologies and integrated approach Challenges adhering to the 90-minute timetable Lack of ongoing support and coaching on NALAP implementation in the classroom Limited opportunities to exchange ideas with other teachers	Comprehensive continuous professional development program that includes: • In-service training on core reading skills, child-centered approaches and formative reading assessment • Coaching on how to explicitly teach reading skills and provide guided child-centered practice within the 90-minute class period • Development of professional learning communities that use student achievement data as the basis for instructional planning

Solution 9: Provide comprehensive and continuous professional development that includes in-service training, coaching, data use, and professional learning communities. To address the in-service training gaps, the proposed solution is a comprehensive and continuous professional development program that includes, in-service training on core reading skills, child-centered approaches, and formative assessment; coaching on how to explicitly teach reading

skills and provide guided child-centered practice within the 90-minute class period; and development of professional learning communities that use student achievement data as the basis for instructional planning. This integrated solution is based on the principle that comprehensive professional development programs are more effective than training because they focus on continuous career-long professional development and rely on active forms of learning (Villegas-Reimers, 2003). This program is described in detail below with supporting evidence of its effectiveness and applicability.

In-service training. It is widely cited in the capacity building research that teachers "rarely change their practice in significant ways as a result of participating in occasional or one-time expert-driven workshops" (Leu & Ginsberg, 2011, p. 4). A meta-analysis of 1,300 students representing the entire spectrum of professional development programs (Yoon, Duncan, Lee, Scarloss, & Shapley, 2007) found that one-shot workshops, which are less than 14 hours had no effect on student achievement. On the other hand, nine different experimental research studies of teacher professional development all found that extended duration programs, particularly those with 80 hours of training or more, were positively associated with improvements in teacher performance and student achievement (Corcoran, McVay, & Riordan, 2003; Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Building on this research, the proposed recommendation is a continuous professional development program that includes annual district-wide in-service training workshops of five days in length (40 hours) and ongoing school or cluster-based training, at least once per term (12 hours per training). Teachers should not only be trained in the core reading skills and phonics teaching methods, but also in assessment methods and the use of student reading performance data to guide instructional planning.

In terms of training design, the workshops should incorporate adult training principles, such as building on teachers' previous knowledge (Mezirow, 1991) and providing opportunities for teachers to actively participate in learning the new knowledge and skills. Such activities might include reviewing the lessons, watching videos of effective reading instruction, role-playing, practice teaching sessions, and observing classes of exemplary teachers (Gulamhussein, 2013).

Numerous researchers have found that when experts demonstrate the new practice, teachers are more open to accepting the new concept and applying it (Cohen & Hill, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Garet, Porter, Desimone, Birman & Yoon, 2001; Penuel, Fishman, Yamaguchi, & Gallagher, 2007; Saxe, Gearhart, & Nasir, 2001; Snow-Renner & Lauer, 2005; Supovitz, Mauyer, & Kahle, 2000). Therefore, World Education could recruit early grade reading experts to lead the training workshops and demonstrate effective reading instruction.

Finally, building on lessons learned in Abu Dhabi, United Arab Emirates, competency-based training is recommended. Teachers should be assessed against competencies to determine their knowledge and skills gaps. Subsequently, teachers could be grouped according to their knowledge and skill levels and provided with cluster-based training workshops. Individualized competency-based training is a fairly innovative initiative that will be tested in Abu Dhabi (Dr. J. Mohaidat, personal communication, April 22, 2015) and may be more cost-effective than general training.

Coaching. Traditional professional development programs operate under a faulty assumption that once teachers receive the knowledge, they will automatically change their teaching practices (Gulamhussein, 2013). According to Gulamhussein (2013), when teachers

receive no follow-up assistance with implementing a new technique after being trained, "they tend to abandon the practice and revert to business as usual" (p. 12). This is known as the "implementation dip" (Gulamhussein, 2013, p. 12). In fact, research shows that teachers must practice a new skill 20 times to master it, or more than 20 times if it is exceptionally complex (Gulamhussein, 2013). Coaching is an effective way of supporting teachers in consistently practicing and mastering the new strategies. Studies have shown that coaching is effective not only at changing teacher practice, but also at increasing student achievement (Coburn & Woulfin, 2012; Showers, 1984; Stephens et al., 2007). For example, South Carolina's Reading Initiative provided instructions to teachers on research-based literacy practices along with individual coaching; "classes with coached teachers made higher gains on standardized reading exams than peers who were taught by non-coached teachers" (Gulamhussein, 2013, p. 21; Stephens et al., 2007).

As the research suggests, the second step in the professional development program is literacy coaching. Following the district-wide training, literacy coaches will provide follow-up support in five schools at least once a week to assist teachers with lesson planning, teaching literacy skills, facilitating child-centered activities, and assessing students' progress. When introducing new strategies, literacy coaches will provide demonstrations on how to explicitly teach the reading skills, and provide guided child-centered practice within the 90-minute class time. Once teachers have grasped the new concepts, teachers will practice applying the skills in the classroom. The teacher and literacy coach will meet to discuss the planned strategy and the teacher will develop the lesson plan. The literacy coach will then return to observe the class and will hold a debriefing session to discuss how well the lesson was taught and how it could be

improved (Gulamhussein, 2013). The literacy coach will also review the lesson plan and provide clear and accurate feedback on progress achieved (Pintrich, 2003).

This model is based on the directive model of coaching, which has proven effective for working with inexperienced teachers in developing countries "who can benefit from in-depth, focused instruction and feedback from knowledgeable and experienced coaches" (Bean, 2014, p. 10). In this model, teachers gain skills, knowledge and confidence from intensive interaction with literacy experts, on key skills such as reading instruction, reading assessment, and evidence-based practices. Using a gradual release approach, coaches initially model strategies and make prescriptive recommendations. As teachers become comfortable with the new methodologies, coaches use probing questions and engage teachers in problem solving. In the final stage, coaches assume a collegial role in which they affirm decisions made by teachers, offer praise and engage them in supporting other teachers (Collett, 2012). In other words, the role of the coach transforms from consultative to increasingly collaborative, and, instructional decision-making shifts from the coach to the teacher (Collett, 2012).

Because teachers are more likely to adopt a practice and change their underlying beliefs about how to teach something, only after they have seen success with students (Guskey, 2002), teachers should be provided with continual coaching, modeling and support until they begin to see the methods having a positive effect on their students' performance.

Professional learning communities that use student achievement data as the basis for instructional planning. Major policy reforms such as NALAP, require sustained changes in teacher practice at the school level. Long-term change occurs most frequently when new learning is combined with structured follow-up practice and group reflection (Leu & Ginsberg, 2011). Hence, teachers should be provided with continuous opportunities to meet with other teachers,

discuss challenges, determine whether the teaching strategies are effective, and given the autonomy to modify the strategies according to the needs and performance of students. This type of professional learning community, which fosters communal learning, collegiality and collection action, has been found to be exceptionally correlated with student learning outcomes (Gulamhussein, 2013). In fact, when teachers use student achievement data as a basis for instructional planning, the effectiveness of teaching instruction improves as well as the impact on student achievement (Odden & Kelly, 2008). Based on this evidence, the proposed solution is to develop professional learning communities that use student achievement data as the basis for instructional planning.

The proposed recommendations can be implemented through Gulamhussein's two-stage professional learning community model. In this model, teachers are presented with artifacts (e.g., student achievement data), they discuss challenges, and then develop innovations to experiment with in the classroom (Gulamhussein, 2013). For instance, literacy teachers in grades KG-P1 could be presented with results from the Early Grade Reading Assessment or Ghana National Education Assessment. Teachers would engage actively in analyzing the student achievement data, identifying how they can connect the results to instructional challenges that they are facing in the classroom, and then identify ways to improve their teaching (Gulamhussein, 2013).

In the second stage of the model, teachers identify a chief area of concern and develop an "innovation" or strategy that the teachers agree to experiment with in the classroom (Gulamhussein, 2013). They then "reconvene to debrief how it went and how it could be improved, using student data from the lesson (e.g., quiz data, writing samples) to inform their decisions" (Gulamhussein, 2013, p. 23). Through this reflective process, teachers in essence begin to take on the role of coaches, supporting each other throughout implementation through

"feedback, observation and collective refining of strategies" (Gulamhussein, 2013, p. 24). Once teachers have arrived at an acceptable solution to the problem identified, they continue to assess other areas and identify new challenges. Effective professional development is ongoing, thus the professional learning community should be initiated by the literacy coach and supported by the school principal and MOESS district-level coordinators for literacy and kindergarten.

In conclusion, five principles that should inform the design of the professional development program are (Gulamhussein, 2013, pp. 14-17):

1. The duration of professional development must be significant enough to allow time for teachers to learn a new strategy and grapple with the implementation problem.
2. There must be support for a teacher during the implementation stage, which addresses the specific challenges of changing classroom practice.
3. Teachers' initial exposure to a concept should not be passive, but rather should engage teachers through varied approaches so they can participate actively in making sense of a new practice.
4. Modeling has been found to be highly effective in helping teachers to master a new practice.
5. The content presented to teachers shouldn't be generic, but instead specific to the discipline (reading) or grade level (K-1).

A summary of the knowledge, motivation and organization gaps and their corresponding solutions are illustrated in Table 37. The solutions have been grouped into four categories: training, coaching, materials development, and continuous professional development. These will be further integrated into one comprehensive program, which is described in the implementation section of Chapter 5.

Table 37.

Summary of KMO Gaps and Solutions

Gaps	Solutions
Knowledge	
Teachers do not know the five key elements of effective reading instruction	*Training*: Provide training on five key reading skills
Teachers do not know the standards and milestones for reading and bi-literacy in kindergarten and first grade	*Training*: Provide training on the NALAP reading and bi-literacy milestones for KG and P1
Teachers do not know how to integrate the five skills to teach reading fluency and comprehension Teachers do not know how to explicitly teach phonics and decoding skills Teachers do not know how to use child-centered pedagogies (e.g., pair share, small group work)	*Training and coaching*: Provide in-service training and coaching on how to teach the five key reading skills and child-centered pedagogies
Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones Teachers do not know how to develop lessons according to the new integrated approach	*Training and coaching*: Provide in-service training and coaching on lesson plan development
Teachers do not know how to effectively assess students' reading progress	*Materials development:* Develop continuous assessment monitoring tool and train teachers in its usage to track pupil reading progress
Motivation	
Teachers do not consistently apply the NALAP reading skills because they do not feel confident in their ability to teach reading (lack of self-efficacy)	*Coaching:* Assign specific, short-term, yet achievable goals, provide corrective feedback, and praise efforts to build teachers' confidence

Table 37, continued

Gaps	Solutions
Organization	
Insufficient textbooks and literacy workbooks for a one-to-one pupil to book ratio	*Materials development:* Provide low-cost, linguistically appropriate pupil-reading books for KG1 and P1 classrooms using local resources that can be easily reproduced
Teacher guides and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening Reading methodology and five key skills are not explicitly described in the teacher's guide	*Materials development:* Provide teachers with a supplementary guide to the teachers' guide that explicitly describes the five key reading skills and milestones with direct links to the lessons
Insufficient courses on reading instruction in the teacher college	*Comprehensive professional development program:* Integrate the NALAP early grade reading instructional methods and materials into pre-service training to produce qualified reading teachers
Insufficient training to master NALAP methodologies and integrated approach Challenges adhering to the 90-minute timetable (90-minute lessons are too exhaustive) Lack of ongoing support and coaching on NALAP implementation in the classroom Limited opportunities to exchange ideas with other teachers	*Comprehensive continuous professional development program* that includes: • In-service training on core reading skills, child-centered approaches and formative reading assessment • Coaching on how to explicitly teach reading skills and provide guided child-centered practice within the 90-minute class period • Development of professional learning communities that use student achievement data as the basis for instructional planning

Implementation Plan

The proposed solutions will be integrated and delivered through a five-year Continuous Professional Development (CPD) program analogous to the one described in the last solution (Solution #9). The objective of the program will be to equip in-service and pre-service teachers in 100 schools and in the Akuapim North district training college, respectively, with the knowledge, confidence, and support needed to effectively teach bilingual reading skills in the early primary grades. The goal of the CPD program will be to improve teachers' knowledge, skills, and commitment to NALAP so that they are more effective in planning lessons, using a variety of reading and child-centered teaching approaches, and monitoring student achievement of reading skills in L1 (Brozo & Sturtevant, 2009).

The organization to assist with implementing this program is World Education. World Education hosted the dissertation research in Ghana and is planning to implement a teacher-training program to respond to the knowledge and organizational gaps in early grade reading instruction. Thus, the proposed program is important for them both in the short-term and long-term as they consider how to implement their current program and scale up efforts throughout the Akuapim North district.

Expected Results

Specifically, the Continuous Professional Development Program will aim to achieve the following results over the five-year project:

1. Improve teacher knowledge and expertise in teaching basic reading skills in kindergarten through first grade for at least 80% of teachers.
2. Increase teacher confidence in managing child-centered activities and meeting the needs of struggling readers observed in at least 80% of teachers.

3. Increase use of reading assessments to monitor student performance for at least 60% of teachers.
4. Recruit and train 20 literacy coaches to provide continuous professional development and coaching for newly recruited teachers, and in-service teachers (1 coach per 5 schools; 20 coaches to support 100 schools).
5. Increase the professionalization of early primary school teachers by providing trained teachers with certificates in early grade reading specialization (Target: 50% of teacher to become certified by the end of the program).
6. Retain 90% of trained teachers in early primary grades for at least five years.

Activities

To achieve the expected results, the CPD program will implement the following activities:

1. Develop CPD curriculum, training manuals, and supplementary materials.
2. Recruit literacy coaches and training facilitators.
3. Train teachers and literacy coaches.
4. Conduct coaching and facilitate development of professional learning communities.
5. Promote and facilitate integration of the literacy materials and methodologies into pre-service training programs.

The solutions are integrated into each of the following recommended activities.

Develop CPD curriculum and materials. In the first year of the program, the CPD training curriculum and materials will be developed. The new program will require the District Education Office and World Education to design a continuous professional curriculum that outlines the scope and sequence of literacy topics (Leu & Ginsberg, 2011) to address the

knowledge and organizational gaps, and to set benchmarks for assessing progress towards attaining the required competencies. World Education could work with a teacher-training college, reading specialists, and/or a consultant to define the competencies and develop the appropriate materials. To address the knowledge and organizational gaps validated in this case study, the following illustrative activities could be integrated into the CPD curriculum and materials development process:

- Provide a supplementary teachers' guide that explicitly describes the five key reading skills and milestones with direct links to the lessons in the teachers' guide.
- Develop a continuous assessment-monitoring tool and train teachers in its usage to track pupil reading progress.
- Provide low-cost, linguistically appropriate pupil-reading books, for KG1 and P1 classrooms using local resources that can be easily reproduced.
- Link pre-service training to the CPD curriculum (Leu & Ginsberg, 2011).
- Include guidance on reflective practice, action research, and development of professional learning communities in the teacher-training guide and trainers' training manual (Leu & Ginsberg, 2011).

Recruit literacy coaches and training facilitators. As part of the program start-up process, World Education and the District Education Office will need to identify and recruit literacy coaches and training facilitators. World Education is currently liaising with the MOESS Literacy Focal Person and Kindergarten Coordinator within the District Education Office. World Education could leverage this relationship to connect with the College of Education, and have qualified teacher trainers seconded to the project in exchange for payment of facilitation fees and per diem. Using local resource persons within the district, may help to promote sustainability of

the program and also assist with the integration of the CPD program into pre-service training courses. The master trainers would be responsible for training and mentoring literacy coaches and teachers.

Literacy coaches will support teachers in a cluster of five schools. Thus, the project will need to recruit a total of 20 literacy coaches. In addition to identifying highly qualified trainers in the teaching college, the project could ask schools to nominate a teacher, head teacher, or other person, based on pre-set criteria such as, someone who is well respected, demonstrates exemplary performance, or has an advanced degree related to early grade literacy or bilingual instruction.

According to the *USAID Power of Coaching: Improving Early Grade Reading Instruction in Development Countries* report (Bean, 2014), successful coaches typically possess the following qualifications (p. 24):

1. Knowledge and understanding of the program they are supporting (e.g., literacy and language development, child-centered instruction, and assessment in general).
2. Knowledge of the coaching process (e.g., how to observe, model, confer with teachers).
3. Experience teaching at the level they are expected to coach.
4. Well-developed interpersonal, leadership, and communication skills.
5. Ability to develop a trusting relationship with teachers.
6. Passion for teaching and learning.

As the first two criteria (knowledge and understanding of the literacy program and coaching process) can be developed through a well-structured preparation program, the other experiences and dispositions that enable coaches to work effectively with teachers are most

critical (Bean, 2014). Because effective coaching requires building trust and open communication with teachers, it is also important to consider the relationship of the coach to the teacher. School principals or district-level supervisors, whom are responsible for evaluating teachers' performance, may not be the best choice for recruitment. If they are the only option due to limited human resources available, then they will need extensive coaching on how to play dual roles. In Ghana, school principals and district supervisors typically provide coaching and mentoring to teachers. The challenge observed during the case study, and in other evaluations is that, teachers rarely challenge the coach with innovative ideas or ask critical questions; thus, instructional decision-making rests with the person who has seniority. In order for teachers to take ownership of the NALAP reform and innovate the reading methodology in the classroom and in professional learning communities, the mentors need more capacity building in how to build teachers' confidence and leadership skills.

Train teachers and literacy coaches. Unlike past one-to-three day NALAP workshops in Ghana, the CPD program will include district-wide, in-service training workshops and cluster-based follow-up training. Using a cascade model, experts would introduce new information at the central level to literacy coaches and teachers, and then literacy coaches would conduct follow-up trainings at the cluster and school levels. Research recommends at least 80 hours of training for the training to be sustained (Gulamhussein, 2013). Therefore, the project should conduct one annual district-wide in-service training workshop for five days in length (40 hours). Subsequently, cluster-based training sessions could take place once per term, with 12 hours per training, to focus on specific areas needing strengthening, such as assessment or time management. This could be followed up with school level reflection exercises once per week facilitated by the school principal and/or literacy coach.

The teacher training college would facilitate district-wide training. The Literacy Coordinator and literacy coaches would conduct cluster-based training. School principals and literacy coaches would support the school-level training.

Based on the solutions identified, the following topics are recommended for the training:

- Understanding and teaching the five key reading skills (phonemic awareness, phonics, vocabulary, fluency, and comprehension)
- Understanding and teaching the NALAP reading and bi-literacy milestones for KG/P1
- Using child-centered pedagogies in the classroom, including maximizing the use of the pupil books
- Developing lesson plans in the Ghanaian language aligned with NALAP milestones and integrated approach
- Using the continuous assessment monitoring tool to track pupil reading progress and differentiate instruction according to ability of the learner
- Using student achievement data as the basis for instructional planning

Furthermore, best practice research recommends involving teachers in planning and implementing training programs (Leu & Ginsberg, 2011). Thus, teachers could be consulted on potential training topics.

Training of coaches. While there are exceptions, coaches in developing countries generally have limited experience in coaching and in literacy instruction. Therefore, the CPD program will provide coaches with a well-structured preparation program that will enable them to take on their roles and responsibilities. To support coaches with developing a deep understanding of the literacy content they are responsible for teaching, the program will conduct

a formal workshop in which basic information about the literacy program and coaching is presented (Bean, 2014). The initial training would be delivered through experiential learning, based on best practices (Bean, 2014) such as, practice teaching, viewing videos of successful coaches in various scenarios, and role-playing. Thereafter, coaches would be provided with ongoing support and opportunities to share experiences, co-mentor, and network.

To assist coaches with understanding the expectations of the project, they will also be provided with a clear job description that outlines their key roles and responsibilities, and the qualifications of a successful coach (Bean, 2014). For instance, the coaches would be responsible for four specific activities: (1) conducting classroom support visits to observe teachers and providing feedback at least once a week, (2) providing school-based or cluster-based workshops to focus on identified needs at least once per term; (3) scheduling formal professional learning group meetings once a month to review student and teacher performance and identify areas for improvement; and, (4) holding mini-demonstration sessions during coaching sessions (Bean, 2014).

Conduct coaching and facilitate development of professional learning communities. Following the district-wide trainings of literacy coaches and teachers, literacy coaches will provide follow-up support in five schools at least once a week, to assist teachers with lesson planning, teaching literacy skills, facilitating child-centered activities, and assessing students' progress. Addressing the validated gaps in teachers' reading instruction, literacy coaches will provide demonstrations on how to explicitly teach the reading skills and provide guided child-centered practice using the NALAP resources within the 90-minute class time. Once teachers have grasped the new concepts, teachers will practice applying the skills in the classroom while coaches observe and provide corrective feedback during debriefing sessions. In order to build

teachers' confidence during coaching sessions, the literacy coach will assign specific, short-term yet achievable goals and praise teachers' efforts while highlighting the strengths and areas for improvement.

The literacy coach will also be responsible for providing structured reflection sessions at each school with the eventual goal of developing professional learning communities. The literacy coach will provide training on how to interpret Early Grade Reading Assessments and other standardized tests, and on how to use formative assessment as the basis for instructional planning. Applying Gulamhussein's (2013) two-stage model, teachers will first review the data and then discuss challenges and develop innovations to experiment with in the classroom (Gulamhussein, 2013). The Head Teacher will be involved in the sessions to promote sustainability and engagement of all early primary grade teachers.

The project will initially focus on training and supporting new teachers, as attrition rates of new teachers are high during the induction phase. New teachers will be mentored by literacy coaches and paired with an experienced teacher for the first year of teaching, as this approach has been shown to help retain new teachers and increase their effectiveness in the classroom (Johnson & Kardos, 2008).

Implementation of coaching should consider the following research-based best practices:

- Coaches should provide intensive and frequent coaching (Bean, 2014). Research shows teachers involved in 64 hours of one-on-one coaching showed significant improvement in language and literacy practices, when compared with teachers who received only training or no professional development (Neuman & Cunningham, 2009; Bean, 2014, p. 11).

- Coaches should conduct various group and individual activities. Activities found to be significant predictors of student learning were, conferencing with teachers, administering and discussing assessments, modeling, observing classes, and co-planning with teachers (Elish-Piper & L'Allier, 2007; Bean, 2014, p. 12).
- Coaching approaches should be differentiated based on goals of the initiative and content of the literacy program, results of student assessment measures, and teacher needs (Bean, 2014, p. 17).
- Coaches should use inquiry-based approaches to encourage reflective thinking, such as giving teachers choices regarding which types of coaching activities they prefer. By providing options, coaches show respect for teachers as adult learners and as professional colleagues (Bean, 2014, p. 18).

Promote and facilitate integration of the literacy materials and methodologies into pre-service training programs. The final phase of the implementation plan is to integrate the NALAP early grade reading instructional methods and materials into pre-service training to produce qualified reading teachers. From the inception of the program, teacher trainers from the teacher's college will be involved in the curriculum and materials development, in-service training and coaching, so as to promote adoption of the program into pre-service education. Additionally, the program will work with the MOESS to develop an Early Grade Reading Certificate for teachers who complete the 80 hours of training, which could be completed in approximately one year.

According to USAID's ten key principles in developing effective in-service teacher professional development programs (Leu & Ginsberg, 2011), in order for professional development programs to be successful, teacher participation should be officially recognized by

the Ministry of Education or local authority. Incentives are equally important for sustaining commitment to the program. The seventh principle in Leu and Ginsberg's (2011) steps to implementing in-service teacher professional development program suggests, "supporting improvement of teachers' conditions" through (p. 21):

> Engaging relevant policymakers in dialogue focused on educators' compensation, conditions of service, and career advancement to enhance incentives for teachers, administrators, and supervisors to participate in in-service activities, to use what they have learned to improve their professional practice, and to remain in the profession.

Based on these principles, the program should promote the design of a system that formally recognizes teachers' participation in the continuous professional development program, and links participation to the improvement of teachers' conditions of service and career advancement.

Project Personnel

To successfully implement the early grade reading Continuous Professional Development program, it requires a carefully designed personnel structure comprised of project personnel and MOESS counterparts. The key project personnel should consist of a Project Director, Early Grade Reading Specialist, Monitoring and Evaluation (M&E) Specialist, and Finance Manager. While the Project Director and Early Grade Reading Specialist will work full-time on the project, the M&E Specialist and Finance Manager may be shared across multiple projects, to reduce cost to the funding agency. The Teacher Trainers and Literacy Coaches, while an integral part of the project implementation, would be recruited on a contractual basis for the duration of the training and follow-up activities. Figure 35 shows the organizational structure for the proposed Continuous Professional Development program.

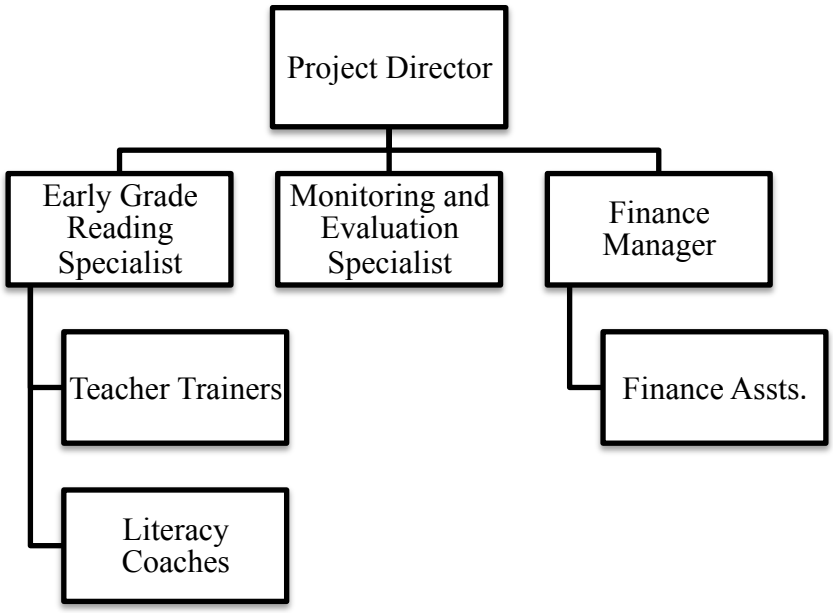


Figure 35. World Education CPD program organizational structure

Key Personnel Roles and Responsibilities

The roles and responsibilities of the project personnel are briefly described below.

Project Director. The Project Director will be responsible for overall program management, technical guidance, and completion of deliverables per the work plan. The Project Director will liaise with the MOESS, donors, and the teacher's training college to develop and execute the project implementation plan. S/he will support the institutionalization of the project into MOESS structures through representation in national and district-level meetings.

Early Grade Reading Specialist. The Early Grade Reading Specialist will provide technical oversight and guidance to support improved reading instruction during training and in the classroom. S/he will work with trainers, MOESS counterparts, and Reading Specialists to develop the CPD curriculum and training materials. The Specialist will work with District Education Officers (see Figure 36) to organize training of trainers and teacher-training

workshops and to develop the coaching implementation plan. S/he will coordinate with schools to ensure smooth and timely project implementation, support classroom observations and monitoring visits, and manage the distribution of materials.

Monitoring and Evaluation Specialist. The Monitoring and Evaluation (M&E) Specialist will be responsible for overall data collection and management. S/he will develop the M&E plan, indicators and data collection tools. The M&E Specialist will conduct field visits to monitor project activities, manage data collected, and prepare reports, as needed. S/he will also work in collaboration with consultants to conduct Early Grade Reading baseline and end line assessments, as well as project performance assessments, as required by the donor agency.

Finance Manager. The Finance Manager will be responsible for day-to-day operations and financial management. S/he will ensure project adherence to government procurement regulations, and will develop a system of checks and balances with authority distributed amongst the finance team, the Education Specialist and the Project Director. S/he will establish and maintain office accounting and financial data management systems.

MOESS Counterparts

Within the MOESS, the project should engage the District Education Director, the Literacy Focal person, the Kindergarten Coordinator, Circuit Supervisors, and Teacher's Training College Principals. At the school level, the project would work directly with School Principals and teachers. In order to ensure consistent follow-up at the school level, World Education should build the capacity of the MOESS to conduct direct implementation, monitoring support and supervision. The MOESS technical and political actors, most critical for project coordination and implementation are shown in Figure 36.

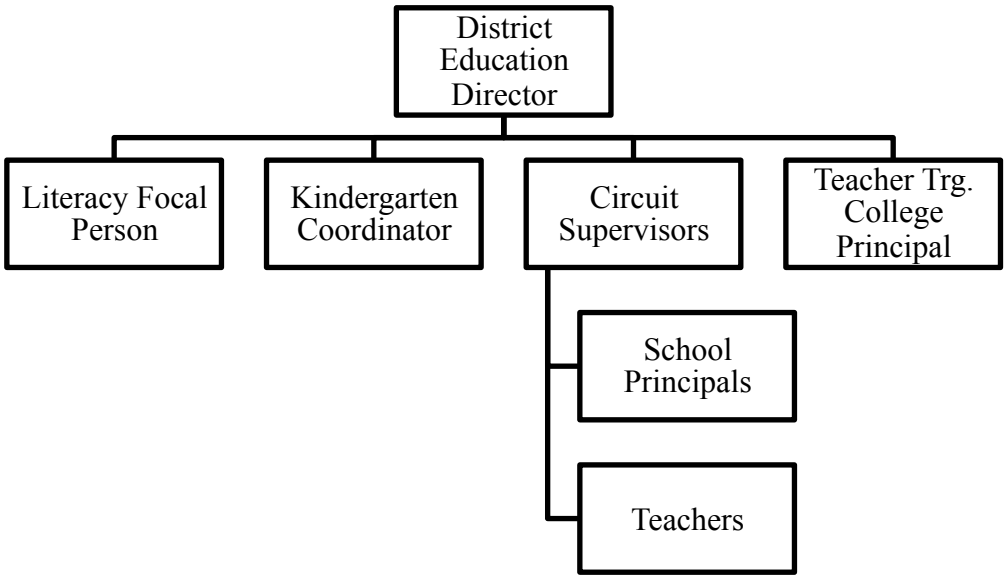


Figure 36. MOESS coordination structure

MOESS Roles and Responsibilities

The roles and responsibilities of the MOESS counterparts are described in the following sections.

District Education Director. The District Education Director would be involved in signing a Memorandum of Understanding (MOU), approving the work plan, and ensuring the program is eventually embedded into the DEO operational budget. Therefore, s/he would participate in periodic field visits, quarterly project review meetings, and district education meetings to inform stakeholders of the benefits of the project and advocate for budget commitments. While World Education or a donor would initially fund the project, the goal is that the pilot project would eventually be subsumed by the district education budget. This requires a strong relationship with the District Education Coordinator. Thus, the Project Director would be responsible for establishing and maintaining this relationship throughout the project.

District Education Officials. Within the District Education Office, the Literacy Focal Person and Kindergarten Coordinator would be the technical personnel involved in designing, implementing, and evaluating the CPD Program. The Early Grade Reading Specialist would work with them to adapt existing materials and develop guidelines and training materials. They would also be involved in designing and coordinating training and coaching sessions, formalizing the establishment of professional learning communities, and ensuring the full integration of the program into the MOESS structures.

The District Coordinators and Circuit Supervisors, who are responsible for supervising teachers and mentoring them, would be invited to the trainer-training and teacher-training workshops. They will be trained in the literacy approaches, continuous assessment methods, as well as in the overall CPD curriculum, so that they can monitor teachers' performance against the expected competencies. With technical support and tools provided by the M&E Specialist and EGRA Specialist, the district officials would be responsible for monitoring implementation of the training methodology and conducting assessments of teacher performance, which would inform future teachers' professional development and career advancement. Monitoring teacher performance is already part of Circuit Supervisors and Coordinators' roles within the Ministry of Education; therefore, the project would essentially be building their capacity to monitor improvements in literacy instruction.

Teacher Training College Principal. The Teacher's Training College Principal, who reports to the District Director of Education, would be responsible for designing and monitoring the implementation of the CPD work plan, including the teacher-training and coaching schedule, and ensuring full participation of the designated tutors, as teacher trainers and mentors of literacy

coaches. They would also work in collaboration with the Project Director to integrate the methodology into pre-service training.

School Principals. School Principals, often referred to as "Head Teachers" in Ghana, play a key role in ensuring teachers' participation in the project, its continued momentum, and sustainability. The School Principals will attend the same training as government officials, to learn about the CPD curriculum, the reading instructional methodologies, student and teacher assessment strategies, and how to facilitate professional learning communities in their schools.

Evaluation Plan

Evaluation is an effective way to obtain valid and reliable information regarding the state of the system we are trying to change, the progress of our interventions, and the bottom line impact of the change on overall goals (Clark & Estes, 2008). Evaluation can also help make mid-course corrections in school performance improvement programs, to increase their impact and sustain the investment of time and resources. Thus, the purpose of this section is to provide a detailed evaluation plan to assist the project staff with monitoring the impact of the CPD program and effectiveness of the proposed solutions.

To assess the impact of the project on expected results, a baseline, midterm and final project evaluation will be conducted. In addition, an Early Grade Reading Assessment will be carried out during the baseline and endline assessment to determine whether teachers' change in instruction has resulted in improved reading achievement.

Besides formative and summative evaluations, the project will also conduct ongoing monitoring of the implementation plan and activities. A monitoring system will be developed to track results and activities against specific indicators. The MOESS personnel will be involved in monitoring performance of teachers against project indicators and will be provided with

monitoring tools that may be incorporated into the MOESS monitoring system. The project will support Head Teachers in setting school-level benchmarks for student reading performance and monitoring teachers' performance against a checklist.

The impact of the CPD program on teachers' performance will be assessed through the application of the New World Kirkpatrick Model, which is the most widely used model for evaluation of training programs (Kirkpatrick Partners, 2014; Kirkpatrick, 2006). The framework tracks four levels of change: (1) Reaction – which measures teachers satisfaction, engagement and perception of the value of the program; (2) Learning – which assesses the extent to which teachers acquired the skills, knowledge, attitudes, confidence and commitment; (3) Behavior – which determines whether there is any change in behavior as a result of the training; and, (4) Results – which assesses whether the training achieved the intended impact and thus closed the performance gap.

If the proposed CPD program were successful, the following results would be observed.

*Level 1 Reactions***.** By the end of the training, teachers would be satisfied with the quality and content of the training. They would feel that the knowledge and skills received are relevant and useful.

*Level 2 Learning***.** Two weeks following the training, teachers' lesson plans would reflect milestones, reading skills, and child-centered activities that they learned about during the training workshop or coaching sessions. Teachers would demonstrate understanding of the concepts during follow-up coaching sessions, and practice demonstration sessions with the coach. The literacy coach would continue to conduct classroom observations and coaching at least once a month.

*Level 3 Behavior***.** Three to six months following training and coaching sessions, classroom observations would indicate that teachers are following the lesson plans in the teacher's guide; explicitly teaching phonics and decoding skills; using teacher-guided reading strategies and teaching materials to promote vocabulary, fluency and comprehension; facilitating child-centered reading, speaking and writing activities using pupil text and supplementary material; using the NALAP resources effectively; and, are differentiating instruction according to a formative assessment of their students. Teachers would have lessons prepared for classroom observations that incorporate feedback from coaches. Teachers would regularly participate in professional learning group meetings. A midterm evaluation and final evaluation would be conducted to assess teachers' behavior change in Year 3 and Year 5 of the project.

Two years following the training (Year 4), final teacher performance evaluations would show 80% of teachers with improved knowledge and expertise in teaching basic reading skills; 80% of teachers with increased confidence in managing child-centered activities and meeting the needs of struggling learners; 60% of teachers using reading assessments to monitor pupil reading performance; 80% of teachers closely following the teacher guide; 50% of teachers certified in early grade reading instruction; and 90% of trained teachers retained in the schools since the inception of the project.

*Level 4 Results***.** Student Early Grade Reading Assessments in Years 3 and 5 would demonstrate a progressively increasing gain score in Reading Comprehension compared to the baseline reading assessment.

The next section describes how each result will be measured.

Level 1 Reactions

The reactions level will be measured during the workshop through a post-training survey. The post-training survey will ask participants to respond anonymously to the following open-ended questions (Clark & Estes, 2008):

- Which sessions of the training did you find most relevant to your work?
- Which activities were particularly engaging for you?
- What did you like most about the training program?
- What did you dislike about the training, if anything?
- What recommendations would you give for how to improve future training?

The post-training survey will also measure knowledge, attitude, confidence and commitment to applying the newly obtained skills and knowledge. The actual questions will be tailored to the training program. Sample questions from a likert scale are provided for illustrative purposes:

- Attitude. "I believe bilingual education is important."
- Confidence. "I feel ready to apply new reading strategies in my classroom."
- Commitment. "I have clear goals and a lesson prepared to teach my students."
- Commitment. "I plan to continue practicing and mastering these methods when I return to my school."

Level 2 Learning

The learning of the new knowledge and skills will be measured through coaching sessions during the first few weeks of implementation. Prior to implementation in the classroom, teachers will be asked to develop a sample lesson and perform model teaching in which they will practice and demonstrate the new approach. The expert trainer will evaluate the model lessons

using a classroom observation checklist that reflects a performance rubric to measure the training content and skills. The tool will include space for comments, where the trainer/coach can indicate strengths, weaknesses, and suggestions for improvement. Clark and Estes (2008) note that, "the combination of procedure-based checklists and an expert's judgment" is an effective form of evaluation for Level 2 and Level 3.

Level 3 Behavior

In Level 3, behavior will be measured through informal assessments conducted once per term. For instance, coaches, project technical specialists, and MOESS staff would visit the classroom and assess teacher transfer of training principles to the classroom, using a checklist listing the competencies. Following classroom observations, the observer will hold a debriefing session with the teacher to discuss strengths, weaknesses and develop a plan for follow-up actions. The monitoring data will be shared with the project and incorporated into future training and professional development activities.

In order to assess the extent of behavior change in teacher performance throughout the project, a baseline, midterm and final project evaluation could be carried out to measure the expected results and sustainability of the approaches. In-depth interviews would be conducted with key informants involved in the training, such as teachers, principals, literacy coaches and supervisors. Questions would focus on the following: number of trained teachers still teaching in the school, ease of transfer of training to the classroom (e.g., activities attempted, challenges encountered, and results), examples demonstrating use of the skills, and observed changes in students or teachers' behaviors and attitudes toward reading.

The interviews will also assess whether coaching took place as intended – whether the coach visited regularly, assisted teachers in the classroom, provided feedback, conducted in-service training, and facilitated professional learning groups.

Finally, through open-ended questions, the interview questionnaire would aim to identify challenges with implementing the activities, and how the challenges were addressed. The evaluator would probe to learn whether these challenges were addressed through school-based professional group meetings, cluster-based meetings, or through involving the principal and district education office.

Furthermore, for purposes of obtaining verifiable data to confirm whether long-term behavior change has occurred, a classroom observation of the teachers trained, will be conducted using the same checklist from the training workshop. This will determine whether teachers have improved or maintained their level of performance since the baseline assessment.

In addition, through review of project documents on key indicators, the evaluators would assess the number of pre-service teachers and in-service teachers trained and certified, and the number participating in all program activities. This would feed into the overall program results. The results of all data collected would be analyzed, triangulated, and compared to the targets, to determine overall project impact and sustainability.

Level 4 Results

At the end of the project, the organization would assess the impact of the training on the school performance goal, which is to improve reading achievement of students. This level therefore measures the degree to which targeted outcomes occurred as a result of the training events and reinforcement activities. The theory of change is that if the project has achieved the stakeholder goal and 100% of first grade teachers are effectively implementing the NALAP

curriculum in teaching reading in the mother tongue language and pupils are fully engaged in reading activities (level 3), then it would result in improvement in overall student achievement, particularly in meeting milestones for oral, listening, and reading skills in the local language.

To measure this outcome, the national Early Grade Reading Assessment (EGRA) developed by USAID will be administered to randomly selected students in KG and 1st grade in the first, third and fifth year of the project. Students would be assessed using relevant EGRA subtasks, such as letter identification, phonemic awareness, fluency and comprehension. For instance, to assess letter sound and identification, pupils could be provided with a table of letters and asked to name the letter and produce the sound. To assess fluency, they could also be provided a random table of simple words, and could be asked to read as many as they can within one minute. Finally, to assess fluency and comprehension, students would be provided with a simple text from a grade-appropriate textbook and asked to read the passage out loud. The number of letters and words read within the time allotted (e.g., one minute) would be recorded. The total number divided by the total possible would produce a score. Then the score would be compared to the benchmark set for reading fluency in Ghana. The evaluation design described above could be repeated annually by the Ministry of Education to assess student performance in reading in the mother tongue and English.

The evaluation instruments and framework are illustrated in Table 38.

Table 38.

Evaluation Instruments and Framework

	Assessing Knowledge and Skills			Assessing Learning Outcomes			Assessing Motivation
	Post-Training Survey		Interview	Classroom Observation Checklist	Document analysis	Student Assessment	Post-training survey
Kirkpatrick Four Levels of Change	Close-ended Likert Scale	Open-ended	Semi-structured interviews	Performance rubric, comments on strengths, weaknesses, recommendations	Number of teachers trained and participating in CPD activities	Early Grade Reading Assessment	Self-report change of attitudes/ beliefs using Likert-scale
Training results							
Level 1 (Reaction)	X	X					X
Level 2 (Knowledge)				X			
Application results							
Level 3 (Transfer)			X	X	X		
Level 4 (Impact)						X	

Future Research

One unexpected serendipitous finding that warrants additional research is the new integrated approach and how it differs from the transitional bilingual language approach as well as its potential impact on language acquisition. NALAP was founded in 2009 as a transitional approach in which the local language would take precedence in the first three grades and English would initially be taught orally and then, reading and writing skills would be introduced once the foundational skills in the local language were developed.

During the fieldwork, it was learned that the Akuapim North district is diverting from a transitional bilingual education approach towards a dual language program that emphasizes an integrated approach to literacy. For reasons unclear, teachers and administrators are reverting to English mixed with the Ghanaian language throughout the 90-minute class in kindergarten through third grade. Thus, rather than transitioning from 90/10 in kindergarten to 50/50 in third grade, teachers are jumping to a 50/50 dual immersion approach and attempting to integrate other subjects (e.g., Math, Science, Environment, etc.) into the curriculum. Some teachers explained that it was changed because it was difficult to switch to English after speaking in the local language for 80 minutes. As a result of the new integrated approach, the focus has shifted from teaching basic oral, reading and written language skills in the local language to teaching English and covering a range of topics through two languages of instruction. Teachers state that while it is easier for students to comprehend the lesson, it has become exhausting to teach and difficult to develop lesson plans. Additional research is necessary to fully understand the implications of this approach. It is still in the pilot phase and has only been implemented in one or two districts. Hence, the research could help to inform the rollout of this new strategy.

Conclusion

In 2013, a national Early Grade Reading Assessment (EGRA) found that 65% of pupils in the Akuapim North district could not read at all (Kochetkova & Brombacher, 2014). Given the high percentage of illiteracy in this district, the Akuapim North district's goal is to have at least 5% of second grade children achieving reading fluency and comprehension in the Ghanaian language and English by June 2018 (USAID/Ghana, 2014). In order to achieve the fluency and comprehension benchmark, P2 students must be reading at least 40 correct words per minute and achieving 80% correct on the reading comprehension test. In the 2013 EGRA, 2.5% met the fluency benchmark and 0.9% met the comprehension benchmark. On average, less than 1% of second grade students met the proficiency benchmarks signaling a 4% achievement gap.

While the joint efforts of all stakeholders is necessary to achieve the fluency and comprehension benchmarks within three years, teachers have been selected as the key stakeholders. Teachers are expected to teach in the mother tongue language in the first three years of primary school with gradual transition to English in accordance with the NALAP curriculum and the teacher's guide. While teachers have been trained in the bilingual methodology and provided with materials in the locally selected language and English, past evaluations report that only 20% of teachers are fully adhering to the child-centered, systematic reading approach. In 80% of classrooms observed, teachers only taught part of the lessons, generally emphasizing rote memorization, rather than interactive activities that lead to greater phonological awareness, decoding skills, and comprehension (USAID, 2011).

In order to identify the root causes of this lack of fidelity to implementation, a gap analysis framework was applied, which aimed to unveil the knowledge, motivation and organizational rationale behind the performance gap. The key project question was, "What are

the knowledge, motivational, and organizational barriers that inhibit 80% of first grade teachers from adhering to the set standards in the NALAP teacher's guide?" Set standards were defined as following the reading methods, the child-centered activities, the recommended use of teaching aids, the assessment units, and the allocated timeframes for the Ghanaian language and English.

Through an extensive literature review of global, regional and local practices, scanning interviews with World Education, and a review of the general learning theories that affect knowledge acquisition, 12 assumed knowledge causes, 11 assumed motivational causes, and 12 assumed organizational causes were identified. In total, there were 34 assumed causes.

Of the 34 assumed causes, 21 were validated, and 18 were selected as the most critical for closing the performance gap. Data was collected in Ghana over the course of two weeks through interviews, paper-based surveys, classroom observations, and document analysis in five schools within the Akropong town. The findings were analyzed, triangulated, and validated through a validation meeting with all teachers who were interviewed.

The final results showed that 12 factual and procedural knowledge gaps were validated. Teachers lack knowledge and skills in terms of teaching the five key reading skills, the milestones, and child-centered approaches, in developing lesson plans, and in conducting formative reading assessments. There was one main motivational gap that was validated – teachers lack self-efficacy to teach reading. With regards to organizational gaps, the findings showed that NALAP has failed to become institutionalized and systematized due to insufficient in-service and pre-service training, inadequate follow-up support, challenges adhering to the timetable, and limited opportunities to exchange ideas with other teachers. A comprehensive solution and implementation plan for addressing these challenges was presented in Chapter 5.

To address the teacher knowledge, motivational and organizational gaps, the proposed solution is to provide teachers with a comprehensive continuous professional development program that includes a combination of theoretical and practical training, demonstration lessons, coaching and reflection sessions. Unlike past one-to-three day workshops with little to no follow-up coaching in the classroom or reinforcement at the school level, the training will include district-level and cluster-based workshops that will be followed up with reinforcement one-on-one coaching in the classroom, led by a trained literacy coach. Reflection sessions will be held with peer teachers during meetings with the literacy coach and through continuing professional development meetings.

To increase the sustainability and full integration of the program into the MOESS, from the inception of the program, teacher trainers from the teacher's college will be involved in the curriculum and materials development, in-service training and coaching, so as to promote adoption of the program into pre-service education. Additionally, the program will work with the MOESS to fully implement and monitor the program, as well as, to develop an Early Grade Reading specialization program for teachers who complete the 80 hours of training, which could be completed in approximately one year.

As part of the proposed evaluation plan, Early Grade Reading Assessments will be conducted in Years 1, 3 and 5 to determine whether teachers' change in instruction has resulted in improved reading achievement. Applying the New World Kirkpatrick's evaluation framework, the impact of the continuous professional development program on teachers' performance will be assessed. Besides formative and summative evaluations, the project will also conduct ongoing monitoring of the implementation plan and activities, and make course corrections as needed.

While delimitations in the design of the case study preclude the results from being generalizable, the issues and solutions identified have implications for the broader educational development community in Ghana, Africa, and other parts of the developing world. The literature review found numerous countries in Africa that encounter challenges with language policy implementation, fidelity to program design, and sustainability of training efforts. The case study confirmed that one-off training workshops with little follow-up coaching in the classroom and few opportunities to reflect on practice with teachers, result in minimal impact on student achievement. However, the research shows that continuous training of up to 80 hours coupled with consistent coaching and professional learning communities, which use student achievement data as the basis for instructional planning can have a significant impact on student achievement.

Furthermore, the selection and training of coaches is critical to the success of the professional development program. The most important selection criteria are having the experience and disposition to effectively build a trusting relationship with teachers, through interpersonal, leadership and communication skills. In countries where programs must rely on principals or MOE supervisors to serve in dual positions, capacity building is necessary for them to perform mentoring roles. In order for teachers to assume ownership of the NALAP reform in Ghana, such as experimenting with the reading methodology in the classroom and innovating through professional learning communities, the coaches will need more capacity building in how to build teachers' confidence and instructional leadership skills.

Considering the dearth of research in developing countries on early grade reading initiatives and the extensive literature review undertaken in this case study, the proposed implementation strategies are widely applicable to government programs and policies aiming to improve early grade reading outcomes.

REFERENCES

Abadzi, H. (2006). *Efficient Learning for the Poor: Insights from the Frontier of Cognitive Neuroscience.* Washington, DC: World Bank. Retrieved from: https://openknowledge.worldbank.org/bitstream/handle/10986/7023/366190Efficien101OFFICIAL0USE0ONLY1.pdf?sequence=1

Adams, S., Nornoo, C., Rowley, D., & Sinclair, B. (2014). *Final performance evaluation of USAID/Ghana's partnership for accountable governance in education (PAGE) Project.* Final Report to USAID/Ghana. Retrieved from http://pdf.usaid.gov/pdf_docs/pbaaa020.pdf

Akrofi, A. (2003). English literacy in Ghana: The reading experiences of ESOL first graders. *TESOL Journal*, *12*, 7-12.

Akyeampong, K., Pryor, J., Westbrook, J., & Lussier, K. (2011). *Teacher preparation and continuing professional development in Africa: Learning to teach early reading and mathematics*. Brighton, UK: University of Sussex, Centre for International Education. Retrieved from https://www.sussex.ac.uk/webteam/gateway/file.php?name=tpa-synthesis-report-july2011.pdf&site=320

Al Otaiba, S., Kosanovich-Grek, M. L., Torgesen, J. K., Hassler, L., & Wahl, M. (2005). Reviewing core kindergarten and first-grade reading programs in light of No Child Left Behind: An exploratory study. *Reading and Writing Quarterly*, *21*, 377-400.

Alidou, H., Boly, A., Brock-Utne, B., Diallo, Y. S., Heugh, K., & Wolff, H. E. (2006). *Optimizing learning and education in Africa — the language factor: A stock-taking research on mother tongue and bilingual education in Sub-Saharan Africa*. Paris: ADEA.

Allington, R. L. (1983) The reading instruction provided to readers of differing reading abilities. *The Elementary School Journal*, *83*, 548-559.

Altinok, N. (2013). *Performance differences between subpopulations in TIMSS, PIRLS, SACMEQ and PASEC*. Background paper for EFA Global Monitoring Report 2013/4.

Ambrose, S. A., Bridges, M. W., DiPietro, M., Lovett, M. C., & Norman, M. K. (2010). *How learning works*. San Francisco, CA: Jossey-Bass.

Anders, P., Hoffman, J., & Duffy, G. (2000) Teaching teachers to teach reading: Paradigm shifts, persistent problems and challenges. *Handbook of Reading Research*, *3*, 719-743.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York, NY: Longman.

August, D., & Shanahan, T. (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on language-minority children and youth*. London: Lawrence Erlbaum Associates, Inc. Retrieved from http://www.bilingualeducation.org/pdfs/PROP2272.pdf

Ball, E. W., & Blachman, B. A. (1991). Does phonemic awareness training in kindergarten make a difference in early word recognition and developmental spelling? *Reading Research Quarterly*, *26*, 49-66.

Baker, C. (2001) *Foundations of Bilingual Education and Bilingualism*. Third edition. Clevedon: Multilingual Matters.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.

Bean, R. (2014). *The power of coaching: Improving early grade reading instruction in developing countries*. Washington, D.C.: United States Agency for International Development. Available at: http://pdf.usaid.gov/pdf_docs/pa00jv67.pdf

Benson, C. (2004). Bilingual schooling in Mozambique and Bolivia: From experimentation to implementation. Language Policy, 3(1), 47-66. doi:10.1023/B:LPOL.0000017725.62093.66

Benson, C. (2005). *The importance of mother-tongue based schooling for educational quality.* Commissioned study for EFA Global Monitoring Report 2005. Centre for Research on Bilingualism Stockholm University.

Berninger, V. W., Vermeulen, K., Abbott, R. D., McCutchen, D., Cotton, S., Cude, J., . . . Sharon, T. (2003). Comparison of three approaches to supplementary reading instruction for low-achieving second-grade readers. *Language, Speech, and Hearing Services in Schools*, *34*, 101-116.

Blair, T. R., Rupley, W. H., & Nichols, W. D. (2007). The effective teacher of reading: Considering the "what" and "how" of instruction. *The Reading Teacher*, *60*(5), 432-438.

Bos, C., Mather, N., Narr, R. F., & Babur, N. (1999). Interactive, collaborative professional development in early literacy instruction: Supporting the balancing act. *Learning Disabilities Research & Practice*, *14*, 215-226.

Bos, C., Mather, N., Silver-Pacuilla, H., Narr, R. (2000). Learning to teach early literacy skills collaboratively. *Teaching Exceptional Children, 32(5),* 38-45.

Bowman, B. T., Donovan, S., & Burns, M. S. (Eds.). (2001). *Eager to learn: Educating our preschoolers*. Washington, D.C.: National Academies Press.

Brozo, W. G., & Sturtevant, E. G. (Eds.). (2009). *Beyond access: Effective reading for all*. Report from the sixth annual Global Perspectives Conference on Literacy, March 2009. Washington, D.C.: International Reading Association. Retrieved from https://www.rti.org/pubs/5c-globalperspectivesreport2009_sflb_3_.pdf

Cameron, L. (2001). *Teaching languages to young learners*. Cambridge, UK: Cambridge University Press: UK. Retrieved from https://www.academia.edu/6851011/Teaching_Languages_to_Young_Learners

Casely-Hayford, L., Seidu, A., Campbell, S., Quansah, T., Gyabaah, K., & Rukaytu, A. (2013). *The quality and inclusivity of basic education across Ghana's three northern regions: A look at change, learning effectiveness and efficiency*. Accra, Ghana: Associates for Change. Retrieved from: http://web.net/~afc/download3/Education%20Research/VSO%20TENI%20Quality%20of%20Education%20in%20Northern%20Ghana%20Study/Final%20TENI%20Quality%20of%20Education%20Study%20sent%20(Anonymized)%20April%209.pdf

Clark, R. E., & Estes, F. (2008). *Turning research into results: A guide to selecting the right performance solutions*. Atlanta, GA: CEP Press.

Coburn, C. E., & Woulfin, S. L. (2012). Reading coaches and the relationship between policy and practice. *Reading Research Quarterly*, *47*(1), 5-30.

Cohen, D., & Hill, H. (2001). *Learning policy: When state education reform works.* New Haven, CT: Yale University Press.

Collett, V. S. (2012). The gradual increase of responsibility model: Coaching for teacher change. *Literacy Research and Instruction*, *51*(1), 23-47.

Commeyras, M., & Inyega, H. (2005) An integrative review of teaching reading in Kenyan primary schools. *Reading Research Quarterly*, *42*, 258-281.

Corcoran, T., McVay, S., & Riordan, K. (2003). *Getting it right: The MISE approach to professional development*. Philadelphia, PA: Consortium for Policy Research in Education.

Cummins, J. (1991) Interdependence of first- and second-language proficiency in bilingual children. In Bialystok, E. (ed), *Language Processing in Bilingual Children*. Cambridge: Cambridge University Press, 70-89.

Cummins, J. (1999) Alternative paradigms in bilingual education research: Does theory have a place? *Educational Researcher* 28, 26-32.

Cummins, J. (2000) Language, Power and Pedagogy. Bilingual Children in the Crossfire. Clevedon: Multilingual Matters.

Cummiskey, C., Kline, T., Mulcahy-Dunn, A., & Varly, P. (2012). *Ghana national education assessment: 2011 findings report*. Washington, D.C.: USAID/Ghana. Retrieved from https://www.eddataglobal.org/documents/index.cfm/TechR_Task12_NEA2011_AnalysisReport_24Jan2012.pdf?fuseaction=throwpub&ID=376

Cunningham, A. E. (1990). Explicit versus implicit instruction in phonemic awareness. *Journal of Experimental Child Psychology*, *50*, 429-444.

Cunningham, A. E., Perry, K. E., Stanovich, K. E., & Stanovich, P. J. (2004). Disciplinary knowledge of K-3 teachers and their knowledge calibration in the domain of early literacy. *Annals of Dyslexia*, *54*, 139-167.

Cunningham, A. E., Zibulsky, J., Stanovich, K. E., & Stanovich, P. J. (2009). How teachers would spend their time teaching language arts: The mismatch between self-reported and best practices. *Journal of Learning Disabilities*, *42*(5), 418-430.

Datnow, A., & Castellano, M. (2000). Teachers' responses to success for all: How beliefs, experiences, and adaptations shape implementation. *American Educational Research Journal*, *37*(3), 775-799. doi:10.2307/1163489

Denton, C. A. (2014). *Classroom reading instruction that supports struggling readers: Key components for effective teaching*. Houston: University of Texas, Children's Learning Institute. Retrieved from http://rtinetwork.org/essential/tieredinstruction/tier1/effectiveteaching

Desimone, L., Porter, A. C., Garet, M., Yoon, K. S., and Birman, B. (2002). Does professional development change teachers' instruction? Results from a three-year study. *Educational Evaluation and Policy Analysis*, 24(2), 81–112.

Dixon, R. (1994). Business process reeingeering: Improving in new strategic directions. *California Management Review, 36*, 93-108.

Druckman, D. & Bjork, R. (1991). *In the mind's eye: Enhancing human performance.* Washington, D.C.: National Academy Press.

Druckman, D., & Bjork, R. (1994). *Learning, remembering and believing: Enhancing human performance*. Washington, D.C.: National Academies Press.

Druckman, D., Singer, J., & Van Cott, H. (Eds.). (1997). *Enhancing organizational performance*. Washington, D.C.: National Academies Press.

Dubeck, M. M., Jukes, M. C. H., & Okello, G. (2012). Early primary literacy instruction in Kenya. *Comparative Education Review*, *56*(1), 48-68. doi:10.1086/660693

DuFour, R. (2007). Professional learning communities: A bandwagon, an idea worth considering, or our best hope for high levels of learning? *Middle School Journal*, *39*, 4-8.

Duke, N. K., & Block, M. K. (2012). Improving reading in the primary grades. *The Future of Children*, *22*(2), 55-72.

Dutcher, N. (2004). *Expanding educational opportunity in linguistically diverse societies*. Washington, D.C.: Center for Applied Linguistics. Retrieved from: http://isites.harvard.edu/fs/docs/icb.topic39869.files/Dutcher_-_2001_LOI.pdf

Eaker, R., & Keating, J. (2008). A shift in school culture: Collective commitments focus on change that benefits student learning. *Journal of Staff Development*, *29*, 14–17.

Edwards, L. L., Simmons, D. C., & Coyne, M. D. (2005). Beginning reading. In M. Hersen, J. Rosqvist, A. M. Gross, R. S. Drabman, G. Sugal, & R. Horner (Eds.), *Encyclopedia of behavior modification and cognitive behavior therapy* (Vol. 3). Thousand Oaks, CA: Sage.

Elish-Piper, L., & L'Allier, S. (2007). *Does literacy coaching make a difference? The effects of literacy coaching on reading achievement in grades K-3 in reading first district*. Paper presented at the annual meeting of the National Reading Conference, Austin, TX.

Etsey, K., Smith, T. M., Gyamera, E., Koka, J., de Boer, J., Havi, E., & Heyneman, S. (2009). *Review of basic education quality in Ghana: Basic education in Ghana: Progress and problems*. Washington, D.C.: United States Agency for International Development. Retrieved from http://datatopics.worldbank.org/hnp/files/edstats/GHAdprep09.pdf

Fafunwa, A. B., Macauley, J. I., & Funnso Sokoya, J. A. (1989). *Education in mother tongue: The Ife primary education research project (1970-1978)*. Ibadan, Nigeria: University Press Limited. Retrieved from http://www.eric.ed.gov/PDFS/ED350120.pdf

Fisher, D., Frey, N., & Nelson, J. (2012). Literacy achievement through sustained professional development. *The Reading Teacher*, *65*(8), 551-563.

Fletcher, J., Lyon, G., Fuchs, L., & Barnes, M. (2007). *Learning Disabilities: From Identification to Intervention.* New York: Guilford Press, ISBN-13: 978-1-59385-370-9).

Foorman, B. R., Francis, D. J., Fletcher, J. M., Schatschneider, C., & Mehta, P. (1998). The role of instruction in learning to read: Preventing reading failure in at-risk children. *Journal of Educational Psychology*, *90*, 37-55.

Foorman, B. R., & Torgesen, J. (2001). Critical elements of classroom and small group instruction promote reading success in all children. *Learning Disabilities Research & Practice*, *16*, 203-212.

Francis, D. J., Shaywitz, S. E., Stuebing, K. K., Shaywitz, B. A., & Fletcher, J. M. (1996). Developmental lag versus deficit models of reading disability: A longitudinal, individual growth curves study. *Journal of Educational Psychology*, *88*, 3-17.

Fuchs, L. S., Fuchs, D., Hosp, M. K., & Jenkins, J. R. (2001). Oral reading fluency as an indicator of reading competence: A theoretical, empirical, and historical analysis. *Scientific Studies of Reading*, *5*, 239-256.

Garet, M., Porter, A., Desimone, L., Birman, B., and Yoon, K. S. (2001) What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 2001, 38(4), 915–945.

Gove, A., & Cvelich, P. (2010). *Early reading: Igniting education for all. A report by the Early Grade Learning Community of Practice*. Research Triangle Park, NC: Research Triangle Institute. Retrieved from http://www.uis.unesco.org/Education/Documents/early-reading-report_gove_cvelich.pdf

Gove, A. & Wetterberg, A. (2009). *The Early Grade Reading Assessment: Applications and Interventions to Improve Basic Literacy*. Research Triangle Park: NC: RTI Press.

Gulamhussein, A. (2013). *Teaching the teachers: Effective professional development in an era of high stakes accountability*. Alexandria, VA: Center for Public Education. Retrieved from http://www.centerforpubliceducation.org/Main-Menu/Staffingstudents/Teaching-the-Teachers-Effective-Professional-Development-in-an-Era-of-High-Stakes-Accountability/Teaching-the-Teachers-Full-Report.pdf

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching: Theory and Practice*, *8*(3), 381-391.

Hanushek, E. & Woesmann, L. (2012). Do better schools lead to more growth? Cognitive skills, economic outcomes, and causation. *Journal of Economic Growth, 17,* 267-321. doi: 10.1007/s10887-012-9081-x

Hartwell, A. (2010). *National Literacy Acceleration Program (NALAP) implementation study*. Education Quality for All (EQUALL) project. Accra, Ghana: USAID/EQUALL.

Hasbrouck, J., & Tindal, G. (2006). Oral reading fluency norms: A valuable assessment tool for reading teachers. *Reading Teacher*, *59*, 636-644.

Heugh, K., Benson, C., Bogale, B., & Yohannes, M. A. G. (2007). *Final report study on medium of instruction in primary schools in Ethiopia*. Prepared for the Ethiopian Ministry of Education. Addis Ababa, Ethiopia: Ministry of Education.

Huebler, F. & Lu, W. (2013). Adult and Youth Literacy: National, Regional and Global Trends, 1985-2015. UNESCO Institute for Statistics. Retrieved from: http://www.uis.unesco.org/Education/Documents/literacy-statistics-trends-1985-2015.pdf

International Reading Association. (2000). Excellent reading teachers. *The Reading Teacher*, *54*(2), 235-240.

International Reading Association and National Association for the Education of Young Children. (1998). Learning to read and write: Developmentally appropriate practices for young children. *Young Children*, *53*(4), 30-46.

Johnson, A. P. (2015). *10 essential instructional elements for students with reading difficulties: A brain-friendly approach*. Thousand Oaks, CA: Corwin Press.

Johnson, S. M., & Kardos, S. M. (2008). The next generation of teachers: Who enters, who stays, and why. In M. Cochran-Smith, S. Feiman-Nemser, & D. J. McIntyre (Eds.), *Handbook on teacher education: Enduring questions in changing contexts* (3rd ed., pp. 445-467). New York, NY: Routledge.

Joshi, R., Binks, E., Hougen, M., Dahlgren, M., Ocker-Dean, E., & Smith, D. (2009). Why elementary teachers might be inadequately prepared to teach reading. *Journal of Learning Disabilities*, 42(5), 392–402.

Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, *80*, 437-447.

Juel, C., & Minden-Cupp, C. (2000). Learning to read words: Linguistic units and instructional strategies. *Reading Research Quarterly*, *35*, 458-492.

Kirkpatrick, D. L. (2006). Seven keys to unlock the four levels of evaluation. *Performance Improvement*, *45*(7), 5-8.

Kirkpatrick Partners. (2014). *The official site of the Kirkpatrick model*. Retrieved from http://www.kirkpatrickpartners.com

Kochetkova, E., & Brombacher, A. (2014). *Ghana 2013 early grade reading assessment and early grade mathematics assessment: Report of findings*. Washington, D.C.: USAID/Ghana. Available at: https://www.eddataglobal.org/documents/index.cfm/index.cfm?fuseaction=pubDetail&ID=569

Landry, S. H., Swank, P. R., & Smith, K. E., Assel, M. A., & Gunnewig, S. B. (2006). Enhancing early literacy skills for preschool children: Bringing a professional development model to scale. *Journal of Learning Disabilities*, *39*(4), 306.

Leeper, S. H., Witherspoon, R. L., & Day, B. (1984). *Good schools for young children* (5th ed.). New York, NY: Macmillan.

Leu, E., & Ginsberg, M. (2011). *First Principles: Designing effective education programs for in-service teacher professional development*. Washington, D.C.: USAID. Retrieved from http://www.equip123.net/webarticles//anmviewer.asp?a=703&z=12

Lyon, G. R. (1999). In celebration of science in the study of reading development, reading difficulties, and reading instruction: The NICHD perspective. *Issues in Education: Contributions From Educational Psychology*, 5, 85–115.

Lyon, G. R. (2005). Why scientific evidence must guide educational policy and instructional practices in learning disabilities. *Learning Disabilities Quarterly*, 28, 140–145.

Lyon, G. R., & Weiser, B. (2009). Teacher knowledge, instructional expertise, and the development of reading proficiency. *Journal of Learning Disabilities*, *42*(5), 475-480.

Mayer, R. E. (2011). *Applying the science of learning*. Boston, MA: Pearson Education.

Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco, CA: Jossey-Bass.

Moats, L. C. (2007). *Whole-language high jinks: How to tell when "scientifically-based reading instruction" isn't*. Washington, D.C.: Thomas B. Fordham Foundation.

Moats, L. C., & Foorman, B. R. (2003). Measuring teachers' content knowledge of language and reading. *Annals of Dyslexia*, *53*, 23-45.

Moats, L. C., & Lyon, G. R. (1996). Wanted: Teachers with knowledge of language. *Topics in Language Disorders*, *16*, 73-86.

Mulcahy-Dunn, A., Valadez, J. J., Cummiskey, C., & Hartwell, A. (2013). *Report on the pilot application of lot quality assurance sampling (LQAS) in Ghana to assess literacy and teaching in primary grade 3*. Washington, D.C.: USAID. Retrieved from https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&ID=545

National Early Literacy Panel. (2008). *Developing early literacy: Report of the National Early Literacy Panel*. Washington, DC: National Institute for Literacy. Retrieved from http://lincs.ed.gov/publications/pdf/NELPReport09.pdf

National Institute of Child Health and Human Development. (2000). *Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, D.C.: U.S. Government Printing Office.

National Reading Panel (US). (2000). *Report of the national reading panel: Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups*. Bethesda, MD: National Institute of Child Health and Human Development.

Neuman, S., & Cunningham, L. (2009). The impact of professional development and coaching on early language and literacy instructional practices. *American Educational Research Journal*, *46*(2), 532-566.

Neuman, S. B., & Dickinson, D. K. (2001). Introduction. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of Early Literacy Research*, pp. 3-10. New York, NY: Guilford Press.

O'Connor, R. E. (1999). Teachers learning Ladders to Literacy. *Learning Disabilities Research & Practice*, *14*, 203-214.

Odden, A., & Kelly, J. A. (2008, June). *Strategic management of human capital in public education*. Madison: University of Wisconsin-Madison, Wisconsin Center for Education Research. Retrieved from http://www.aypf.org/documents/StrategicManagementHC.pdf

Owu-Ewie, C. (2006). The language policy of education in Ghana: A critical look at the English-only language policy of education', in John Mugane et al. (eds) Selected Proceedings of the 35th Annual Conference on African Linguistics. Somerville, MA: Cascadilla Proceedings Project. Retrieved from http://www.lingref.com/cpp/acal/35/paper1298.pdf

Penuel, W. R., Fishman, B. J., Yamaguchi, R., & Gallagher, L. P. (2007). What makes professional development effective? strategies that foster curriculum implementation. *American Educational Research Journal*, 44(4), 921-958. doi:10.3102/0002831207308221

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, *95*(4), 667-686.

Piper, B. (2010). *Kenya early grade reading assessment findings report*. Research Triangle Park, NC: RTI International.

Podhajski, B., & Nathan, J. (2005). A pathway to reading success: Building blocks for literacy. *New England Reading Association Journal*, 41(2), 24. Retrieved from http://search.proquest.com.libproxy1.usc.edu/docview/206029748/fulltextPDF/FBBC398104484D16PQ/1?accountid=14749

Podhajski, B., Mather, N., Nathan, J., & Sammons, J. (2009). Professional development in scientifically based reading instruction: Teacher knowledge and reading outcomes. *Journal of Learning Disabilities*, *42*(5), 403-417. doi:10.1177/0022219409338737

Porche, M. V., Pallante, D. H., & Snow, C. E. (2012). Professional development for reading achievement: Results from the collaborative language and literacy instruction project (CLLIP). *The Elementary School Journal*, *112*(4), 649-671. doi:10.1086/665008

Pressley, M., Allington, R. L., Wharton-McDonald, R., Block Collins, C., & Morrow Mandel, L. (2001). *Learning to read: Lessons from exemplary first-grade classrooms*. New York, NY: Guilford.

Rosekrans, K., Sherris, A., & Chatry-Komarek, M. (2012). Education reform for the expansion of mother-tongue education in Ghana. *International Review of Education*, *58*(5), 593-618.

Rueda, R. (2011). *The 3 dimensions of improving student performance*. New York, NY: Teachers College Press.

Rupley, W. H., Wise, B. S., & Logan, J. W. (1986). Research in effective teaching: An overview of its development. In J. V. Hoffman (Ed.), *Effective teaching of reading: Research and practice* (pp. 3-36). Newark, DE: International Reading Association.

Samuels, S. (2006). Toward a model of reading fluency. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 24-46). Newark, DE: International Reading Association.

Saxe, G. B., Gearhart, M., & Nasir, N. S. (2001). Enhancing students' understanding of mathematics: A study of three contrasting approaches to professional support. Journal of

Showers, B. (1984). *Peer Coaching: A Strategy for Facilitating Transfer of Training.* A CEPM R&D Report. Retrieved from http://files.eric.ed.gov/fulltext/ED271849.pdf

Smith, P. L., & Ragan, T., J. (2005). *Instructional design.* Hoboken, NJ: John Wiley & Sons.

Smits, J., Huisman, J., & Kruijff, K. (2008). *Home language and education in the developing world*. Prepared for the Education For All Global Monitoring Report 2009, Overcoming inequality: Why governance matters. Paris, France: UNESCO. Retrieved from http://unesdoc.unesco.org/images/0017/001787/178702e.pdf

Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. Washington, D.C.: National Academies Press.

Snow, C.E., Griffin, P., Burns, M.S., & the NAE Subcommittee on Teaching Reading. (2005). *Knowledge to support the teaching of reading: Preparing teachers for a changing world.* San Francisco: Jossey-Bass.

Snow-Renner, R., & Lauer, P. A. (2005). *McREL insights: Professional development analysis.* Denver, CO: Mid-continent Research for Education and Learning. Retrieved from http://www.mcrel.org/~/media/Files/McREL/Homepage/Products/01_99/prod68_PD_analysis.ashx

Stainthorp, R. (2004). W(h)ither phonological awareness? Literate trainee teachers' lack of stable knowledge about the sound structure of words. *Educational Psychology*, *24*(6), 753-765. doi:10.1080/0144341042000271728

Stephens, D., Morgan, D., Donnelly, A., DeFord, D., Young, J., Seaman, M., & Meyer, P. (2007). *The South Carolina Reading Initiative: NCTE's Reading Initiative as a statewide staff development project.* Urbana, IL: National Council of Teachers of English. Retrieved from http://www.ncte.org/library/NCTEFiles/Resources/Magazine/SCRI_Report.pdf

Supovitz, J. A., Mayer, D. P., & Kahle, J. B. (2000). Promoting inquiry-based instructional practice: The longitudinal impact of professional development in the context of systemic reform. *Educational Policy,* 14(3), 331-356.

Taylor, B.M., Pearson, P.D., Clark, K., & Walpole, S. (1999). *Beating the odds in teaching all children to read: Lessons from effective schools and exemplary teachers (CIERA Report #2-006).* Ann Arbor, Ml: Center for the Improvement of Early Reading Achievement.

Taylor, B. M., Pearson, P. D., Peterson, D. S., & Rodriguez, M. C. (2005). The CIERA school change framework: An evidence-based approach to professional development and school reading improvement. *Reading Research Quarterly*, *40*, 40-69.

Torgesen, J. K. (1997). The prevention and remediation of reading disabilities: Evaluating what we know from research. *Journal of Academic Language Therapy*, *1*, 11-47.

Trudell, B (2005) Language choice, education and community identity. *International Journal of Educational Development, 25/3:* 237–251.

Trudell, B., Dowd, A., Piper, B., & Block, C. (2012). *Early grade literacy in African classrooms: Lessons learned and future directions*. Working document prepared by ADEA for its Triennale Meeting in Ouagadougou, Burkina Faso, 2012. Tunis, Tunisia: Association for the Development of Education in Africa.

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2008). *Improving the quality of mother tongue-based literacy and learning: Case studies from Asia, Africa and South America*. Bangkok, Thailand: UNESCO Asia and Pacific Regional Bureau for Education. Retrieved from http://unesdoc.unesco.org/images/0017/001777/177738e.pdf

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2009). *Literacy and community development programme: Country profile: Ghana*. Paris, France: Author. Retrieved from http://www.unesco.org/uil/litbase/?menu=13&programme=124

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2014). *EFA Global Monitoring Report: Teaching and learning: Achieving quality for all*. Paris, France: Author. Retrieved from http://unesdoc.unesco.org/images/0022/002256/225654e.pdf

UNESCO Institute for Statistics (2012). Opportunities lost: The impact of grade repetition and early school leaving. *Global Education Digest 2012*. Retrieved from: http://www.uis.unesco.org/Education/Documents/ged-2012-en.pdf

UNESCO Institute for Statistics (2013a, September). *Adult and youth literacy* (UIS Fact Sheet No. 26). Montreal, Canada: Author. Retrieved from http://www.uis.unesco.org/literacy/Documents/fs26-2013-literacy-en.pdf

UNESCO Institute for Statistics. (2013b). *International literacy data 2013.* Montreal, Canada: Author. Retrieved from http://www.uis.unesco.org/literacy/Pages/data-release-map-2013.aspx

UNESCO Institute for Statistics. (2014). *Country profiles: Ghana*. Montreal, Canada: Author. Retrieved from http://www.uis.unesco.org/DataCentre/Pages/country-profile.aspx?code=GHA&regioncode=40540

University of Oregon Center on Teaching and Learning. (2009). *Big ideas in beginning reading*. Retrieved from http://reading.uoregon.edu

U.S. Agency for International Development. (2008). *EdData II EGRA: Frequently asked questions.* Prepared by RTI International. Available at: http://pdf.usaid.gov/pdf_docs/PNADL848.pdf

U.S. Agency for International Development/Ghana. (2011). *NALAP formative evaluation report, Ghana* (EdData II Task Order 7). Washington, D.C.: Author. Retrieved from https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&ID=317

U.S. Agency for International Development/Ghana. (2012). *USAID Ghana country development cooperation strategy, 2013-2017*. Washington, D.C.: Author. Retrieved from http://www.usaid.gov/sites/default/files/documents/1860/Ghana_CDCS_fy2013-17.pdf

U.S. Agency for International Development/Ghana. (2014). *Proposed benchmarks for early grade reading and mathematics in Ghana: Activity report*. Washington, D.C.: Author. Retrieved from https://www.eddataglobal.org/documents/index.cfm?fuseaction=pubDetail&ID=577

Vaughn, S., Linan-Thompson, S., Kouzekanani, K., Bryant, D. P., Dickson, S., & Blozis, S. A. (2003). Reading instruction grouping for students with reading difficulties. *Remedial and Special Education*, *24*, 301-315.

Vaughn, S., Moody, S., & Schumm, J. S. (1998). Broken promises: Reading instruction in the resource room. *Exceptional Children*, *64*, 211-226.

Vellutino, F. R., Scanlon, D. M., & Jaccard, J. (2003). Toward distinguishing between cognitive and experiential deficits as primary sources of difficulty in learning to read: A two-year follow-up of difficult to remediate and readily remediated poor readers. In B. R. Foorman (Ed.), *Preventing and remediating reading difficulties: Bringing science to scale* (pp. 73-120). Baltimore, MD: York Press.

Villegas-Reimers, E. (2003). *Teacher professional development: An international review of the literature*. Paris, France: IIEP-UNESCO.

Vygotsky, L. S. (1986). *Thought and language* (A. Kozalin, Trans.) Cambridge, MA: The MIT Press (Original work published 1934)

Walsh, K., Glaser, D., & Dunne-Wilcox, D. (2006). *What education schools aren't teaching about reading and what elementary teachers aren't learning*. Washington, D.C.: National Council for Teacher Quality.

Wei, R. C., Darling-Hammond, L., Andree, A., & Richardson, N., & Orphanos, S. (2009). *Professional learning in the learning profession: A status report on teacher development in the United States and abroad*. Dallas TX: National Staff Development Council.

Whitehurst, G. J., & Lonigan, C. J. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of Early Literacy Research*, pp. 11-29. New York, NY: Guilford Press.

World Education. (2014). *Ghana Mother Tongue Literacy Pilot.* Project Overview Abstract. Unpublished work

Eastern Akuapim North Demographic Characteristics. (2006). Retrieved from http://www.ghanadistricts.com/districts/?r=4&_=65&sa=4582

Wren, S. (2003). *What does a "balanced approach" to reading instruction mean?* Retrieved from http://www.balancedreading.com/balanced.html

Wylie, E. C. (2008). *Tight but loose: Scaling up teacher professional development in diverse contexts*. Princeton, NJ: Educational Testing Service.

Yoon, K., Duncan, T., Lee, S., Scarloss, B., & Shapley, K. (2007). *Reviewing the evidence on how teacher professional development affects student achievement*: Issues & answers. REL 2007-No. 033. Regional Educational Laboratory Southwest.

APPENDICES

Appendix A:

Sources for Identification of Assumed KMO Causes

Table A1

Sources for Identification of Assumed Knowledge, Motivational, and Organizational Causes

Knowledge	Assumed Cause	Lit. Review	Scanning Interviews	Learning Theory
K1	Teachers do not know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension	X	X	
K2	Teachers do not know how to explicitly teach phonics and decoding skills	X		
K3	Teachers are not proficient in speaking and reading the Ghanaian language	X		
K4	Teachers do not know how to integrate the five skills to teach reading fluency and comprehension	X		
K5	Teachers do not know how to use teaching aids to foster learning of the five reading skills	X		
K6	Teachers do not know how to produce TLMs	X		
K7	Teachers do now know the crucial links of first and second language learning; believe that English is more important to learn	X		
K8	Teachers do not know the standards and milestones for reading and bi-literacy in KG and P1		X	
K9	Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones	X		
K10	Teachers do not know how to effectively assess their students' reading progress		X	
K11	Teachers do not know how to apply metacognitive (critical reflection) skills and differentiated instructional methods			X

K12	Teachers do not know how to use child-centered pedagogies (guided learning, small group work)	X		

Table A1, continued

Motivation	Assumed Cause	Lit. Review	Scanning Interviews	Learning Theory
M1	Teachers do not place a high value on teaching due to the profession's low economic and social status (Task value)		X	
M2	Teachers do not see the value of teaching reading in the mother tongue language (e.g., think English is more important) (Task value)			X
M3	Teachers do not expect all their students read with comprehension by the end of P3 (Expectancy theory)	X		X
M4	Teachers are not confident teaching in the Ghanaian language or English (Self-efficacy)	X		X
M5	Teachers are not confident in using the teaching guide and teaching aids (Self-efficacy)	X		
M6	Teachers do not enjoy teaching reading (Intrinsic value)			X
M7	Teachers believe that students' reading proficiency is largely due to factors beyond their control (e.g., classroom size) (Attribution theory)			X
M8	Teachers are not confident in their ability to teach reading (Self-efficacy)	X		
M9	Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work) (Self-efficacy)	X		
M10	Teachers do not believe the NALAP material is relevant because the language selected for the region differs from students' mother tongue language (Utility value)	X	X	

Table A1, continued

Organization	Assumed Cause	Lit. Review	Scanning Interviews	Learning Theory
O1	Insufficient teacher's guides and student textbooks		X	
O2	Lack of supplementary teaching and learning materials appropriate for the NALAP curriculum		X	
O3	Teacher's guides, schemes of work and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening		X	
O4	Insufficient training to master NALAP methodologies	X	X	
O5	Overcrowded classes prevent teachers from using child-centered strategies	X	X	
O6	Lack of ongoing support and coaching on NALAP implementation in the classroom	X		
O7	Limited opportunities to exchange ideas with other teachers (no learning communities or unable to participate)	X		
O8	Insufficient courses on reading instruction in the teacher college	X		
O9	Limited opportunities for teaching reading during teaching practicum	X		
O10	Challenges adhering to the 90-minute timetable	X		
O11	Reading methodology and five key skills are not explicitly described in the teacher's guide		X	
O12	Language selected as medium of instruction is not the pupil's first language		X	

Appendix B:

Summary of Assumed Knowledge Causes and Validation Methods

Table B1

Summary of Assumed Knowledge Causes and Validation Methods

		How will it be validated?
Assumed cause	Instrument	Question
Teachers do not know the five key elements of effective reading instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension	Survey item (open-ended)	What are the essential reading skills children need to learn to be able to read fluently?
	Classroom observation	Observe a reading class and record activities conducted (phonemic awareness, decoding/phonics, reading comprehension, developing vocabulary)
Teachers do not know how to explicitly teach phonics and decoding skills	Survey item (open-ended)	What activities do you use to teach students letter sound correspondence (e.g., the sound of the letters of the alphabet or of words)?
	Classroom observation	Observe a reading class and record word decoding activities conducted (teaching letter sounds, syllables, blending and segmenting)
Teachers are not proficient in speaking and reading the Ghanaian language of instruction	Survey item (5 pt. Likert scale)	Rate how well you speak, read and write the NALAP language selected for the medium of instruction (Native, Fluent, Proficient, Limited, or not at all)
Teachers do not know how to integrate the five skills, such as decoding and comprehension, to teach reading fluency and comprehension	Classroom observation	Observe a reading class and record activities conducted (phonemic awareness, decoding/phonics, reading comprehension, developing vocabulary)
Teachers do not know how to use teaching aids to foster learning of the five skills	Classroom observations	Observe class and record whether teachers used materials and how they were used.
	Interview	(follow-up question to below) – How do the TLMs hinder or support learning?
Teachers do not know how to produce TLMs	Interview	What types of TLMs do you currently use to teach reading? How did you obtain these TLMs? (Did you produce them or did the government provide them?)
Teachers do now know the crucial links of first and second language learning; believe that English is more important to learn	Survey item (4 pt. Likert scale)	a. It is more important for children to learn to read in their mother tongue before learning a second language (Strongly disagree, disagree, agree, strongly agree) b. It is better for children to learn English first when they enter school (strongly disagree, disagree, agree, strongly agree).

Table B1, continued

	How will it be validated?	
Assumed cause	Instrument	Question
Teachers do not know the standards and milestones for reading and bi-literacy in KG and P1	Classroom observation	Ask teachers about the lesson objectives and how they relate to the standards and milestones.
Teachers do not know how to develop lessons in the Ghanaian language aligned with NALAP milestones	Document analysis	Collect teachers' lessons notes, schemes of work and teacher's guide; review lesson objectives to determine whether they list the milestones
Teachers do not know how to effectively assess their students' reading progress	Interview question	How do you typically keep track of students' reading progress?
	Document analysis	Request to see teacher's grade book or record of students' reading progress.
Teachers do not know how to apply critical reflection skills and differentiated instructional methods	Classroom observation	What types of activities do teachers use to promote reading in the classroom? Check all that apply: repetition, choral reading, code-switching, explicit and systematic instruction of phonics and decoding, guided practice of reading and comprehension, small-group work, pair work, assessment of learners, individual instruction for struggling learners
	Interview	What types of strategies do you use to support struggling learners?
	Survey item (a. close-ended; b. multiple choice; c. open-ended)	a. How much time do you spend critically reflecting on your reading lessons? Per day ___; per week___ b. How do you typically reflect on lessons (individually, using a reflection journal, using an assessment rubric, with a coach, with the HT, with other teachers, other)? c. Provide teachers with a scenario of two different student profiles (a fast reader and a slow reader). Ask how they would adapt their approach to meet each learners' needs?

Table B1, continued

		How will it be validated?
Assumed cause	Instrument	Question
Teachers do not know how to use child-centered pedagogies (e.g., guided-learning, small group work)	Classroom observation	Record the amount of time spent on: a. Guided practice b. Small group work, silent reading or child-centered activities c. Any difficulties with classroom management
	Interview questions	a. How much time do you devote to guided practice (reading aloud) on average in a typical class? b. How much time do you devote to small-group work, silent reading or interactive child-centered activities? c. Is it difficult to manage child-centered activities, as suggested in the NALAP guide?

Appendix C:

Summary of Assumed Motivational Causes and Validation Methods

Table C1

Summary of Assumed Motivation Causes and Validation

			How will it be validated?	
Motivational Problem	Type of Indicator	Possible Causes	Instrument	Item
Frequent teacher absenteeism	Active choice	Teachers do not place a high value on teaching due to low economic and social status. (Cost value)	Survey	Please rank the social status of teachers as compared to other professions (high, average, low or poor).
			Interview	What barriers do teachers face that prevent them from attending school regularly?
Teachers do not use the NALAP teaching and learning materials as intended	Active Choice	Teachers do not see the value of teaching reading in the mother tongue (think English is more important) (Task value)	Interview	How important is it for students to learn how to read in their mother tongue?
			Survey (4-pt. Likert scale)	a. I believe it is important for children to learn how to read in their mother tongue.
				b. I believe it is better for children to learn English as soon as they enter school.
		Teachers do not enjoy teaching reading (intrinsic value) (M6)	Survey	I enjoy teaching my students how to read books.
		Teachers may not believe the NALAP methodology is relevant because the language selected for the region differs from students' mother tongue language.	Interview	How many pupils speak the NALAP language as their mother tongue? (the majority, half, less than half)

Table C1, continued

			How will it be validated?	
Motivational Problem	Type of Indicator	Possible Causes	Instrument	Item
Teachers do not consistently apply the NALAP principles in teaching reading (e.g., adhere to 40 minute reading time, apply silent-reading, and child-centered strategies)	Mental effort	Teachers do not expect all their students to read with comprehension by the end of P3 (expectancy theory)	Survey	a. I do not expect all students to be able to read with comprehension in the local language by the end of P3. b. Learning reading comprehension is more appropriate for upper primary than the early grades.
	Mental effort	Teachers are not confident teaching in the Ghanaian language or English (Self-efficacy)	Survey	a. I am confident in my ability to read and write the mother tongue/English language well. (Strongly disagree, disagree, agree, strongly agree) b. How confident do you feel about your ability to teach listening, reading and writing skills in the English language?" (very confident…) c. How confident do you feel in your ability to teach listening, reading and writing skills in the Ghanaian language?" (very confident…)
		Teachers believe student acquisition of reading proficiency is largely due to factors beyond their control (attribution theory)	Survey	a. Student proficiency in reading is largely dependent on my teaching ability. b. Students' reading achievement is largely dependent on other factors beyond the teachers' control.
			Interview	a. Does your classroom size have any effect on your ability to fully teach the reading methods and activities in the teacher's guide?

Table C1, continued

			How will it be validated?	
Motivational Problem	Type of Indicator	Possible Causes	Instrument	Item
Teachers do not consistently apply the NALAP principles in teaching reading	Mental Effort	Teachers are not confident in their ability to teach reading (self-efficacy)	Survey	How confident do you feel in your ability to teach reading? (very, somewhat, enough, a little, not at all)
Teachers have stopped using the NALAP teacher's guide and materials	Persistence	Teachers are not confident in using the teacher's guide or teaching aids. (Self-efficacy)	Interview	a. What do you think are the strengths and weaknesses of the NALAP methodology? b. Have you experienced any challenges with using the teacher's guide or teaching aids?
			Survey	How confident do you feel in your ability to use the teacher's guide and relevant teaching aids to teach reading? (Very; somewhat, enough, a little, not at all)
Teachers have stopped using the NALAP teacher's guide and materials	Persistence	Teachers are not confident in managing classrooms (supporting struggling learners, facilitating small group work) (self-efficacy)	Survey	a. How confident do you feel in managing classrooms? (Very; somewhat, Not very, not at all) b. How prepared are you to address the needs of struggling learners? (Very; somewhat, enough, a little, not at all)
			Interview	What types of strategies do you use to support struggling learners?

Appendix D:

Summary of Assumed Organizational Causes and Validation Methods

Table D1

Summary of Assumed Organizational Causes and Validation

		How Will it be Validated?	
Organizational Problem	Possible Organizational Causes	Instrument	Item
Low reading levels due to poor teaching quality (teachers do not adhere to the teacher's guide or use the teaching and learning materials appropriately)	Insufficient teacher's guides and student textbooks	Survey	Do you have a teacher's guide? What is the pupil to textbook ratio? (one per student, one per two students, one per three or more students)
	Lack of supplementary teaching aids and reading resources appropriate for the NALAP curriculum	Post-classroom observation interview	a. What kinds of teaching aids do you use to teach reading classes? b. Do you have supplementary reading books for students? If yes, verify whether reading corner in classroom, library or purchased by parents.
	Teacher's guides, schemes of work and lesson plans are not aligned with NALAP milestones for bilingual speaking and listening	Document analysis	Collect teachers' lessons notes, schemes of work and teacher's guide; review lesson objectives to determine whether they list the milestones
	Inadequate training to master the NALAP teaching methodologies and materials	Interview	a. Have you participated in any training on the NALAP curriculum? If yes, when? What did you learn? b. Was the training sufficient to give you the skills and knowledge you needed to apply the lessons in the classroom? Why or why not? c. Is there any additional support needed to help you successfully use the NALAP teacher's guide and TLMs? If yes, what types of support?

Table D1, continued

		How Will it be Validated?	
Organizational Problem	Possible Organizational Causes	Instrument	Item
Low reading levels due to poor teaching quality (teachers do not adhere to the teacher's guide or use the teaching and learning materials appropriately)	Lack of ongoing support and coaching on implementing the NALAP methodologies in the classroom	Interview question	Have you received any coaching, mentoring or assistance with implementing the reading methods and materials in the classroom? If yes, from whom and how often?
	Overcrowded classes prevent teachers from using child-centered strategies	Document analysis	Review student register and school profile to identify the number of students enrolled in Grades KG1, KG2 and P1. (Verify number of students attending during classroom observation)
Low reading levels due to poor teaching quality (teachers do not adhere to the teacher's guide or use the teaching and learning materials appropriately)		Classroom observation	Record the amount of time spent on: a. guided practice b. small group work, silent reading or child-centered activities c. any difficulties with classroom management

Table D1, continued

		How Will it be Validated?	
Organizational Problem	Possible Organizational Causes	Instrument	Item
Low reading levels due to poor teaching quality (teachers do not adhere to the teacher's guide or use the teaching and learning materials appropriately)	Limited opportunities to exchange ideas with other teachers or for critical reflection of lessons (no learning communities or unable to participate)	Survey - open and multiple choice question	Have you attended professional development meetings? What do you generally do at the meetings? (share ideas, practice lessons, reflect critically on teaching, develop schemes of work) Is there time built into the day or week for critically reflecting on your teaching lessons?
		Interview	Is there time built into the day or week for critically reflecting on your teaching lessons?
	Insufficient courses on reading instruction in the teacher college	Interview	a. What courses related to reading instruction did you take at the teacher college? b. Were any courses dedicated to reading instruction in early childhood (KG-P1)? If yes, what did you learn?
	Limited opportunities to teach reading during teaching practicum	Interview	a. Did you participate in a teaching practicum during your pre-service teacher training? b. If yes, how many hours did you spend teaching reading or language classes? c. Which grades did you teach?
	Challenges adhering to the 90-minute timetable	Classroom observation	Class start and end times will be recorded.
	Reading methodology and five key skills are not explicitly described in the teacher's guide	Document analysis	Review teacher's guide to see whether five key skills and methodology are explicitly described and easy to follow.
	Language selected as medium of instruction is not the pupil's first language	Interview	How many pupils speak the NALAP language of instruction as their mother tongue? (the majority, half, less than half)

Appendix E:

Data Collection Instruments

Section A: Semi-Structured Teacher Interview Protocol

Instructions: Interview all primary teachers in grades KG1, KG2, and P1 from each class.

1. How long have you been a teacher?
    a. Total number of years ____
    b. Number of years in this school? ____

2. Did you attend the teaching college? If yes:
    a. What courses related to reading instruction did you take at the teacher college?
    b. Were any courses dedicated to reading instruction in early childhood (KG-P1)? If yes, what did you learn?

3. Did you participate in a teaching practicum during your pre-service teacher training? If yes:
    a. How many hours did you spend teaching reading or language classes? _____
    b. Which grades did you teach? _____

4. Have you attended any conferences or professional development workshops on reading instruction? If yes, when and where?

5. Have you participated in any training on the NALAP (National Literacy Acceleration Program) curriculum?
    a. If yes, when? _____
    b. What did you learn? Can you explain what NALAP is trying to achieve and what methods it suggests to achieve this goal?

6. Was the NALAP training sufficient to give you the skills and knowledge you needed to apply the reading lessons in the classroom? Why or why not?

7. If yes, which methods have you applied that you learned during the training? Were they effective? Why or why not?

8. What types of TLMs do you currently use to teach reading?
    a. How did you obtain these TLMs? Did you produce them or did the government provide them? Are they related to NALAP?
    b. Do the use of TLMs hinder or support learning?

9. Have you experienced any challenges with using the NALAP teaching guide or teaching aids (TLMs) in the classroom? If yes, what challenges specifically?
    a. Is the time allotted to reading sufficient to teach the daily NALAP lesson plans?
    b. Is it difficult to transition to English during the period?
    c. Do your students struggle with learning English or the local language?
    d. Are there any other challenges?

10. How important is it for students to learn how to read in their mother tongue?

11. How many pupils speak the NALAP language as their mother tongue?
    a. The majority (80-90%)
    b. Half (50-60%)
    c. Less than half (30-40%)

12. Have you received any coaching, mentoring or assistance with implementing the reading methods and materials in the classroom? If yes, from whom and how often?
    a. Assistance from the Student teacher
    b. Assistance from Head Teacher
    c. Coaching or team-teaching with Head Teacher
    d. Coaching/training from Circuit Supervisor
    e. Coaching/training from Master Trainer
    f. Other type of assistance _____

13. Is there any additional support needed to help you successfully use the NALAP teacher's guide and TLMs? If yes, what kinds?

14. Does your classroom size have any effect on your ability to fully teach the reading methods and activities in the teacher's guide?

15. (If large class sizes) Are there any classroom management strategies you have tried to overcome the burden of overcrowded classes? If yes, what?

16. Is teacher absenteeism a problem at this school (or cite examples, if known)? If yes, what barriers do teachers face that prevent them from attending school regularly?

17. How do you assess whether students are able to read? How do you typically keep track of students' reading progress?

18. Do you adapt your teaching methods to suit different learners? If yes, how? What types of strategies do you use to support struggling learners?
    a. How much time do you devote to guided practice (reading aloud) on average in a typical class? _____
    b. How much time do you devote to small-group work, silent reading, or interactive child-centered activities? _____
    c. Is it difficult to manage child-centered activities as suggested in NALAP guide?

19. What is your schedule? How much do you spend in the classroom?
    a. Apart from teaching, what other activities do you participate in?
    b. Is there time built into the day/week for critically reflecting on your lessons?

20. What do you think are the strengths and weaknesses of the NALAP methodology?

Section B: Teacher Survey

1. What is your highest level of education?
    a. High School Diploma
    b. Post-secondary teaching diploma
    c. BA/BS _____
    d. Master's _____
    e. Professional training certificate _____
    f. Other _____

2. Do you have a NALAP teacher's guide for the English and local language classes?
    - ☐ Yes for local language
    - ☐ Yes for English
    - ☐ No for _____
    - ☐ No for both

3. What is the pupil to textbook ratio? (O1)
    ☐ 1 book per pupil (all pupils have books)
    ☐ 1 book per 2 pupils (1/2 class has books)
    ☐ 1 book per 3 pupils (1/3 class has books)
    ☐ Less than one-third class has books

4. What kinds of teaching and learning materials do you use to teach reading classes?
    ❒ Teacher's guide for NALAP instruction
    ❒ Pupil textbook (English)
    ❒ Pupil textbook (Local language)
    ❒ Big books
    ❒ Audio/video tapes
    ❒ Conversational posters
    ❒ Alphabetic letters/alphabet cards
    ❒ Pupil reader (English)
    ❒ Pupil reader (local language)
    ❒ Other _____
    ❒ None
5. How many pupils have readers apart from the pupil book?
    ☐ 1 book per pupil (all pupils have books)
    ☐ 1 book per 2 pupils (1/2 class has books)
    ☐ 1 book per 3 pupils (1/3 class has books)
    ☐ Less than one-third class has books

6. Where are the books located?
   - ❒ Reading corner in classroom
   - ❒ Library
   - ❒ Each child brings his/her own (parent's purchase)
   - ❒ Each child brings his/her own (provided by school)
   - ❒ Books are stored in a locked cabinet in the classroom or school
   - ❒ Other: _____

7. How many pupils have exercise books and pens/pencils?
   a. All pupils
   b. More than half
   c. Half
   d. Less than half
   e. None

8. What are the essential skills children need to learn to be able to read fluently?

9. What activities do you use to teach students letter sound correspondence (e.g., the sound of the letters of the alphabet)?

10. Have you ever used any of the following skills in the classroom?
    a. Pupil-centered teaching
    b. Classroom management
    c. Managing reading resources in the classroom
    d. Phonemic awareness
    e. Phonics
    f. Language experience approach (LEA)
    g. Decoding words
    h. Guided reading
    i. Using prior knowledge
    j. Meaning making/reading comprehension
    k. Differentiated learning strategies
    l. Pupil assessments of reading
    m. Pupil assessments of writing skills
    n. Other, please describe: _____

11. Do pupils' reading levels vary in your class? If yes, are you able to meet the varying needs of learners in your class? Why or why not?

12. Could you give me an example of how you adapt your teaching style? Imagine, for example, you had a student who began reading with her older brother or sister prior to coming to school and is already able to read sentences and short paragraphs. How would you adapt your teaching style to meet the needs of this advanced learner?

13. Imagine you have a struggling learner who never attended KG, does not receive any help from their parents, and has trouble learning the correct sounds of the letters? How would you help this struggling learner?

14. How much time do you spend critically reflecting on your reading lessons?
    a. Per day _____
    b. Per week_____

15. How do you typically reflect on your lessons?
    a. Individually on own time
    b. During school time using a reflection journal
    c. During school time using an assessment rubric
    d. After an observation and feedback from a coach
    e. After an observation and feedback from the Head Teacher
    f. With other teachers during school time
    g. Other, please explain _____

16. Have you attended learning circles or professional development meetings?
    a. Yes; If yes, how often per term: _____
    b. No

17. What do you generally do at the meetings?
    a. Share ideas
    b. Practice lessons
    c. Reflect critically on teaching
    d. Develop schemes of work
    e. Other, please explain: _____

18. Which of the NALAP languages are taught in your school? Check all that apply:
    a. English
    b. Akuapem
    c. Asante
    d. Fante
    e. Nzema
    f. Dangme
    g. Ewe
    h. Ga
    i. Twi
    j. Gonja
    k. Kasem
    l. Dagbani
    m. Dagaare
    n. Gurunne

19. Please rate how well you speak, read, and write the NALAP languages selected for the medium of instruction. *See key below table for definitions of levels. Place a tick* (✔) *under the correct level of fluency.*

Language	Skill	Native	Fluent	Proficient	Limited	Not at all
Akuapem	Speak					
	Read					
	Write					
English	Speak					
	Read					
	Write					
Asante	Speak					
	Read					
	Write					
Fante	Speak					
	Read					
	Write					
Nzema	Speak					
	Read					
	Write					
Dangme	Speak					
	Read					
	Write					
Ewe	Speak					
	Read					
	Write					
Ga	Speak					
	Read					
	Write					
Other	Speak					
	Read					
	Write					

Key

- *Native*. Able to speak like a highly articulate well-educated native speaker. Reading proficiency is equivalent to that of a well-educated native reader.
- *Fluent*. Able to speak fluently and accurately at all levels. Nearly native ability to read and understand extremely difficult text.
- *Proficient.* Able to speak, read, and write with sufficient structural accuracy and vocabulary to effectively communicate in formal and informal conversations.
- *Limited.* Able to understand familiar language. Sufficient comprehension to read simple, authentic written material on familiar subjects.

20. Please rate the social status of teachers' as compared to other professions (e.g., civil servants, engineers, architects, health care professionals, other occupations requiring university degree/diploma). Tick the box that reflects teacher's position in society compared to others in similar professions.
    - ❒ High
    - ❒ Above average
    - ❒ Average
    - ❒ Below Average
    - ❒ Poor

21. Please rate the economic status of teachers as compared to other professions (e.g., civil servants, engineers, architects, health care professionals, other occupations requiring university degree/diploma). Tick the box that reflects teachers' salary as compared to others in similar professions.
    - ❒ High
    - ❒ Above average
    - ❒ Average
    - ❒ Below Average
    - ❒ Poor

22. Please rate how strongly you agree with the following statements: Place a tick (✔) under your response.

Question	Strongly Disagree	Disagree	Agree	Strongly Agree
1a. I believe it is important for children to learn how to read in their mother tongue language before learning a second language.				
1b. I believe it is better for children to learn English as soon as they enter school.				
3. I enjoy teaching my students how to read books.				
4a. I am confident in my ability to read and write in the local language well				
4b. I am confident in my ability to read and write the English language well				
5a. I do not expect all my students to be able to read with comprehension in the local language by the end of P3.				
5b. Learning comprehension is more appropriate for upper primary than the early grades.				
6a. Student proficiency in reading is largely dependent upon my teaching ability.				
6b. Students' reading achievement is largely dependent on other factors beyond the teachers' control.				
7a. The costs associated with teaching (e.g., transportation fees, travel time, out-of-pocket expenses for materials/supplies, etc.) reduce teachers' motivation to attend school regularly.				
7b. I think teachers should come to school regularly regardless of the costs incurred by the teacher.				

23. Please rate how confident you feel with regards to the following questions (very confident, somewhat confident, a little confident, not at all confident): Place a tick (✔) under your response.

Question	Very	Somewhat	A little	Not at all
1. How confident do you feel in your ability to teach reading?				
2. How confident do you feel in your ability to use the teacher's guide and relevant teaching aids to teach reading?				
3. How confident do you feel about your ability to teach listening, reading and writing skills in the English language?				
4. How confident do you feel in your ability to teach listening, reading and writing skills in the Ghanaian language?				
5. How confident do you feel in managing classrooms (multilingual, small group work, etc.)?				
6. How prepared are you to address the needs of struggling learners?				

24. Please rate how strongly you agree with the following questions: (World Education-specific questions) Place a tick (✔) under your response.

Question	Strongly Disagree	Disagree	Agree	Strongly Agree
NALAP training introduced me to general pedagogies for teaching literacy in the early grades.				
NALAP training is adequate for my needs in the classroom.				
The NALAP Teacher's Guide is easy to use.				
NALAP materials are available for me to use in the classroom.				
NALAP materials are useful and assist me in teaching.				
Children will find learning to read easier if they are taught in their mother tongue.				
English is necessary to obtain a good job.				
I feel that students should not speak their mother tongue outside of the Language and Literacy class when they are at school.				
English should be the only language taught at school.				
I am motivated to implement NALAP.				
NALAP is difficult for me to implement.				
The community surrounding the school understandings the purpose and importance of NALAP.				
The community supports the use of the mother tongue language in early primary.				
The community believes English should be the only language taught in school from KG/P1.				
NALAP should continue to be implemented nationally.				

25. Please rank the following NALAP goals in order of importance from 1 to 10, with one being the most important and 10 the least important:
    - ❒ Enable students to read text in English
    - ❒ Enable students to read text in mother tongue
    - ❒ Improve literacy rates in English
    - ❒ Improve literacy rates in mother tongue
    - ❒ Introduce student-centered instruction
    - ❒ Improve social status of Ghanaian languages
    - ❒ Prepare students for secondary school
    - ❒ Provide students with skills that will aid them in future employment
    - ❒ Improve Ghana's ability to participate in global economy/trade
    - ❒ Develop fluent English speakers

26. Do you have any comments you would like to add in relation to the above questions?

Section C: Document Analysis Checklist

Teacher's Guide

Instructions: Review teacher's guide to see whether the following five key reading skills and methodology are explicitly described and easy to follow:

- ❒ Phonological Awareness
- ❒ Phonics/Decoding
- ❒ Vocabulary
- ❒ Fluency
- ❒ Comprehension

Review the teachers' guide to determine whether it lists and describes the milestones.

Lesson Alignment with Milestones

Instructions: Collect the teacher's scheme of work and lesson plan. Compare the lesson objectives with the bi-literacy and bilingual milestones. Determine whether lesson objectives aim to achieve the reading skills and milestones.

	Present in lesson objectives	
Ghanaian milestones of bi-literacy: Kindergarten (KG1-KG2) and lower primary (P1-P3)	Yes	No
Print Concepts		
1.1 Knows that print and written symbols convey meaning and represent spoken language.		
1.2 Knows that print is read from left to right and top to bottom, and recognizes familiar print in the environment (e.g. labels, traffic signs, logos, such as those for vehicles and TV stations, etc.).		
1.3 Knows that books have titles, authors, and often illustrators.		
1.4 Knows the proper way to handle books (i.e. holds the book upright; turns pages from front to back, one at a time).		
Phonological Awareness		
2.1 Knows about the sounds words have, apart from their meaning – for example, knows about syllables (e.g. "kitchen" has two syllables); knows about rhymes (e.g. "bed" and "bread"); recognizes similar starting sounds (e.g. "cat" and "king").		
Decoding and Word Analysis		
3.1 Recognizes and produces letters, and differentiates them from numbers and shapes.		
3.2 Knows the letters of the alphabet in order.		
Vocabulary		
4.1 Knows some sight words, such as own name.		
Comprehension		
5.1 Uses pictures and prior knowledge to aid comprehension and predict story events and outcomes		

	Present in lesson objectives	
Ghanaian milestones for bilingual speaking and listening Kindergarten (KG1-KG2) and early primary (P1)	Yes	No
Sound Production and Discrimination		
1.1 Begins to produce and discriminate distinctive sounds.		
1.2 Begins to understand speech containing pauses, errors and corrections.		
Vocabulary		
2.1 Recognizes and uses meaningful chunks of language of different lengths (e.g. Can I have ___; I don't know)		
2.2 Recognizes and uses frequently occurring content words (e.g. house, young, sing).		
Comprehension and Communication		
3.1 Participates in communication in simple and often ungrammatical language.		
3.2 Uses background knowledge to understand and convey meaning.		
3.3 Initiates talking and responds to talking during conversation.		
3.4 Uses private speech as a learning strategy.		
3.5 Understands and expresses a number of basic communicative meanings (e.g., greetings, asking and answering questions)		
3.6 Recognizes and uses appropriate facial expressions, gestures and body movement that convey meaning.		
3.7 Recognizes and uses stress, rhythm and intonation that convey meaning.		
3.8 Recognizes and uses basic word order patterns that convey meaning.		
3.9 Addresses communicative problems by clarifying or seeking clarification (e.g. through rewordings and repetitions).		

Student Enrollment/Class Size

Instructions: Visit the Head Teacher's office. Request to see the student registrar and/or the school profile. Record total number of students enrolled in KG1, KG2, and P1.

Standard/Class	Total number of students
KG1	
KG2	
P1	

Grading of Reading Progress

Instructions: Request to see teacher's grade book, continuing assessment form, or record of students' reading progress.

Section D: Classroom Observation Tool

Instructions: Randomly select a P1 class for observation. Ensure that it is a language class. Observe the class for 30-45 minutes. Complete Section A prior to class, sections B and C during the classroom observation, and section D post-observation. Allow one hour to complete this instrument.

A. Classroom Demographic Information

	Teacher Identification Information *(complete this before the lesson begins with information from the head teacher and/or teacher)*
1	Grade level and class to be observed: a. ☐ P1A b. ☐ P1B c. ☐ P1C
2	Subject of class to be observed: a. ☐ Reading (literacy 1) b. ☐ writing (literacy 2) c. ☐ English d.☐ Local Language
3	# of learners in class (O5) Students Enrolled Present Boys Girls Total
4	Local language school uses for instruction in P1-P3: a. ☐ Akuapem Twi b. ☐ English c. ☐ Other_____ (specify)
5	Class start time: _____

B. Classroom Observation

Instructions: Place a tick (✔) for each activity observed. The activity may last for less than 10 minutes. Note in which interval of the class the activity took place to track sequencing of tasks.

Ghanaian milestones of bi-literacy observed	10	20	30	40
Print Concepts: Reviewing features of books (i.e. holds the book upright; turns pages from front to back, one at a time)				
Phonological awareness: Practicing correct letter sounds				
Phonological awareness: Reading syllables (seeing words made up as syllables e.g., kit-ten) ("beat the word" – clap, beat/tap/stamp the syllables of the word)				
Letter analysis: Learning the alphabet, reading letters				
Decoding and letter analysis: Blending letter sounds to make words, breaking apart whole words				
Vocabulary: Reading key familiar/sight words				
Comprehension: Uses pictures and prior knowledge to aid comprehension and predict story events and outcomes; guided practice of reading and comprehension				
Ghanaian milestones for bilingual speaking and listening observed	**10**	**20**	**30**	**40**
Practice sound production and discrimination				
Vocabulary within context				
Practice oral speaking in English				
Practice oral speaking in Ghanaian language				
Teacher uses background knowledge to convey meaning				
Teacher uses stress, rhythm and intonation to convey meaning				
Teacher uses basic word patterns to convey meaning.				
Teacher uses repetition or re-wording to correct communicative problems				
Reading activities observed	**10**	**20**	**30**	**40**
Repetition/memorizing				
Choral reading				
Code-switching (alternating between English and Ghanaian words)				
Teacher had students read aloud				
Teacher asked the class to read silently				
Teacher asked the whole class to read aloud together				
Teacher asked pupils comprehension questions based on what they read				
Small group/pair work				
Writing exercise				
Games/songs				
Other:				

Class end time: _____ Length of the class: _____

C. Additional Observation Questions

A. Which lesson is the teacher teaching (corresponding to the teachers' guide)?

B. Which of the five key reading skills did you observe the teacher teaching:
- ❒ Phonemic awareness
- ❒ Decoding/phonics
- ❒ Reading comprehension
- ❒ Fluency – reading aloud
- ❒ Vocabulary

C. Did the teacher explicitly teach word analysis and decoding skills?
1. Teaching letter sounds
2. Reading syllables
3. Blending or segmenting words

D. What types of activities do teachers use to promote reading in the classroom? Check all that apply:
- ❒ Repetition
- ❒ Choral reading
- ❒ Code-switching
- ❒ Explicit and systematic instruction of phonics and decoding
- ❒ Guided practice of reading and comprehension
- ❒ Small-group work
- ❒ Pair work
- ❒ Assessment of learners
- ❒ Individual instruction for struggling learners

E. How much time was spent on reading? _____
a. In the local language? _____
b. In English? _____

F. Record the amount of time spent on:
- o Guided practice
- o Small group work, silent reading or child-centered activities
- o Any difficulties with classroom management?

G. Does the teacher have his/her own teachers' guide for P1?
a. ☐ Yes
b. ☐ No

H. How many learners have a textbook?
a. ☐ 1 per student
b. ☐ 1 per 2 students
c. ☐ 1 per 3 students
d. ☐ Less than one-third

e. ☐ None

I. Does the lesson include aspects of appropriate reading methodology according to the teacher's guide?
   a. ☐ Yes
   b. ☐ No

J. Does the lesson relate to the milestones?
   a. ☐ Yes
   b. ☐ No

K. What kinds of materials did the teacher use? How were they used?

Section D: Post-classroom observation interview

L. What kinds of teaching aids do you use to teach reading classes (verify)?

M. Do you have supplementary reading books for students? If yes, verify whether reading corner in classroom, library or purchased by parents.
   1. Reading corner
   2. Library
   3. Purchased by parents

N. Does it appear that the teacher keeps regular marks to track learner performance in reading/writing? (Ask to see continuous assessment guide or teachers' grade book) (KP10)
   a. ☐ Yes
   b. ☐ No

O. Are there any observed constraints affecting teaching and learning of reading? (large class size, lack of reading materials, etc.)

P. Any other comments or observations.

Appendix F:

Ghanaian Standards and Milestones of Bi-Literacy

Reading Standard One: A reader uses knowledge, skills and techniques (e.g., skimming, scanning) to read.

Milestones – Kindergarten (KG1–2) and Primary school (P1–P3)

1. Print Concepts
    - 1.1 Knows that print and written symbols convey meaning and represent spoken language.
    - 1.2 Knows that print is read from left to right and top to bottom, and recognizes familiar print in the environment (e.g. labels, traffic signs, logos, such as those for vehicles and TV stations, etc.).
    - 1.3 Knows that books have titles, authors, and often illustrators.
    - 1.4 Knows the proper way to handle books (i.e. holds the book upright; turns pages from front to back, one at a time).

2. Phonological Awareness
    - 2.1 Knows about the sounds words have, apart from their meaning – for example, knows about syllables (e.g. “kitchen” has two syllables); knows about rhymes (e.g. “bed” and “bread”); recognizes similar starting sounds (e.g. “cat” and “king”).

3. Decoding and Word Analysis
    - 3.1 Recognizes and produces letters, and differentiates them from numbers and shapes.
    - 3.2 Knows the letters of the alphabet in order.

4. Vocabulary
    - 4.1 Knows some sight words, such as own name.

5. Comprehension
    - 5.1 Uses pictures and prior knowledge to aid comprehension and predict story events and outcomes.

Appendix G:

Ghanaian Standards and Milestones of Bilingual Speaking and Listening

Standard One: Speakers and listeners use knowledge of language and the world together with communicative skills to converse in everyday settings (e.g. using language to communicate in context and dealing with communicative difficulties).

Milestones – Kindergarten (KG1–2) and early Primary school (P1)

1. Sound Production and Discrimination
    1.1 Begins to produce and discriminate distinctive sounds.
    1.2 Begins to understand speech containing pauses, errors and corrections.

2. Vocabulary
    2.1 Recognizes and uses meaningful chunks of language of different lengths (e.g. Can I have ___; I don't know)
    2.2 Recognizes and uses frequently occurring content words (e.g. house, young, sing).

3. Comprehension and Communication
    3.1 Participates in communication in simple and often ungrammatical language.
    3.2 Uses background knowledge to understand and convey meaning.
    3.3 Initiates talking and responds to talking during conversation.
    3.4 Uses private speech as a learning strategy.
    3.5 Understands and expresses a number of basic communicative meanings (e.g. greetings; expressing likes and dislikes; and asking and answering questions).
    3.6 Recognizes and uses appropriate facial expressions, gestures and body movement that convey meaning.
    3.7 Recognizes and uses stress, rhythm and intonation that convey meaning.
    3.8 Recognizes and uses basic word order patterns that convey meaning.
    3.9 Addresses communicative problems by clarifying or seeking clarification (e.g. through rewordings and repetitions)