Evaluation of the BTL and ASTEP Programs in the Northern, Eastern and Volta Regions of Ghana

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REFERENCES

ACRONYMS

ASTEP	Assistance to Teacher Education Project
BTE	Bridge to English (BTL follow-on)
BTL	BreakThrough to Literacy
CRT	Criterion Referenced Test
ESP	Education Strategic Plan
GES	Ghana Education Service (a large unit within MOEYS)
GTZ	German development assistance agency
L1, L2, L3	Mother tongue, second language, third language
MOEYS	Ministry of Education, Youth and Sports
P1, P2, P3	Grade 1, Grade 2, Grade 3
PTA	Parent Teacher Association
TLM	teaching-learning material
TTC	Teacher Training College
USAID	U.S. Agency for International Development

EXECUTIVE SUMMARY

Introduction

There is a crisis of reading achievement in public schools in Ghana. Reading achievement levels as measured by the Criterion Referenced Test (CRT, 2000) indicate that fewer than 10% of the school children at primary level six are able to read with grade level mastery. It is not surprising then that Kraft recently concluded, "*There can be no question that the fundamental problem still facing the Ghanaian schools... remains basic literacy skills in English or Ghanaian languages"* (Kraft, 2003, p. 3).

Responding to these findings, the Ministry of Education Youth and Sports/Ghana Education Service (MOEYS/GES) has emphasized literacy and numeracy in English and a Ghanaian Language as a key intervention area in its Education Strategic Plan – 2003-2015 (ESP). In support of the implementation of this plan, USAID/Ghana's new Education Strategic Objective (2004-2010) is focused on *ensuring that the majority of children who enter and complete primary schools in Ghana are able to read with grade level understanding*. As part of its strategic development process, and following a recommendation by Dr. Richard Kraft, USAID/Ghana undertook plans to pilot a reading program similar to the BreakThrough to Literacy (BTL) approach operated by the Molteno Project in South Africa.

During the 2003-2004 school year, the MOEYS/GES and USAID/Ghana contracted with the Molteno Project to undertake a BTL pilot in the Northern and Volta Regions of Ghana. At the same time, another literacy pilot program was undertaken in the Afram Plains area of Ghana. This pilot was based on materials and training developed by the Assistance to Teacher Education Project (ASTEP) with funding from the German Technical Co-operation (GTZ).

In order to examine the implementation of these two pilot programs and to determine whether these programs merited expansion, USAID/Ghana entered into an agreement with the International Reading Association for assistance in conducting an evaluation. This evaluation was intended to determine the levels of reading skills of pupils at the end of primary one in respective pilot schools, to provide recommendations designed to improve the implementation of the two programs, and to promote synergies and collaboration in the implementation of the programs as part of the literacy in English and a Ghanaian language focus area of the Education Strategic Plan.

The Problem and the Programs

Ghana is a country where very few children can read with understanding at the end of grade 6 and there are serious regional and gender-based differences. Poor, rural children and adults are much less likely to be able to read and comprehend texts than urban or more affluent individuals. In addition, the gender gap is critical, with women lagging significantly behind their male counterparts. Recent initiatives to promote free, universal education have been somewhat successful but this success has carried its own burden, since there are not enough classrooms, teachers, or instructional materials to support universal education. These problems are especially acute in the Northern and some other regions – in areas deemed "deprived." Although recent reform initiatives on the part of the MOEYS and many of its donor partners have been helpful, pupil performance in the area of literacy is still a matter of serious concern. Importantly, pupils' literacy performance is unacceptably low in both their local language(s) and in the official English language. In summarizing the need for the current literacy thrust, the Terms of Reference (USAID 2003) asserted that "Ghanaian children grow as illiterates in their own languages as well as in the English language."

While there are important differences in the two pilot programs, both introduce first-year students to literacy using their local dialect as the vehicle for instruction. Both programs include a more interactive and engaging method than has been typical of Ghanaian instruction and each takes a student-centered approach. In other African countries, BTL has been successful in teaching children to read and write using the children's own language and the local language as the basis for instruction. Students generally spend quite a lot of time creating and reading their own words and sentences. The program as piloted in

Ghana, is intended for P1 only, after which students are expected to "bridge" to English. The ASTEP program was actually conceived as a teacher-training method and, as a result, has a less structured approach. On the other hand, an array of materials is available in this program for teacher read alouds and for student reading as well. The ASTEP materials and approach are intended for use in grades P1-P3.

Summary of Findings

Pupils' literacy development was evaluated using a battery of assessments that measured a variety of reading skills. In addition, observations, questionnaires, and interviews were employed to collect information about the attitudes of teachers and administrators, about the teaching/learning environment, the effectiveness of implementation, the suitability of materials, and about prospects for sustainability.

Pupil Performance. Students' overall literacy achievement was assessed by combining scores from all the subtests into three aggregate scores that reflect different "stages" of literacy development. The first "stage" was assessed using an aggregate score comprised of three Emergent Literacy Indicators—Name Writing, Alphabet Writing, and Concepts of Print. The second "stage" is reflected in scores from two subtests measuring phonics and word reading abilities—Word Writing and Word Recognition. The third aggregate score is comprised of the Oral Reading and Comprehension subtests. As would be expected, pupils performed best on the Emergent Literacy Indicators, less well on the Word and Sound Indicators, and not very well at all on the Oral Reading and Comprehension Indicators.

Although students' did better on emergent literacy tasks than on the more sophisticated reading and comprehending, the results show that many cannot write their own name or write the alphabet or handle a book appropriately. That is a matter of extreme concern. The P1 pupils being evaluated were completing one whole year of schooling. It is hard to imagine what the children have been doing for a year if they have not at least managed to acquire this limited knowledge and skill.

In general, pupils in the BTL pilot schools performed better than students in the non-pilot schools. In addition, pupils in the Northern and Volta regions generally outperformed pupils in the implementing and non-implementing ASTEP schools in the Eastern region. Importantly, the impact of the programs was more apparent in the BTL pilot schools (versus non-pilots) than in the ASTEP implementing and non-implementing schools. The results of the Oral Reading and Comprehension Indicators are of particular importance. Only 40 of 216 pupils tested were able to manage *any* oral reading and text comprehension. This number is extremely small and virtually all of those who could read and comprehend grade-appropriate texts were in the BTL pilot schools. Roughly 38% and 53% of children in pilot schools in the Northern and Volta regions respectively were able to do at least some reading with comprehension. While the numbers are not as large as we might like, this is an encouraging start given that the pilots were not implemented until mid-year.

Finally, it is important to note that there was considerable variation within groups and regions. The between-school differences in the Afram Plains region are especially notable and not entirely explicable by self-reported implementation. Although not quite so dramatic, there are, nevertheless, similar between-school differences among the BTL schools also. What is clear is that some schools and teachers (even within the same district and general socio-economic conditions) are doing much better than others. The most noticeable differences are between pilot and non-pilot schools, but even among the pilot schools there are some that are doing quite a bit better than others.

Attitudes and Support. Generally, everyone involved in the pilot programs (district personnel, head teachers, P1 teachers, parents and community members) expressed enthusiasm for the pilot programs. They agreed that these programs were suitable and relevant, that they were far superior to the traditional approach, and that they should be expanded to include more Ghanaian languages and schools. Specific benefits noted included: improved teaching and learning of the Ghanaian language; attitudinal changes on the part of pupils and teachers in the form of punctuality, regular attendance and increased enrollment in P1; and more active participation of pupils in lessons. In addition, many noted that the programs (especially BTL) had increased parents' interest in their children's schooling. Both BTL and ASTEP

teachers indicated that as a result of the programs they enjoy teaching more, feel they are better teachers, teach differently than before, and that the children enjoy class more. Parents and community members asserted that the programs were suitable because they liked the emphasis on the local language. At the same time, they acknowledged the importance of learning to read and write English, since it is an international/national language used for examinations.

Everyone who participated in this evaluation indicated that they wanted to find ways to be supportive of the pilot programs. It is noteworthy that virtually all of the BTL pilot school communities reported providing supports that were specific to the needs of the program – sometimes in innovative ways. Many parents and PTAs purchased mats and exercise books and some PTAs even provided free lunch to the P1 teacher, worked a P1 teacher's farm for her, or raised funds for a P1 teacher as compensation for the extra work being done.

Teaching/Learning Environment. There was strong evidence of the impact of the BTL program on the classroom environment. "Talking walls" were evident in almost all classrooms. Print-rich environments, with the benches organized for group work were in sharp contrast to the BTL non-pilot classrooms and the ASTEP classrooms, which reflected a more traditional environment. In these non-pilot classrooms there were typically virtually no reading and writing materials visible on the walls or being used by children. A recitation mode of teaching prevailed in contrast to the interactive and hands-on instruction in the BTL pilots. There was, however, little difference between the implementing and non-implementing ASTEP classrooms and ASTEP classrooms looked more like the BTL non-pilot classrooms than the BTL pilot classrooms.

Effectiveness of Implementation and Suitability. The evaluation reveals important differences in the effectiveness of the implementation of the two pilot programs. The significant majority of BTL pilot and non-pilot teachers were trained, while only a third of the ASTEP teachers were. While all of the BTL pilot teachers indicated they knew a lot about the program, only 2 of the 11 ASTEP teachers reported this level of knowledge and one of those was in a non-implementing school.

The implementation of BTL appears to have been unusually effective. The combination of ongoing training and monitoring influenced teaching and learning positively in all classes/schools. The availability of many teaching-learning materials (TLMs) also enhanced the program's effectiveness. When asked specifically about the materials, the majority of BTL teachers in both regions indicated that the materials were good. They cited clarity of instruction, well-sequenced lessons, language that is appropriate for the learners, and useful teacher's guides as positive features. The one weakness cited by the majority of BTL teachers was the relevance of some of the materials to the local culture.

The implementation of ASTEP does not appear to have been as effective as that of BTL. The training of tutors in teacher training colleges (TTCs) has not trickled down to P1 classrooms in the manner intended. In addition, the training of the teachers in the Afram Plains did not have the same positive impact on instruction as did the training of BTL teachers. Possible reasons for this include the ambivalence of teachers in this region about using the local language as the medium of instruction, and/or the lack of training for head teachers and district personnel, which contributed to a lack of monitoring. In addition, the materials may not provide enough advice to permit novice teachers to implement a successful early reading program. However, the pupil books, especially at P2 and P3, are the source of exceptional reading materials in mother tongue, including as they do local folktales and longer stories.

Sustainability. There are both near term and long-term concerns associated with the issue of sustainability. Of immediate concern is the need to address three interrelated issues: (1) training – both quality and coordination; (2) integration of materials and methods; and (3) language of teaching and transition to English. Of course, the future success of BTL, or literacy instruction more broadly, is highly dependent on the quality of professional development that occurs. Molteno is experienced in training BTL teachers and supervisors and this expertise has allowed Ghana to begin an ambitious literacy initiative quite quickly. The short-term concern is that last year's P1 pupils must be provided with Stage 3 instruction during the 2004-2005 school year, in addition to the BTE training while schools must, at the same time, implement the full program to this year's P1 children.

The potential difficulty of reliance on a highly structured, pre-packaged program such as Molteno offers is that it may lead teachers to depend too heavily on the particular materials/methods of this program without fully appreciating the underlying principles and building on the approaches. If the training advances too rigidly or is conducted without accounting for local contexts, teachers will be tempted to abandon the program – or, more seriously for Ghana – be led to think that they cannot teach this way unless they have the specific and particular "BTL package." Since Ghana does not have the resources to outfit every school/classroom and then sustain the materials over time, the sustainability must not be linked to one specific set of materials.

Given the meager availability of TLMs in Ghana – in any language – any attempt to address the issues of literacy must include a pragmatic appeal to make use of everything possible. In particular, ASTEP materials, which are contemporary, attractive, and sensitive to local culture and language, need to be put to better use. Because most experts agree that one year of instruction in a local language is insufficient, the coordination of BTL and ASTEP materials is critical. A common training that incorporates and expands upon the two programs has the potential to address these concerns.

The long-term issues of sustainability include the ongoing cost and funding for education, the nature of teacher training and monitoring, and the matter of accountability and "motivation." Education is gravely under funded and under supported in Ghana at all levels. Although the cost of BTL appears large, its cost appears much greater than it is because so little is spent on basic education. It is important that MOEYS/GES officials, international "donors" and the federal government more generally attend to needs at the basic education level. Money spent on secondary education is, of course, important. However, the importance of investing in a good beginning for young students has been largely ignored and, consequently, the resources have not been allocated to ensure that students and teachers have the materials and training required to set children on a course for higher levels of achievement.

The problem of teacher retention is equally critical. The present system of postings does not appear to be sensitive enough to placing teachers who are proficient in the local dialect in the appropriate communities. Even when they have been placed appropriately, once they receive more formal education, teachers do not stay in basic education. This can and should be addressed by examining the reward system and the working conditions for these individuals. Resources must also be allocated for the close monitoring and support of teachers.

Summary of Recommendations

This evaluation produced recommendations in five areas: Planning the expansion of BTL, extending L1 instruction beyond P1, developing a plan for the coordination of BTL and ASTEP in P1-P3, developing capacity for sustaining literacy achievement, and the close monitoring and assessing of the programs.

> Expand and elaborate BTL instruction. All stakeholders, but especially key educational personnel need to expand the methodology to ensure children are working with print and writing right from the beginning, that on-going classroom assessments are used to monitor progress and differentiate instruction. Further, teachers need to create many more opportunities for pupils to practice reading and writing, possibly through the coordination of BTL and ASTEP materials.
>
> Extend L1 instruction beyond P1. One year of BTL alone will not be enough L1 instruction. A sensible pedagogical proposal is to continue L1 instruction in P2 and P3, alongside the introduction of English as an additional language through BTE.
>
> Develop a plan for coordinating BTL and ASTEP in P1-P3. We are making the strongest recommendation that GES, USAID, GTZ and their other partners allocate resources to develop a specific plan for and recommendations about the alignment of BTL and ASTEP. However, this will require a specific working group charged with aligning and integrating the BTL, BTE and ASTEP materials so that they are manageable and meaningfully coordinated.

Monitor and assess programs**.** The need for close monitoring, assessment, and adjustments of the programs is especially critical next year to ensure that P2 pupils are completing Stage 3 of BTL (which was not completed during this abbreviated pilot year). This Stage 3 is critically important to the consolidation of early literacy learning and pivotal to the program's success. In addition, district-level supervisors monitor these programs to ensure that teachers are implementing the BTL program with fidelity.

Be prepared to adapt the program over time. As the program unfolds and begins to use a TOT (training of trainers) model it will be especially important to monitor the trainers' knowledge and expertise. The Molteno training, while thoroughly preparing individuals to follow the implementation guidelines, does not necessarily provide participants with a deep understanding of the rationale behind these methods. The regimented nature of the training and the suitability of the approach in the Ghanaian context should continue to be a matter of investigation.

Develop capacity for sustaining literacy achievement. There needs to be an increased awareness of the importance of early literacy instruction. There is a need to train teachers in the teaching of reading and writing, particularly at the level of the TTCs and Universities. The GES, USAID and other interested partners, such as the GTZ should continue to collaborate with the International Reading Association to develop more knowledge about reading and writing.

Build capacity within school districts. At the local level, USAID and GES have plans to build capacity with the communities. This will be crucial. District personnel, head teachers, and P1-P3 teachers should be encouraged to invite PTAs and SMCs to participate more fully. As we have seen, some innovative and creative local solutions to problems have already been initiated. More of these local solutions are needed.

Refine and develop appropriate program evaluation tools and procedures. A protocol and prototype assessment battery should be designed for data collection at the end of P2. The evaluation plan for 2005 should continue to track pupils' literacy development in L1 but also their ability to read and write in English.

1.0 INTRODUCTION AND BACKGROUND

1.1 Purpose and "Problem Statement"

As spelled out in the Terms of Reference for this evaluation, there is a crisis of reading achievement in public schools in Ghana. Reading achievement levels as measured by the Criterion Referenced Test (CRT, 2000) indicate that fewer than 10% of the school children at primary level six are able to read with grade level mastery. Reviews of various commissions/committees and other studies (MOEYS, 2002) on the challenges of education in Ghana have underscored the weak reading and limited comprehension abilities of pupils as key to the low levels of learning achievement at the basic school level in Ghana.

The Ministry of Education Youth and Sports/Ghana Education Service (MOEYS/GES), following from the recommendations of the Education Sector Report (MOEYS, 2002) and the Report of the Presidents' Committee on the Review of Education Reforms (MOEYS, 2002), which advocated the development of an effective reading culture as key to the enhancement of learning outcomes, has emphasized literacy and numeracy in English and a Ghanaian Language as a key intervention area in its Education Sector Plan (2003-2015). In support of the implementation of the Education Strategic Plan (ESP), USAID/Ghana's new Education Strategic Objective (2004-2010) is focused on *ensuring that the majority of children who enter and complete primary schools in Ghana are able to read with grade level understanding*. As part of its strategy development process, USAID/Ghana secured the services of Dr. Richard Kraft to undertake a review of the state of reading and reading education in Ghana. Dr. Kraft's final report recommended that USAID/Ghana consider implementing a reading program similar to the BreakThrough to Literacy (BTL) approach operated by the Molteno Project in South Africa.

After investigating the BTL program, the MOEYS/GES and USAID/Ghana contracted with the Molteno Project to undertake a BTL pilot in the Northern and Volta Regions of Ghana during the 2003-04 school year. At the same time, another literacy pilot program was undertaken in the Afram Plains of the Eastern Region of Ghana. This pilot was based on materials and training developed by the Assistance to Teacher Education Project (ASTEP) with funding from the German Technical Co-operation (GTZ). Toward the end of this pilot year, USAID/Ghana entered into an agreement with the International Reading Association for assistance in conducting an evaluation that would review the implementation of the two pilot programs and determine the levels of reading skills of pupils at the end of primary one in respective pilot schools. The evaluation was also to provide recommendations designed to improve the implementation of the two programs and promote synergies and collaboration in the implementation of the two programs as part of the literacy in English and a Ghanaian language focus area of the Education Sector Plan.

1.2 Background and Context

Because there have been several excellent and comprehensive studies of literacy instruction in Ghana, we will not attempt a major review. Instead, we refer the interested reader to the two commissioned reports by Richard J. Kraft (1994, 2003), to the Education Sector Report (MOEYS, 2002) and to the USAID/Ghana Basic Education Strategic Objective (2003). These documents paint a picture of a country where very few children can read with understanding at the end of grade 6 and the illiteracy rate across the country is high, with serious regional and gender-based differences. Poor, rural children and adults are much less likely to be able to read and comprehend texts than urban or more affluent individuals. In addition, the gender gap is critical, with women lagging significantly behind their male counterparts.

Recent initiatives to promote free, universal education have been somewhat successful but this success has carried its own burden, since there are not enough classrooms, teachers, or instructional materials to support universal education. These problems are especially acute in the Northern and some other regions – in areas deemed "deprived." The disparities in educational opportunities have been mentioned in several documents. *A Tale of Two Ghanas*, (Kraft, 1995) for instance, reveals great differences between schools in district capitals, urban centres and rural schools, not just in terms of quality but also in terms of community involvement and infrastructure.
Although recent reform initiatives on the part of the MOEYS and many of its donor partners have been helpful, pupil performance in the area of literacy is still a matter of serious concern. Importantly, pupils'

literacy performance is unacceptably low in both their local language(s) and in the official English language. In summarizing the need for the current literacy thrust, the Terms of Reference (USAID 2003) asserted that "Ghanaian children grow as illiterates in their own languages as well as in the English language." This claim, while strong, seems warranted given that only 10% of primary level children could read with grade level proficiency. It is not surprising then that Kraft recently concluded, "*There can be no question that the fundamental problem still facing the Ghanaian schools, eight years after my previous visit, remains basic literacy skills in English or Ghanaian languages"* (Kraft, 2003, p. 3).

The broader cultural context must take into account also that there is a a very thin layer of written language use in many remote areas of Ghana. Few family members (often none) have attended school or done so for long enough to become proficient in reading and writing. School attendance is often delayed or disrupted. Daily life for many communities in Ghana, particularly rural ones such as many parts of the North, involves operating mainly through oral practices. Moreover, the uses family members have for literacy as they go about their regular business are not necessarily ones that children are exposed to frequently, or can see as having meaning for their lives. As well, the print environment in villages, towns and the city is almost entirely in English and there are few written-language resources, even for adults. Few, if any, local or regional newspapers exist; those that do are mainly in English. Books in Ghanaian language are scarce. Books in English are equally rare in many parts of the country. Hence, school exposure is typically the first – and often the only – experience people have with written language literacy.

1.3 Literacy in a Multilingual Context

The Ghanaian society is multilingual both at a societal level, in the sense that it is a country of many languages and in the individual sense, that due to mobility and close contact between language groups most Ghanaians speak and understand more than one Ghanaian language (Blumor, 2003, p. 2). Almost universally, the authors of various documents and reports have noted the significant difficulties posed by both Ghana's diverse linguistic environment and by the confusions surrounding the national policy regarding the language for initial instruction in primary grades. Each echoes Kraft's dramatic 1994 conclusion:

> *Ghanaian children succeed at developing the informal, basic oral communication skills in their native langauge and often in two or more Ghanaian languages. They obviously suffer from no lack of linguistic ability. Research and observation point to the fact, however, that under the current Ghanaian language policy, they do not reach the cognitive threshold necessary for successful transfer to English by P4* (Kraft, 1994, p. 2).

In multilingual contexts debate has raged about what language should be used for initial literacy instruction. The complex interrelationship of historical, political and psychological factors that arose from colonisation in Africa continues to hinder sound pedagogical decisions about what is best for children's learning. As described below, a large body of research evidence for language-related considerations regarding literacy learning suggests that learning to read and write in one's first language provides a strong foundation for reading and writing in L2.

It is often assumed that children arrive at school at six or seven years of age, having completed learning their first language (L1). However, according to current research, 12 years are needed to learn a language to a sufficiently sophisticated level to be adept in complex school settings (Collier, 1989, cited in Dutcher, 1998; Ovando, 1993). Research also suggests that learning an L2 or L3 at a younger age does not necessarily result in more successful or efficient learning than when it happens at an older age. It appears that L2/ L3 language learning follows a similar developmental sequence and process as that which occurs with younger and older children and that many factors contribute to language learning. The one exception to this seems to be that pronunciation and accent are learned more easily and authentically at a younger age (McLaughlin, 1992, cited in Dutcher, 1998).
Neither is the speed of learning an additional language necessarily related to the amount of exposure to that language, *"especially when that exposure to the L2 comes at the expense of the development of the first language"* (italics added) (Dutcher, 1998, p. 3). When the L2 or L3 is a 'high status' language, and

replaces the L1, the 'lower status' local language, as the medium of instruction, this early use of the L2 or L3 can lead to detrimental educational and linguistic effects (Singleton, 1989 cited in Baker 1996, p. 84). There is also reason to believe that the too-early introduction of L2 or L3 may truncate the child's overall cognitive development. As Cummins' (1977) has explained, "there may be a threshold level of linguistic competence which a bilingual child must attain both in order to avoid cognitive deficits and allow the potentially beneficial aspects of becoming bilingual to influence his cognitive growth" (p. 10, cited in Baker, 1996, p. 130).

Following this 'threshold theory' about the relationship between cognition and degree of bilingualism, Cummins (1978) proposes what is known as the 'Developmental Interdependence Hypothesis' (cited in Baker 1996, p. 151). Of significance is that language learners develop a 'common underlying proficiency' for two or more languages, and transference takes place from the academic skills learned in one language to another. This is consistent with evidence that literacy skills acquired in L1 transfer across languages, particularly when the orthographies are the same (See Baker 1996, pp. 151 - 161 for details; Hudelson, 1987). Ovando (1993) has made roughly the same argument; "Limited English Proficient pupils who develop a strong sociocultural, linguistic, and cognitive base in their primary language (L1) tend to transfer those attitudes and skills to the other language and culture (L2)" (p. 225).

Given this evidence, it should be no surprise that there is widespread in-principle agreement about the pedagogical importance of using the mother tongue (L1) in the early primary years as the medium of instruction. Reasons given for early L2 instruction in school need to be ones based on factors other than L2 research, such as 'providing general intellectual stimulation,' or the benefits of learning a country's lingua franca (Baker, 1996). Baker concludes that: "there are no critical periods in a child's development in childhood or adolescence when a second language should or should not be introduced in the school." Furthermore, "second language instruction in the elementary school rests on the suitable provision of language teachers, suitable materials and resources, favourable attitudes of the teachers and parents, and the need to make the learning experience enjoyable for the children" (Baker, 1996, p.85).

A number of mother tongue experimental studies have been carried out in several African countries (Bamgbose, 2000, Akinnaso, 1993). Most have concentrated on teaching through the mother tongue only for the first three years of primary school. An important exception is the six-year Ife project in Nigeria (Akinnaso, 1993). Although most of these experimental situations have been subtractive[1] in nature, they do provide evidence that the learning of other languages is not hindered by the use of mother tongue (Wolff, 2000) and further, that there are benefits for literacy and other learning.

1.4 The Nature of Literacy

Literacy development, both for adults and children, has been a major concern on the African continent for a long time. Until recently one main theoretical approach informed and underpinned (and continues to do so) most literacy teaching programs, both for adults and for children: This approach holds that literacy is made up of sets of separate skills, unconnected to any particular context. Importantly, it was thought both that the skills were sequential, requiring explicit instruction, and that they were "prerequisite" to other abilities. Literacy was viewed as "instrumental" -- to "get" or "be given" literacy would change your life. In recent years, literacy has come to be viewed as social and cultural in nature. It forms part of people's daily life practices (Street 1995, Brice-Heath 1983, Barton 1994). Skills are learned as you use them to do something personally meaningful. The focus is on what people do with literacy.

This, together with the growing dissemination of insights and understandings about early childhood literacy development in African multilingual contexts, has drawn attention to the dire and complex situation with regards to literacy teaching and learning in the early years of primary school. Recognition has been given to the need for holistic approaches which take into account the interdependence of

[1] This means that the mother tongue is replaced, rather than added to after three or four years, by another language.

factors like language medium, meaning-based pedagogy and the rooting of reading habits in communities through among other things, the creation of mother tongue children's literature on the continent.

1.4.1 Skilled Reading and Writing

Earlier theories had tended to define reading as accurate word recognition, assuming that comprehension would follow as an automatic by-product of this accurate word recognition. However, both the demands placed on a literate citizenry and our understanding of the nature of literacy has changed in the past twenty years. Modern society requires more, not less, reading and writing skill. Individuals must think with print – solving problems and thinking critically. As well, research (see Lipson & Wixson, 2003 for a review of this work) suggests that even when pupils acquire accurate and automatic word recognition abilities there is no assurance that they will become successful learners. The Rand Corporation recently published a synthesis of comprehension research (largely conducted and published in the U.S.) and drew the following provocative conclusions:

- The demand for literacy skills is high and getting higher
- The level of reading skills remains stagnant
- Reading comprehension instruction is often minimal or ineffective
- The achievement gap between children of different demographic groups persists
- Many pupils who read on grade level at grade 3 will **not** become proficient in comprehension in later grades (Rand, 2002).

What this report (and others) suggests is that teachers need to begin *teaching* pupils *to comprehend* in the earliest grades and this instruction must continue at least through grade 6. This instruction would require that students acquire automatic word recognition skills, that they would be able to read lengthy texts with ease and fluency, and they would acquire more and more varied vocabulary, and that they would be able to comprehend different types of texts for different purposes. This requires sophisticated use of comprehension strategies, considerable domain knowledge, and an understanding of how different types of texts are organized.

However, many teachers are not well prepared to teach children to read with comprehension. Instead, they have continued to teach only the word-level aspects of reading. In Ghana, teachers often move from phonics instruction to a consideration of the grammar, syntax and vocabulary of language – especially English. While these are important, they are not nearly enough to prepare children for demanding literacy tasks, nor for the expectations of junior and senior secondary school. An instructional program and approach that enhances children's linguistic and cognitive skills is desperately important if Ghanaian children are to realize their literacy potential.

1.4.2 The Developmental Nature of Reading/Writing

In the same way that researchers have come to see that reading and writing are more complex than originally thought, they have come to understand that the acquisition of literacy is a developmental process requiring many years. Most lay people think that reading is a "can/cannot do" type of ability; either children can, or they cannot, read. For young children, however, the story isn't quite so straightforward.

Young children begin the process of becoming literate long before they can read or write in a conventional way. Over the course of the past 30 years, researchers have been able to document this "emergent literacy" (Neuman & Dickinson, 2001; Teale & Sulzby, 1986). To an astonishing degree, young children in literate societies follow the same path in acquiring the foundational skills for reading and writing (especially if their language is an alphabetic one). This reinforces the conclusion that these abilities are developmental in nature and not just an idiosyncrasy of a particular culture or approach to teaching/learning. Indeed, most of the early emergent abilities start long before the onset of formal schooling and, yet, we can see children solving the problem of how to read and write in similar ways. Much has been written about emergent literacy and the developmental nature of reading and writing and it is well beyond the scope of this report to discuss this in depth. Among the most important conclusions that can be drawn from close observation of young children and from the body of research that has been

accumulating about this area is that young children's first attempts at reading and writing are often "approximations" of the ultimate goal (Ehri, 1987; 1995). They need to "make mistakes" in order to figure out how print works. These "mistakes" are not errors; rather they reveal much about what children have learned. Thus, when assessing two children, by asking them to write certain words, we might find that neither can write the words accurately. If we only count up the errors, the two pupils will appear identical in their abilities. However, a close examination of the pupils' "approximations" might reveal something like the following:

Words to Write	Pupil A	Pupil B
dog	DG	3ii
apple	APL	px
big	BG	gggtoi
mat	MT	aiia

It should be evident that these two pupils are not equally skilful. Pupil A, while not able to write (and likely read) the words, has clearly begun to analyze the flow of speech sounds and can represent some of the phonemes in the words using appropriate letters. Pupil B, on the other hand, knows only that letters are what are used to represent speech. She does not appear to be able to isolate phonemes, nor does she seem to have a sense that the number of phonemes influences the letter string to be used. She has a much greater distance to go before she will be able to read and write with comprehension than does Pupil A. This pattern is common among native English speakers. The vowels of English are particularly challenging and are often late to appear in pupils' developmental or, "invented" spelling. Children who are learning to read/write in other languages may exhibit somewhat different patterns of emergent spelling that reflect the salient features of those languages. Nevertheless, they demonstrate this same attention to the important features of their language and patterns of performance emerge across children (see Ferreiro & Teberosky, 1979/1982).

In print-rich cultures, we can generally expect the following progression of development (influenced, of course, by both the particular language to be learned and the instruction offered):

- Children experiment by writing random letters and even scribbles
- Children simultaneously begin to experiment with name-writing and with isolating individual phonemes (what does 'Seth' begin with?)
- Children "pretend read" and/or memorize familiar texts
- Children listen avidly to interesting stories – even quite complex ones – and discuss the meaning of the text. Over time, they should be able to compare/contrast stories they have heard
- Children learn to write a few common or important words "by sight" – they remember the letters and the sequence of the letter string
- Children begin to attend more closely to the specific phonemes in words and to try to match the phonemes to the letters that represent those sounds. This usually happens in writing first.
- With encouragement, children gain flexibility in manipulating sounds – for example, substituting initial consonants to make rhyming words -- and, just a bit later, in matching sounds to symbols in reading
- Children read increasingly difficult texts with comprehension using a combination of story context, prior knowledge, sight word recognition and phonic decoding.
- Children can read unfamiliar texts with accuracy and comprehension

Obviously, individual children will be engaged in activities that overlap these "phases," showing some behaviours simultaneously. A good early literacy program should attend to these various abilities and assess pupils' acquisition of them.

In print-scarce settings, such as those that exist in rural parts of Ghana, we should expect that children take longer to develop their competencies in reading and writing (Bloch and Alexander 2003). For instance, with spelling we know, that the more we read, the better our chances are of becoming good spellers (Krashen 1993). This needs to be taken into account when we decide on attainment levels and

assessment criteria for children who might experience only a tiny fraction of the reading/writing related activities if compared with children in 'literate' societies. Importantly, many opportunities for students to experiment with print, to hear stories read, and to themselves read familiar material are essential to the powerful development of literate abilities.

2.0 DESCRIPTION OF THE BTL/ASTEP PROGRAMS AND PILOTS

Although BTL and ASTEP arrived in schools by different routes and have, at their base, a different focus, each is intended to impact literacy achievement among Ghana's youngsters. Importantly, each is intended to provide a coherent programmatic vehicle for teaching initial literacy in the local language. The two projects recognise the central role of a language the child can already speak as a vehicle for beginning literacy. Both projects provide structures and support to teaching in grades P1 and P2. Materials for the BTL pilot have been designed for the use of mother tongue in P1 with a transition program (BTE) planned for grade P2. All ASTEP materials are earmarked for the lower primary, with an appropriate developmental progression from P1 to P3. These programs have been piloted during the period from January –August, 2004.

2. 1 Principles and Methods of the Programs

2.1.1 BTL

BTL is a highly-structured method and set of materials that unfolds in three "stages." It is based on a language experience approach, using students' local language for communication and for literacy development. The focus of the first stage is the development and expansion of students' home language. Relying on posters, discussion, and some read-aloud material, the teacher and the children create an environment for literacy. In the second stage, more explicit connections are made between students' oral language and its written forms. Using sentence strips, materials for making (and "breaking") words, and charts a print-rich environment is created. The so-called "talking walls" provide reminders of past lessons in sound-symbol correspondence and the word walls are available for students who need reminders of how words look. Using an integrated language arts approach, students speak, listen, read, and write. This is especially evident in stage 3 – with its focus on writing and reading longer texts.

Ideally, students each have several exercise books which are used for different purposes and, as well, have word and sentence-making kits that contain letters and words so that students can copy the teacher's words/sentences in the early going and, in later stages, can make their own words and sentences. In addition, there are 10 little readers in local dialect, which increase in difficulty. These materials, while a potentially rich source of reading material are not well-described in the teachers' manuals and were rarely in use in the classrooms we observed.

It was apparent that some teachers had read stories from these readers to the children, but less clear that the children themselves were reading them on a regular basis. It is possible that these would be used more extensively if the teachers/students had completed the entire P1 program (all three stages). These books should play a central role in the BTL classrooms and teachers should have a much better sense of the appropriate "benchmark" for P1 performance[2] than they currently have.

In addition to the reading materials and tasks, BTL has highly specified methods for organizing and teaching the class. Given the extremely large class sizes in Ghana, this is an important consideration. Teachers are taught to use a combination of classroom organizational patterns: whole class, ability groups, mixed-ability groups, and one-to-one teaching. Both the "group meeting" format (where children

[2] When asked, the BTL trainer from Molteno seemed a bit uncertain about what level of book students should be able to read (independently) by the end of P1. Since level 10 seems more appropriate for late P2 or even P3 readers, it will be important to gain much more clarity about the timing and method for using these books. On the other hand, some of the more challenging books would make excellent "teacher read aloud" books.

sit on mats at the foot of the teacher) and the cooperative grouping arrangement (where children's benches were grouped to face each other so they could help each other) was unique to BTL classrooms and seems to have helped teachers to move away from the oral recitation methods that have traditionally been used.

BTL has organized its teacher training around the implementation of the program materials and methods, running regular workshops for teachers, head teachers and directors. The overview and training materials (Molteno, 2004) suggests doing an "assessment grid as early as possible to manage and monitor your continuous assessment program…with Stage 3 being designed for you to assess learners as they break through to literacy" (p. 80). They also provide an elaborate (pp. 80-127) set of "Assessment Standards" linked to the Learner Book pages relevant for that standard, a set of "lesson ideas and teaching tips" and a set of "assessment suggestions" – again, for each standard. Despite this excellent guide for matching informal classroom assessment to appropriate grade-level outcomes, we saw almost no evidence that teachers had internalized a "continuous assessment" model – nor, indeed, much physical evidence of individual student assessment at all. The materials/program make reference to "inbuilt-monitoring" systems but, again, we saw none.

Importantly, it is not clear that teachers after this first, partial, year of instruction have a real sense of how to individualize their instruction. They have begun to create the classroom structures that would permit this (e.g. grouping) but have not used them to really differentiate instruction. This is, of course, a sophistsicated instructional skill and we can only hope that it will be developed over time. However, the training that we observed would not produce a responsive-teaching method. Instead, it seemed quite rigid and designed to be sure that teachers do not "stray" from the prescribed approach. While this is understandable in the early going of any new methodology, teachers must become better assessors and more able to use assessment data to inform their instruction if Ghanaian children are going to thrive.

2.1.2 ASTEP

Whereas the focus of BTL is largely on the teaching materials and methods of the program, ASTEP has sought to infuence learning by improving initial teacher education. In collaboration with TED, they provided pre-service training, by giving institutional heads initial orientation to ASTEP , ran workshops for tutors of specific core subjects, and monitored teacher trainees on teaching practice. Up to the year 2001 ASTEP concentrated on the improvement of teachers' performance for the first three primary levels (P1-P3) in the areas of reading, writing, mathematics, and science in the local language. "This concentration in the first phase of ASTEP allows newly trained teachers to achieve basic literacy and numeracy for their pupils and to introduce them to basic understanding of natural phenomena according to the national curriculum and national language policy" (GTZ website).

In addition to the basic training, ASTEP designed, developed, and produced learner materials for the core subjects of mathematics, science, and reading in five Ghanaian languages (a sixth is in production) for all schools in Ghana. It has prepared extensive reading materials for building reading habits, all in Ghanaian languages. Unfortunately, as noted by a GTZ program manager, the dissemination of the materials "got out ahead of" the teaching training. This is, indeed, unfortunate because our own review and a more extensive one conducted by Blumor (2003) attests to the high quality of these student materials. In particular, these materials provide perhaps the only early reading materials that is culturally sensitive in its depiction of Ghanaian family and community life.

It is important to note that the ASTEP materials are designed for use right through the first three grades of schooling (P1-P3). Designed to reflect the official policy on the language of instruction, the program has suffered due to subsequent policy confusions at both the national and local levels. However, it would seem that Ghana is fortunate, indeed, to have high-quality instructional materials available through the primary grades. Not only are the materials of good quality and available (shortly) in six of the primary languages of the country, they have actually been disseminated. For example, every school in the north had the appropriate Gonja-language materials – although they were generally unused and often unopened. Somehwhat later we address the ways in which these materials might be used to advantage in the current environment.

In addition to the student materials, a relatively slim set of teacher guidelines is provided, designed to help teachers implement instruction in mother tongue. If these materials were explicated within the context of a teacher education program, it is likely that they could be successful. However, without extensive training, they do not appear to offer enough specificity to help inexperienced or poorly trained teachers transform their teaching. There is virtually no support for assessment nor any guidelines for determining appropriate outcomes.

2.1.3 BTL-ASTEP Comparison

To summarize, the programs each have much to offer. Both have an underlying philosophical approach that offers a generally student-centered method and both advocate using mother-tongue instruction to teach initial literacy. In addition, the materials are reasonably attractive, showing children in various African contexts. It is the case that the BTL materials reflect a South African culture and sense of community that is somewhat alien to West Africa (something that was the source of criticism in focus group meetings). Nevertheless, the fact that these programs were designed for use in Ghanaian-language communities and provide materials where there would otherwise be none is no small accomplishment.

There are, however, differences between the programs as well. BTL has a very highly-structured methodology and ensures that it is followed by providing a systematic network of monitoring and evaluation. They have employed this methodology widely in Africa, arguing that the strong structure and guidelines provide important support for under-trained teachers. ASTEP has a methodology package, provides a framework for monitoring, but not in the specific structures in BTL nor with such a comprehensive system of instruction. By taking a teacher-preparation approach, it appears that they hoped to introduce research findings and "best practices" to teachers during their initial training.

The two programs also differ in the types of demands they place on the existing system. BTL has made district-level involvement a requirement (circuit supervisors must monitor BTL teachers 3 times per year). The implementation of the BTL pilot has involved the use of only trained teachers in the delivering of instruction in pilot schools. Since many schools in the "deprived districts" of the North do not have many trained teachers, this has sometimes meant that a trained treacher is moved from another grade (e.g. P2 or P3) to P1 in order to receive the BTL training. Of course this is good news for beginning readers and writers but it does little to address the long-term problems of quality instruction in Ghanaian schools.

Similarly, BTL has encouraged community involvement and pilot communities are made aware that the mats and teaching/learning materials should be provided by the community -- even before the school materials arrive. ASTEP has not made that point yet and a much less assertive training and dissemination program means that this element is unlikely to gain footing in ASTEP communities unless plans to do so are made as part of an integrated program of action. GES through its USAID partners has been able to provide a comprehensive plan for school improvement. The integration of elementars from BTL and ASTEP would clearly require the supprot of this type of comprehensive effort.

Finally, the professional development and training for these two programs has also been quite different. BTL has provided comprehensive and coherent training to teachers , head teachers, and circuit supervisors, while ASTEP has provided just one training in the Afram Plains, which not all key personnel were able to attend. Since they had not ever intended to implement ASTEP using an in-service model, their provisions for school-based implementation are understandably under-developed. Given the complexity of school reform (see Lipson, 2004; Mosenthal et al., 2004; Taylor et al., 2002), it is unlikely that <u>any one</u> program will be enough to transform literacy performance in the country, so a comprehensive approach, including long-term professional development and community involvement will be absolutely critical.

2.2 The Pilot Projects

Both programs have focused their training and implementation so as to "to direct support to particularly poor districts and target innovative approaches at extremely deprived communities." ASTEP has directed its projects to extremely underserved areas in the country. The Afram Plains, though quite close to the national capical is cut off by the tributataries of the Afram river and the Khawu hills. The inhabitants are mainly farmers who settle on the fertile plains, but hemmed in by hills and water. Then the fishermen along the river just like their farmer folks are also cut off from the rest of the country. BTL is piloting its model also in underserved areas in the Northern region where educational standards are very low. The West Gonja and Bole districts, just like the Afram plains record the largest nunbers of pupil teachers. However, the Ho and South Tongu districts of the Volta region, where BTL has pilot schools cannot generally be considered underserved. Although these programs have arrived in Ghanaian schools by different routes, each has been piloted through in-service professional development and materials distribution during the 2003-2004 school year. In each pilot school, all pupils in primary one are involved in the program. The P1 teachers and head teachers of each pilot school are involved in the program (received training in it).

2.2.1 BTL

The Molteno BTL pilots began in January 2004, with USAID/GES support which will continue funding for 6 years. There are 50 schools in the BTL pilot program – 25 each in the Volta and Northern regions. Two districts in each region are participating in the pilot (Ho and South Tongu districts in the Volta region and Bole and West Gonja districts in the Northern region). There are 13 of the pilot schools in Ho and 12 in South Tongu. For Bole and West Gonja, the numbers of pilot schools are 12 and 13 respectively.

Because the schools under the BTL pilot had begun piloting the program in January (rather than September at the beginning of the school year), they had completed only the first two stages of the three stages of the BTL program for grade 1 by the end of the year (when we evaluated the progress of the implementation). Indeed, teachers and head teachers had not yet received training in Stage 3 at the time of our visit. We were, however, able to observe portions of this Stage 3 training while we were visiting.

2.2.2 ASTEP

The ASTEP program, began developing materials in 1997 and TTC tutors were trained in ASTEP in 2000-2002. The program was scheduled to end in 2005. "During the time of ASTEP implementation (between 1997 and 2003), the teacher education program changed its scope as well as its content in ways that created considerable uncertainty in TTCs and a subsequent impact on expected outcomes of ASTEP. At the beginning of ASTEP in 1997, 25 TTCs were selected to provide for a teacher education program on primary education" (Blumor, 2003, p. 4). Subsequently, changes in the national language policy as well as difficulties in implementation (e.g. the same tutors were not sent over time so expertise was not well-established in the TTCs) slowed the progress of the ASTEP program.

It appears that GTZ realized that the TTC training (preservice level) was insufficient to guarantee use of the ASTEP materials. Hence, the decision to mount training at the in-service level in order to make the best use of the instructional materials. GTZ was, and remains, most interested in seeing that these materials are put to good use

Lower primary teachers in the Afram Plains were trained in late 2003. Although the ASTEP materials are in schools in other regions, they are not always used. For the ASTEP pilot program there are a total of 70 schools, all located in the Afram Plains district of the Eastern region of Ghana. Funded by UNICEF, training was conducted by external consultants.

3.0 DESCRIPTION AND METHOD OF EVALUATION PROJECT

This evaluation was an investigation of the BTL and ASTEP programs as methods of achieving basic literacy among primary one pupils in Ghana. The specific terms of reference are provided below and serve as the basis for the organization of the findings described in this report.

3.1 Terms of Reference

The specific charge presented to this group was to review the implementation of the BTL pilot program in the Northern and Volta regions and the ASTEP pilot program in the Afram Plains of the Eastern region. For reference purposes, this review was to compare the levels of pupil performance in non-pilot or non-implementing schools. The evaluation was organized around the following areas of investigation as specified in the terms of reference.

- Assess the *attitudes* of head teachers, teachers, and district personnel towards the BTL and ASTEP programs.
- Evaluate the factors, such as monitoring and other support services from the District Education Office and community support, identifying the crucial programmatic factor(s) that have impacted on pupil achievement levels in the implementation of the two pilot programs.
- Comment on classroom environment and general teacher self-preparation prior to the delivery of instruction in both programs.
- Measure the levels of reading and reading comprehension skills of primary one pupils in respective BTL and ASTEP sampled schools as compared to a sample of pupils from non-program schools at the same grade level. Establish a baseline of reading and reading skills achievement levels at the end of primary one.
- Assess the effectiveness of the implementation approaches adopted under each of the two programs and comment on the suitability of materials and methods for achieving basic literacy under the two pilot programs.
- Comment on likely sustainability of the impact of the BTL/ASTEP programs at higher levels of primary school
- Provide recommendations regarding how the implementation of the two pilot programs could be improved

3.2 Sample

A total of 120 schools (50 in BTL and 70 in ASTEP) are involved in the pilot programs. In each pilot school, all pupils in primary one are involved in the program. The primary one teachers and head teachers of each pilot school are involved in the program and were (theoretically) trained in it.

Approximately 10% of the BTL schools in the Volta and Northern regions and of the ASTEP schools in the Eastern region were randomly selected for evaluation. For purposes of comparison, the sample also included non-pilot schools from the same regions as the BTL pilot schools (Northern and Volta). Although all of the schools in the Eastern region had received ASTEP materials and training, previous evaluations had indicated that some schools were implementing ASTEP and others were not (Blumor, 2003). Non-implementing ASTEP schools were identified through a variety of means including teacher observation and information gathered through interviews and questionnaires from district office personnel, head teachers, and teachers. The final sample consisted of 4 pilot and 2 non-pilot BTL schools in the Volta region, 4 pilot and 2 non-pilot BTL schools in the northern region, and 7 implementing and 4 non-implementing ASTEP schools in the Eastern region. Together there were 24 classrooms in 23 schools. There were fifteen pilot/implementing schools and 8 non-pilot or non-implementing schools.

Within each of the sampled schools, a minimum of 15%, but no fewer than 6, of the children in each P1 class were randomly selected for testing. The numbers of pupils tested in each class ranged from 6-14 representing from 15-33% of the pupils in a given class. Class size ranged from 18-68 with an average of 40. In addition, there was regional variation in class size with the Northern region averaging 46, the Volta 38 and the Eastern region 37 pupils per class. The total number of pupils was 216 (113 males and 103 females), with an average age of 8.3.

Table 1 summarizes the information for numbers of schools and pupils by region, pilot status, as well as the gender and average age of the pupils. There are also clear regional differences as well, with the average age much higher in the Northern and Eastern regions than in the Volta (see Table 1).

TABLE 1
NUMBERS, GENDER AND AGE OF PUPILS BY REGION, SCHOOL, PILOT AND NON-PILOT[3]

	NORTHERN REGION				VOLTA REGION				EASTERN REGION			
	Schools	**M**	**F**	**Av. Age**	**Schools**	**M**	**F**	**Av. Age**	**Schools**	**M**	**F**	**Av. Age**
PILOT	NA	4	5	9.7	VA	2	4	6.3	EA	7	5	9.3
	NB	3	7	9.6	VB	4	5	7.6	EB	4	7	8.5
	NCA	4	6	10.6	VC	3	3	6.8	EC	4	3	9.4
	NCB	4	6	10.6	VD	5	4	6.4	ED	3	3	8.2
	ND	5	9	9.7					EE	5	7	9.8
									EF	4	3	8.7
									EG	5	7	9.6
NON-PILOT	**Schools**	**M**	**F**	**Av. Age**	**Schools**	**M**	**F**	**Av. Age**	**Schools**	**M**	**F**	**Av. Age**
	NYY	4	3	10	VYY	5	3	6.3	EWW	5	5	8.6
	NZZ	2	5	8	VZZ	4	4	7.1	EXX	5	3	8.3
									EYY	5	5	8.6
									EZZ	7	1	8.9
TOTAL	**6**	**26**	**41**	**9.7**	**6**	**23**	**23**	**6.7**	**11**	**54**	**49**	**8.9**

[3] The first letter of each school name indicates the region (e.g. N=Northern Region, V = Volta Region, E = Eastern Region or Afram Plains). The additional letters refer to specific schools studied, with letters A, B, C, etc. indicating pilot schools and double letters designating non-pilot schools.

This finding reflects the relatively greater poverty and isolation in these areas. ASTEP (in the Eastern region) has directed its projects to extremely underserved areas in the country. The Afram Plains, though quite close to the national capital is cut off by the tributaries of the Afram river and the Khawu hills (caused by flooding to create the nation's largest hydro-electric project). The inhabitants are mainly farmers who settled on the fertile plains, but were hemmed in by hills and water. Then the fishermen along the river just like their farmer folks are also cut off from the rest of the country. BTL was also piloted in an underserved area of the Northern region where free universal education has only recently made an impact. In these two regions, pupils may never have had access to schooling before and/or they may leave for periods of time to help family members with farming or fishing tasks. Thus, in some P1 classes 15-year-old adolescents sit alongside 6-year-old children. However, the Ho and South Tongu districts of the Volta region, where BTL has pilot schools cannot, generally, be considered underserved and pupils clearly enter school at a more traditional age.

3.3 Data Collection

Evaluation teams were sent to each of the regions to conduct the assessments. At a minimum, each evaluation team included one of the external evaluators, a language specialist, and a USAID representative. Additional assistance was often obtained at the local level from the district office.

The pupils selected for testing in each classroom were treated as a group for some of the pupil assessments and were evaluated one at a time for others. All assessments were administered by specialists in the local language—Gonja or Ewe. In addition to gathering pupil data, the P1 teachers, head teachers, and district director filled out questionnaires, and the team met with members of the community to discuss their attitudes towards the pilot programs. The pupil assessments and community discussions were conducted in the regional language—either Ewe or Gonja, and the questionnaires were written and completed in English.

Test construction guidelines were developed by the consultants. Language specialists in Ewe and Gonja were commissioned to create the assessments. This involved making decisions about salient letter and word features in each language and creating administration guidelines in these languages that included directions to the children.

3.4 Instruments

The instruments used to evaluate the programs consisted of a set of pupil assessments, a tool for teacher observation, and questionnaires for district personnel, head teachers, and P1 teachers. In addition, a set of questions was prepared for use in meetings with parents and community leaders. The following is a description of the instruments, as well as how they were administered and scored.

3.4.1 Pupil Assessments

Since literacy develops over time, a decision was made to assess not only the major outcome of P1 instruction – that is, reading connected text with comprehension – but also, the several critical underlying skills and strategies that mark the emergence of conventional literacy. Consequently, an assessment battery was designed. The components of this battery are listed below and subsequently described.

- Name Writing
- Alphabet Writing
- Phonemic Awareness
- Word Writing
- Word Recognition and Vocabulary
- Listening Comprehension
- Oral Reading Accuracy
- Reading Comprehension

Name Writing. The name writing subtest simply asked the children to write their names in a designated place on their response forms. Pupil responses were coded as 0 for no recognizable sound from their name, 1 for several recognizable sounds from either their first or last name, and 2 for an accurate spelling of either their first or last name. The range of possible scores was 0-2 for this subtest.

Alphabet Writing. The purpose of this subtest was to evaluate pupils' ability to write the letters of the alphabet in proper sequence. Pupils were asked to write the Ewe or Gonja alphabet in order. The response form had individual boxes for each letter. Because the Ewe test form asked pupils to write the first 13 letters of the alphabet, and the Gonja test form asked pupils to write the first 18 letters, only the first 13 letters were scored. This subtest was coded in three ways. First, there was a code indicating whether the child had written in the Ghanaian language or in English. Second, there was a score for the total number of letters (0-13) a child formed properly in the language they had chosen to write in. Third, there was a code for the presence or absence of sequence, which gave pupils credit for sequence if they wrote the first 6 letters of the alphabet in the correct order.

Word Writing. The purpose of this subtest was to evaluate pupils' ability to reproduce words and/or the sounds they hear in words. Words were selected in Gonja and Ewe to be read aloud one at a time and the children were asked to write the words in a designated place on the response form. A total of 12 words were selected with the first 6 (Part A) intended to represent highly familiar words and the second 6 (Part B) intended to represent common letter/sound patterns within the language being tested. The administrator's guide in Gonja specified the target words, but this was not the case for the Ewe test. As a result, different words were tested in the two Ewe regions—Volta and Eastern. In addition, Part B was not administered in the Eastern region, because the examiners weren't certain about which words to read.

Parts A and B were scored for the Volta and Northern regions and Part A was scored for the Eastern region. Pupil responses were coded as 0 for a blank or no sound from the target word, 1 for one sound from the target word, 2 for a relatively close approximation of the target word containing several sounds from the target word, and 3 for an accurate representation of the target word. The range of possible scores was 0-18 for each part of this subtest.

Word Recognition. The purpose of this subtest was to evaluate pupils' ability to identify familiar words (Part A) and words that "mean the same thing" as a target word (Part B). Part A requires straight forward word recognition and Part B was designed to evaluate a combination of word recognition and vocabulary knowledge. In Part A, 4 groups of 3 printed words each were presented to the children in their response forms, the examiner pronounced one of these words, and the children were asked to mark that one on their papers. In part B, 4 groups of 3 printed words each were presented to the children in their response forms. The examiner read a word and asked the pupils to mark the word among the three choices that meant the same thing as the word that was read.

The Ewe and Gonja versions of the test contained different words. In addition, Part B was not given in the Eastern region, because the examiner was uncertain about how it should be administered. This combined with the sense that Part B was a completely alien task to both the examiners and the children, resulted in a decision to score only Part A of the Word Recognition subtest. The number of correct responses was counted yielding a score range of 0-4.

Concepts of Print. The purpose of this subtest was to evaluate pupils' basic understanding of books and print. In this subtest, the examiner hands the pupil a book and notes whether he or she holds the book right side up and looks through it by moving from left to right and top to bottom. The examiner also asks children to identify the title, pictures, and so forth. There were 6 items on this subtest making the possible range of scores 0-6.

Oral Reading/Reading Comprehension. The purpose of this subtest was to assess pupils' ability to read orally in Gonja or Ewe a passage appropriate for beginning readers. A story was selected from the Level 4 Reader of the BTL program and a set of 5 multiple choice comprehension questions were written for the passage. The same story and questions were used in both languages. The pupils were asked

individually to read the story. If they were able to read any of the story, they received a score of 1, 2, or 3 depending on their level of accuracy (roughly corresponding to independent, instructional, and frustration levels on an informal reading inventory, see Lipson & Wixson, 2003). If they were not able to recognize any of the words in the story, they scored 0. Only those pupils who were able to read at least some of the story were read the comprehension questions and the possible responses. The total number of correct responses was recorded for this subtest making the range of possible scores 0-5.

3.4.2 Pupil Assessments—Administered/Not Scored

Listening Comprehension. The purpose of this subtest was to evaluate pupils' ability to understand the important points of a story they heard. Since there aren't many mother tongue stories for children of this age, a story was written for this test. This same story was written in both Gonja and Ewe, along with a set of 6 multiple choice comprehension questions.

It was intended that after the examiner read the story to the whole group, the questions and their possible answers would be read one at a time and the children would mark their answers on their individual response sheets. However, it was only administered this way in the Northern region. In the Volta region, the children were asked the questions as a group and the examiner marked the response given by the first child to answer each question. In the Eastern region, the children were asked the questions as a group and children were called on to respond. If the first pupil answered incorrectly, the examiner called on another person. If the second person responded incorrectly the question was marked wrong for the whole group. Because of these administration problems, this subtest was not scored.

Phonemic Awareness/Initial Consonant Sounds. The purpose of this subtest was to evaluate the pupils' ability to hear individual sounds in words. This subtest consisted of a page of pictures that had been copied from one of the BTL books. The examiner read a word and the children were asked to mark the picture whose name begins with the same sound as the word that had been read. This subtest was not scored because there were a number of problems with both the construction and the administration of this subtest. Perhaps most importantly, it is likely that it's more appropriate to evaluate initial vowels than initial consonants in Ewe and Gonja given the linguistic properties of these languages and the early emphasis on vowels in instruction in these languages. Other problems arose because using a pre-existing page limited the picture-stimuli. Thus, different stimulus words were needed for the Ewe and Gonja tests because the names of the pictures begin with different sounds in the two languages. This resulted in different levels of difficulty for the two tests. In addition, when children had trouble identifying the names of the pictures, some examiners named the pictures for them and others did not. Whether or not the pictures are named, changes the task for the children.

Picture—Word Matching. The purpose of this subtest was to evaluate word recognition through yet another means that would likely yield information about the word recognition skills of pupils who weren't yet able to recognize the written form of the word. The design of the subtest was a written stimulus word followed by three pictures. The children were asked to read the word and then select the picture that showed the meaning of the word. This subtest was not scored, because there were problems with both the construction and the administration of this subtest. In the construction of the subtest, the pictures that were used were not very clear and the children were confused about what they represented. In the administration, some examiners read the words to the children, which changed this subtest from a word recognition measure to a vocabulary measure.

3.4.3 Questionnaires and Community Group Questions

Questionnaires, observation forms, and questions for community group meetings were created to gather information from a wide array of stakeholders. Separate instruments were created for: a) district personnel and district assemblies, b) head teachers and, c) teachers. In addition, a form was created to guide classroom observation of the teacher.

District Personnel and District Assembly Questionnaire. The questionnaire for district personnel and district assemblies was designed to gather opinions and information about the pilot programs. This was a

written questionnaire to be completed by the appropriate individual/s at the district level. It consisted of 13 questions, which focused on background, familiarity with the pilot program, perceptions of suitability, role in implementing the program, perceptions of impact on the curriculum, strengths and weaknesses of the program, and a comparison with traditional approaches to literacy instruction. The final questions asked if the person completing the questionnaire would support efforts to continue or expand the program, what activities would be needed to make expansion successful, and for recommendations for improving the overall program. The data from this questionnaire were first analyzed by topic and theme, and then for information related to the specific areas of attitudes, support, effectiveness of implementation and suitability of materials, and sustainability.

Head Teacher Questionnaire. The head teacher questionnaire was designed to gather opinions and information about the pilot programs and was not well suited for head teachers in non-pilot schools. If such a questionnaire is used again, we would recommend that it either be modified to accommodate non-pilot schools or that two separate questionnaires be used. This was a written questionnaire that consisted of 13 questions, which focused on background, familiarity with the pilot program, perceptions of suitability, role in implementing and monitoring, perceptions of impact on the curriculum, and perceptions of response from teachers and parents. The final questions asked for a comparison with traditional approaches to literacy instruction and for opinions about the strengths and/or weaknesses of the pilot programs. The data from this questionnaire were first analyzed by topic and theme, and then for information related to the specific areas of attitudes, support, effectiveness of implementation and suitability of materials, and sustainability.

Teacher Questionnaire. This was a written questionnaire designed for P1 teachers in BTL and ASTEP pilot and non-pilot schools. It is divided into sections focused on Background Information, Instructional Materials, Instructional Techniques, Support and Training, and Teaching English. The section on Background Information asks about such things as years of teaching, qualifications, languages spoken, and strengths and weaknesses of the approach used as well as specific factors that make it difficult to teach literacy. The section on Instructional Materials asks teachers to indicate whether the features of the materials they are using are good or poor by completing a checklist and to respond to open-ended questions about which materials are most/least helpful. The section on Instructional Techniques asks teachers to complete a checklist indicating whether they are using specified techniques in their instruction. This section also asks teachers to describe their role as teachers of reading and writing to young children, and to indicate how they provide support for individual differences in their classrooms.

The section on Support and Training asks teachers to describe the training they have received for the approach they are using to literacy instruction, and to indicate the impact of that training by completing a checklist. This section also asks teachers about their level of knowledge of the pilot program in their district and how they think this program compares to the traditional approach. Further, they are asked to describe the kind of support they have received for literacy instruction, whether it has been helpful, and what they could benefit from in the future. The final section, Teaching English, asks teachers if they expect their pupils to transition to English, when they might expect this transition to take place, and how well the instruction they are using and the supports in the community prepare pupils for this transition. The data from this questionnaire were first analyzed by topic and theme, and then for information related to the specific areas of attitudes, support, teaching/learning environment, effectiveness of implementation, and suitability of materials.

Classroom Observation Form. The classroom observation form was intended for use by someone observing a literacy lesson in a pilot or non-pilot class. The form itself consists of sections on Background, Classroom Setting, Methods, and Materials. The Background section makes certain there is a record of who was being observed, by whom, and in which school. It also records the teacher's proficiency in the language of instruction, the numbers of boys and girls in the class, and the type of instruction being used. The section on Classroom Setting has the observer complete a checklist about features of the classroom such as whether materials for reading and writing are visible and if pupils' work is displayed. The section on Methods has the observer complete a checklist indicating whether or not the teacher uses the various techniques specified on the list. The techniques specified on the observation checklist include those on the Teacher Questionnaire checklist to allow for comparison between a

teacher's self report and what was observed. The Materials section simply asks the observer to describe the materials used by the teacher during the observation. The data from this questionnaire were analyzed by topic and theme for information related to the specific areas of teaching/learning environment, effectiveness of implementation, and suitability of materials.

Questions for Parent/Community Member Meetings. A set of 10 questions was developed for use in meetings with parents and community members from each pilot and non-pilot school. There were questions specific to the pilot programs that were used primarily with pilot school communities and more general questions that were used with both pilot and non-pilot school communities. The program specific questions asked about awareness of the program, its suitability, the role taken by the community in implementation. The more general questions focused on their attitude toward the idea of learning to read and write in a Ghanaian language before transitioning to English, the role of reading/writing in the local community, and the importance of the learning to read and write in English. Community groups were also asked if they thought the pilot programs should be expanded and what would be needed for expansion.

Generally, the language specialists on the evaluation teams conducted the community group meetings in the local language, while another member of the evaluation team or a local assistant recorded the responses to the questions in English. The data from these meetings were first analyzed according to topics and themes, then they were examined for information specific to our interest in attitudes, supports, effectiveness of implementation and suitability of materials, and sustainability.

4.0 FINDINGS OF THE EVALUATION

As described previously, the findings of the evaluation are organized according to the desired outcomes as specified in the Terms of Reference. The first outcome addressed is an assessment of the attitudes of district personnel, head teachers, teachers, and community members towards the pilot programs. Second, our findings on the support activities from various sources including the district and the community. Third, is an assessment of the teaching/learning environment. Fourth is our analysis of pupils' reading performance by pilot and non-pilot schools and region. Fifth, is an assessment of the effectiveness of the program implementation and the suitability of the programs for increasing literacy in Ghana's primary pupils. Sixth, is the analysis of the sustainability of the pilot programs.

4.1 Attitudes

Generally, everyone we talked with or who filled out a questionnaire (district personnel, head teachers, P1 teachers, parents and community members) expressed enthusiasm for the pilot programs. They agreed that these programs were far better than the traditional approach and that they should be expanded to include more Ghanaian languages and schools. Specific positive and negative responses are described separately for district personnel, head teachers, and P1 teachers.

District Personnel. Information was obtained from individuals in a range of positions at the district level. For BTL districts this included the District Chief Executive, Co-ordinating Director, Education Director, Budget Officer, and a Circuit Supervisor. For the ASTEP district, this included the District Coordinating Director, the Deputy Coordinating Director, Assistant Directors, and a Circuit Supervisor. The first notable finding for this group is the level of awareness district personnel reported about the pilot programs. The overwhelming majority of the district personnel in BTL districts indicated that they were very familiar with the program. In contrast, only one of the respondents from the ASTEP district indicated a high degree of familiarity with the program. Despite the differences in familiarity reported by district personnel in BTL and ASTEP districts, all of the respondents from BTL districts and most of those from the ASTEP district indicated that the felt the materials and methods for both programs were suitable for teaching primary pupils to read and write in their home language. There was the suggestion, however, that some of the BTL materials needed modification to better suit the Ghanaian cultural environment.

Generally, the strengths noted by district personnel were similar across BTL and ASTEP districts. These included improved teaching and learning of the Ghanaian language, attitudinal changes on the part of pupils and teachers in the form of punctuality, regular attendance and increased enrollment in P1 along

with more active participation of pupils in lessons. Special note was made among ASTEP respondents regarding the increased availability of materials in Ghanaian languages. On the negative side, both BTL and ASTEP respondents commented on how demanding the programs are with regard to time and resources, the potential difficulty of recruiting and maintaining qualified teachers for the program, and that the difficulties that arise when either the teacher or some of the pupils are not highly familiar with the Ghanaian language of instruction. At least one ASTEP respondent indicated that the program placed too much emphasis on the Ghanaian language and denied the pupils access to English. Both BTL and ASTEP respondents recommended a great deal of additional support for the programs in the form of training for teachers, head teachers, district personnel, and communities through PTAs, creating additional TLMs, provision for increased supervision, monitoring, and evaluation, and increasing efforts to post qualified teachers to primary level classes.

Head Teachers. The majority of head teachers across BTL and ASTEP schools indicated that the program is suitable for primary pupils and relevant because it engages the pupils and improves their learning, it has given pupils a positive attitude toward reading and confidence in their ability to learn, and it has increased parent interest in their children's schooling. As specific strengths of the methods and materials, they noted that they are child-centred and activity-oriented, they promote learning of the local language, that they are easier for teachers to use and that they make teachers more confident. Both BTL and ASTEP head teachers indicated that a weakness of the programs was that they are too time-consuming. Another weakness noted by at least one BTL head teacher was that the program does not allow for the use of other materials and creativity on the part of teachers. Weaknesses specific to the ASTEP program focused on the difficulty of implementation when teachers and/or pupils do not speak the local language. In addition, they noted that the program lacks sufficient supplementary materials and that there were not always enough of the basic materials for the large classes in some schools.

Teachers. All of the P1 teachers indicated that the BTL and ASTEP programs have strengths. In particular, they noted that the programs are child-centred, they encourage active participation of pupils, and they improve reading and writing in Ghanaian languages. In general, the majority of P1 teachers felt that the materials were good because the instructions are clear, the lessons well sequenced, the language is appropriate for the learners, and the teacher's guides are useful. In addition, both BTL and ASTEP teachers indicated that as a result of the programs they enjoy teaching more, feel they are better teachers, teach differently than before, and that the children enjoy class more. In addition, the ASTEP teachers noted that they liked the fact that the program encourages teaching and learning L1. P1 teachers' concerns about the programs focused around the issue of how time consuming they are, that they are difficult to implement with large classes, and in the case of BTL only, several indicated that the materials did not reflect the local culture as well as they would have liked.

Parents and Community Members. In general, the parents and community members we spoke with had some awareness of the BTL and ASTEP programs. They had positive impressions of the programs and thought they were entirely suitable primarily because they liked the emphasis on the local language. At the same time, they acknowledged the importance of learning to read and write English, because it is an international/national language and it is used for examinations. They were generally eager to become more involved with the programs and indicated that there should be more, regular interaction between parents and teachers. They also noted that attention needs to be paid to the posting of trained teachers who can speak the local language, and to motivating teachers of the program to continue working hard and teaching at the primary level. Other suggestions included the need for more books in Ghanaian languages that pupils can read in school and at home, and the ASTEP communities noted the need for more frequent monitoring.

4.2 Support

In general, all the individuals and groups we spoke with or who filled out questionnaires indicated that they wanted to find ways to be supportive of the programs. Those that had not already provided support indicated that it was either because they were not aware of the program or how they might be supportive, and/or they did not have the resources necessary to provide the desired support. The specific responses of district personnel, head teachers/teachers, and parents and community members follow.

District Personnel. Personnel in BTL districts indicated that they provided support to the program by posting teachers who are trained and can speak local language to P1 classes. Personnel from both BTL and ASTEP districts indicated that they provided supervision, monitoring, and instructional support to P1 teachers. However, it was also noted that the lack of training made it difficult for Circuit Supervisors in the ASTEP district to provide meaningful support to the teachers. The District Assembly in one region provided additional support by purchasing mats and/or furniture, but those in the other two regions indicated that they did not provide support because they were not involved in the implementation of the program.

Head Teachers/Teachers. Most BTL teachers reported strong support from head teachers, Circuit Supervisors, and other teachers in their schools and gave examples such as other teachers helping them clean up their classrooms and head teachers assisting with lessons. BTL teachers from one region also reported occasional meetings they had with head teachers and Circuit Supervisors to compare notes and share materials. In addition, all P1 BTL teachers reported regular monitoring.

In contrast, the ASTEP teachers reported that head teachers and Circuit Supervisors were unable to provide much support because they had not participated in the training. In addition, 7 of the 11 P1 ASTEP teachers reported receiving no monitoring visits.

Parents and Community Members. As with the head teachers/teachers, there were differences in the support provided by parents and community members between BTL and ASTEP schools. Virtually all of the BTL pilot school communities provided supports that were specific to the needs of the program. In addition to parents and PTAs purchasing mats and exercise books, some PTAs provided free lunch to the P1 teacher, worked a P1 teacher's farm for her, and raised funds for a P1 teacher as compensation for the extra work being done. During the course of the meetings we conducted, BTL community members committed to further support the program by undertaking repair work on the classrooms and providing annual award to P1 teachers in appreciation of their hard work.

In contrast, the types of support provided by the ASTEP communities were more general in nature. These included supports such as providing food and basic needs, assistance with homework, ensuring pupils attended school regularly, and visiting school to learn what is happening.

4.3 Teaching/Learning Environment

Evaluation teams spent at least half a day in each of the classrooms included in the sample. During that time, they took notes and completed a teacher observation protocol, which was used to characterize the teaching and learning environment. Another primary data source was the information provided by teachers in the questionnaires they completed. The findings are reported here in terms of teacher characteristics and the observed classroom environments.

Teacher Characteristics. Fifteen of the 24 pilot and non-pilot teachers were trained, but there are important differences across regions. In the Volta region, 5 of 6 P1 teachers were trained, in the Northern region 6 of 7 P1 teachers were trained and in the Eastern region only 4 of 11 P1 teachers were trained. The untrained teachers in the Northern and Volta regions were in non-pilot classes, and in the Eastern region they were in both implementing and non-implementing classes. All but one of the P1 teachers in pilot and non-pilot classes in all regions reported that they could speak the local language. However, there was one teacher in a Volta non-pilot school who reported speaking only Gonja (not the predominant local language).

On the questionnaire item that asked teachers how much they knew about the programs being piloted in their district, 8 of 11 teachers in the Eastern region indicated that they had "some" knowledge about ASTEP, two said they knew a lot and one said he or she knew nothing about the program. The pattern was quite different in the Northern and Volta regions where the non-pilot teachers indicated that they either had no or some knowledge of BTL and the pilot teachers all indicated that they knew a lot about the program.

Classroom Environment. In general, the BTL pilot classrooms looked quite different from the BTL non-pilot classrooms and the ASTEP classrooms, and there was little difference between the implementing and non-implementing ASTEP classrooms. Although the ASTEP classrooms looked more like the BTL non-pilot classrooms, than the BTL pilot classrooms, there was some evidence of practices more in keeping with the principles of the pilot programs.

A prominent feature of the BTL pilot classrooms was the active involvement in lessons on the part of both teachers and pupils. The impact of the BTL program was evident in the organization of the pilot classrooms in several ways. Pupils were sitting and working together in groups, and the room was arranged for different types of instructional activities through the use of a teaching corner with mats for pupils, and literacy, numeracy, and library corners. BTL materials were posted all over the room in what one group of teachers characterized as "talking walls." Reading and writing materials were evident in the classrooms, student work was posted, and instruction was observed that included independent reading and activities that connect reading and writing.

In contrast, the BTL non-pilot classrooms were organized more traditionally with the pupils sitting in rows, the teacher conducting lessons from the front of the room, and little evidence of grouping or the use of "corners" or centers for instructional purposes. There was also more whole class instruction and "chorusing" than in BTL pilot classrooms. There was little evidence of the presence or availability of reading and/or writing materials, student work was not displayed, and the walls were generally bare. However, there was some evidence that the teachers in the non-pilot classrooms in the Volta region, but not the Northern region, were engaging in instructional practices that were more characteristic of BTL pilot teachers such as using pre-reading and writing activities, and making connections between reading and writing.

In many respects, both the implementing and non-implementing ASTEP classrooms reflected the same traditional organization as the BTL non-pilot classrooms. However, there were trends that suggested movement in the directions supported by the pilot programs. For example, although there was a great deal of whole group instruction, there was also evidence of pupils working together in groups more than in the BTL non-pilots. Even when pupils were working in groups, however, they were all given the same tasks rather than capitalizing on groups for differentiated instruction. Another example of the trend toward improved instruction was that all ASTEP classrooms included a lot of pre-reading and writing activities.

4.4 Pupil Performance

In this section we summarize and describe the results of the various student performance measures. These will be displayed in several ways to provide as comprehensive a picture as possible about the effects of the pilot programs on student literacy achievement.

4.4.1 Aggregate Scores

To provide an indication of overall literacy achievement, scores on the subtests described previously have been combined into three aggregate scores that reflect different "stages" of literacy development. The first aggregate score is comprised of three Emergent Literacy Indicators—Name Writing, Alphabet Writing, and Concepts of Print. Table 2 presents the minimum, maximum, and mean scores for the raw data on pupil performance on this aggregate measure by region and pilot non-pilot status. The range of scores possible for each pupil on these subtests is 0-2 for Name Writing, 0-13 for Alphabet Writing, and 0-6 for Concepts of Print, for a total range *per pupil* of 0-21.

Table 2: Average Emergent Literacy Indicators					
Region	**Pilot/Non-Pilot**	**N**	**Min**	**Max**	**Mean**
Northern	Pilot	53	14.4	19.0	17.0
	Non-Pilot	14	14.6	16.3	15.5
Volta	Pilot	30	15.9	19.0	18.3
	Non-Pilot	16	12.1	14.6	13.4
Eastern	Pilot	67	7.2	18.6	14.8
	Non-Pilot	36	9.8	12.8	11.3

Since the Emergent Literacy Indicators represent the most basic level of literacy development, we should expect pupils to be quite accomplished on these measures. In all three regions, pilot students outperformed non-pilot students – even on this most basic measure of early literacy, although Table 2 scores reflects relatively smaller differences between pilot and non-pilot groups than we will see on other assessments. Two points should be made, however. First, these P1 pupils were completing one whole year of schooling. That the results show that so many cannot write their own name or write the alphabet or handle a book appropriately is a matter of extreme concern. It is hard to imagine what children have been doing for the year if they have not at least managed to acquire this limited knowledge and skill. Second, there is a dramatic difference between pupils in the Northern/Volta regions and those in the Eastern region. In fact, the students in the "pilot" schools in the Eastern region performed, on average, about the same as non-pilot students in the other two regions (μ = 14.8 versus μ = 13.4 and 15.5 respectively). It would appear that ambivalence about L1 instruction and/or implementation of the program has actually depressed pupil performance in either L1 or English (note that on these tests either language was acceptable). Indeed, pupils in the Eastern region had the lowest mean scores overall.

The second aggregate score is comprised of two subtests measuring Word and Sound abilities—Word Writing and Word Recognition. Table 3 presents the minimum, maximum, and mean scores for average pupil performance by Region and Pilot/Non-pilot status on the composite Word Sound Score. Missing data for Word Writing Part B makes it necessary to treat the two parts of this score separately. The range of scores possible for each pupil on these subtests is 0-18 each for parts A and B of Word Writing, and 0-4 Word Recognition, for a total range per pupil of 0-22 for part A and 0-40 for Part B.

Table 3: Average Word and Sound Indicator Parts "A" and "B"								
			A			**A+B**		
Region	**Pilot/Non-Pilot**	**N**	**Min**	**Max**	**Mean**	**Min**	**Max**	**Mean**
Northern	Pilot	53	11.6	18.9	18.8	20.3	31.4	27.1
	Non-Pilot	14	0.9	1.9	1.4	0.9	5.0	2.9
Volta	Pilot	30	14.1	21.8	17.4	22.9	35.8	27.7
	Non-Pilot	16	5.1	6.3	5.7	6.5	11.6	9.1
Eastern	Pilot	67	3.5	14.9	9.4	-	-	-
	Non-Pilot	36	2.0	5.0	3.8	-	-	-

Table 3 clearly reveals a much more dramatic difference between pilot schools and non-pilot or non-implementing ones on this more conventional measure of literacy. Once expectations move beyond the emergent literacy stage, the impact of instruction becomes quite clear. Pupils in the non-pilot schools were almost completely unable to complete these tasks involving word reading and phonic-decoding (or phoneme representation). On average, students who did *not* receive literacy instruction in one of the pilot programs had scores that ranged from 1.4 to 5.7 out of a possible 22 points) for Word Writing, Part

A, whereas pilot school students, on average, scored between 9.4 and 18.8. Once again, there were significant differences between schools implementing the BTL program and those in the Eastern Region who were implementing the ASTEP program. Indeed, BLT students' scores were almost double those of the Eastern Region students. It should be emphasized, again, that pupils were given partial credit for "misspelled" words if their approximations demonstrated attention to conventional sound-symbol correspondence. Thus, even if pupils were not able to write words they should have been able to use what they had learned about phonics to make a good attempt. These attempts were much more common in pilot than non-pilot/non-implementing schools.

The third aggregate score is comprised of the Oral Reading and Comprehension subtests. Table 4 presents the minimum, maximum, and mean scores for the composite score. Since there were very few pupils who were able to read the passage, this table also provides data on the number of readers present in each group. The range of scores possible for each pupil on these subtests is 0-3 for Oral Reading and 0-5 for Comprehension, for a total range per pupil of 0-8. These scores, of course, represent the most sophisticated levels of literacy achievement for P1 pupils.

Table 4: Average Oral Reading and Comprehension Indicator

Region	Pilot/Non-Pilot	N	Min	Max	Mean	# Readers
Northern	Pilot	53	0.0	4.0	2.0	20.0
	Non-Pilot	14	0.0	0.0	0.0	0.0
Volta	Pilot	30	0.4	5.5	2.8	16.0
	Non-Pilot	16	0.0	0.0	0.0	0.0
Eastern	Pilot	67	0.0	2.3	0.3	4.0
	Non-Pilot	36	0.0	0.2	0.1	0.0

Only 40 of the 216 pupils were able to score on the oral reading and comprehension subtests. Of these pupils, 20 were in the Northern region, 16 in the Volta region, and 4 in the Eastern region. Although few pupils managed to perform well, virtually all of those who could read and comprehend grade-appropriate texts were in the pilot schools. As well, the pupils in the Eastern region, even in the pilot schools, were much less likely to be reading than those in other regions. Roughly 38% and 53% of children in pilot schools in the Northern and Volta regions respectively were able to do at least some reading with comprehension. While not as large a number as we might like, this is an encouraging start given that the BTL pilot was not implemented until mid-year. The 40 pupils who were reading were located in 9 of the 23 schools; 3 of 6 in the Northern region, 4 of 6 in the Volta region, and 2 of 11 in the Eastern region. In the Eastern region, fewer than 6% of children were reading.

Before turning our attention to a closer examination of the pupil performance data, we want to strongly make the point that there was considerable variation within groups and regions. Hence, in Figures 1 and 2 we display the school scores for each aggregate measure (Emergent Literacy, Word/Sound Knowledge, and Oral Reading and Comprehension). Figure 1 displays the average scores for the ASTEP schools in the Eastern (Afram Plains) region by pilot and non-pilot schools. Figure 2 displays the average scores for the BTL pilot and non-pilot schools in the Northern and Volta regions. Since the range of possible scores is similar for the Emergent Literacy and Word Sound Indicators, the difference in these scores is likely to reflect substantive differences in performance. Although a developmental model would predict lower scores on Oral Reading and Comprehension, the magnitude of the difference represented here is partly due to the difference in the possible range of scores for this indicator.

The between-school differences in the Afram Plains (see Figure 1) are especially notable and not entirely explicable by self-reported implementation. For example, Eastern School "D" has virtually no students who can read text with comprehension and their overall scores on both emergent literacy and word/sound tests are extremely low. On the other hand, Eastern School "E" has a number of students who can read

and, at least as important, average scores on the tests of emergent literacy and word/sounds that suggest many other children are almost meeting this standard.

Figure 1: Average Emergent Literacy, Word/Sound and Oral Reading/Comprehension Scores for Implementing and Non-Implementing ASTEP Schools in Eastern Region

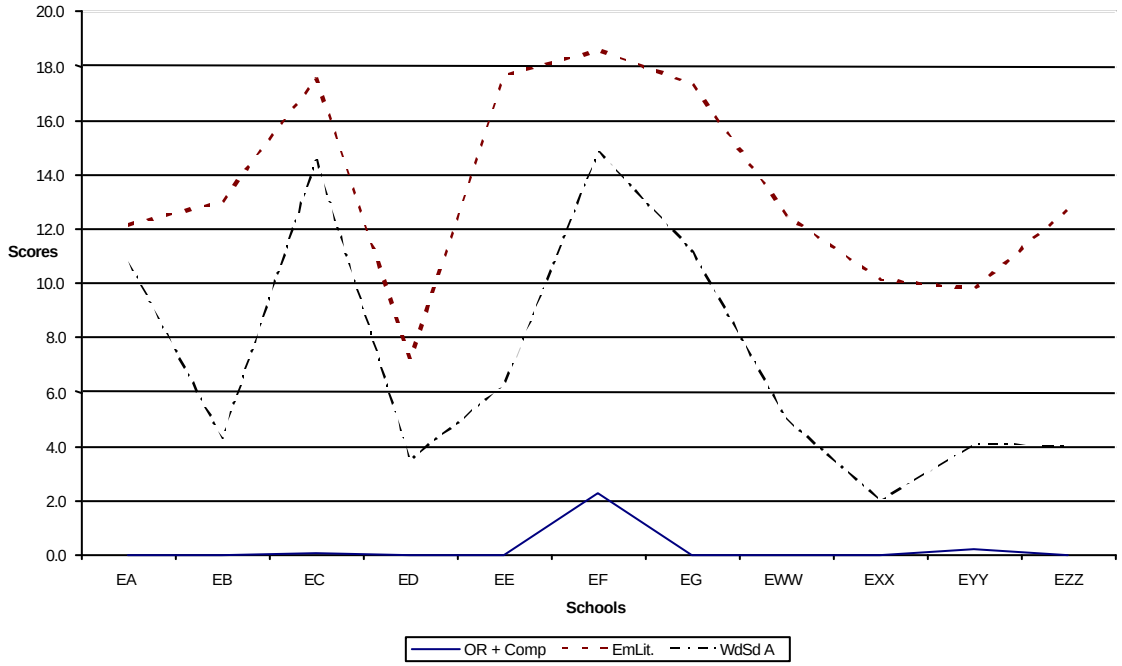
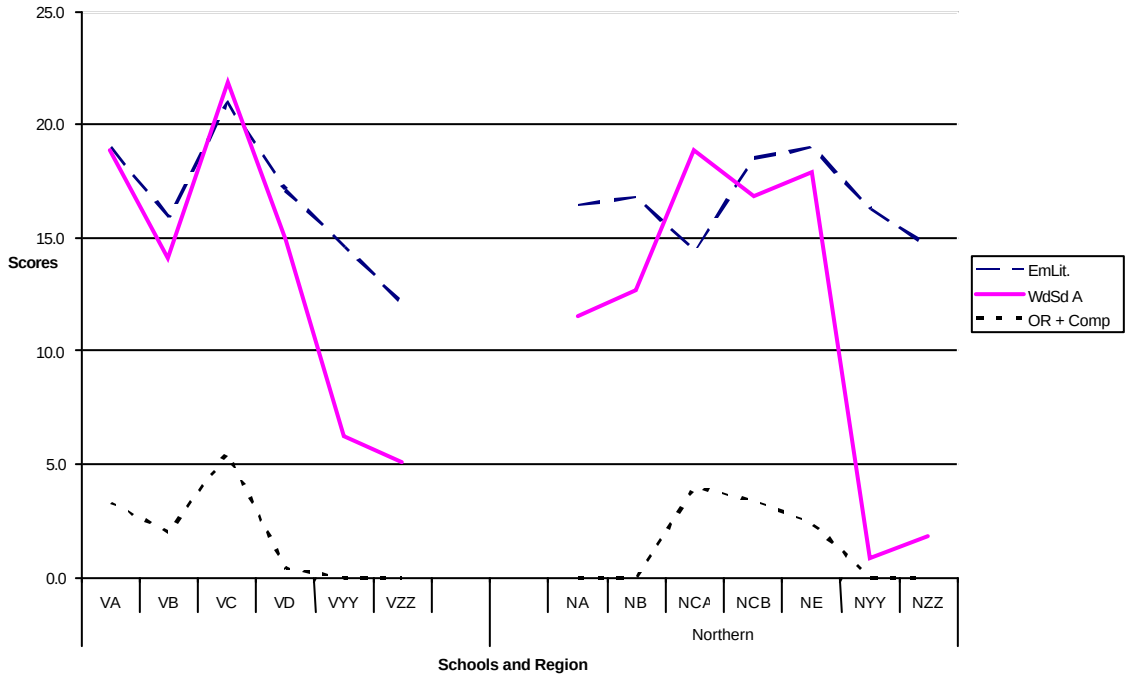


Figure 2: Average Emergent Literacy, Word/Sound and Oral Reading/Comprehension Scores by Region and BTLand Non-BTL Schools



What is clear is that some schools and teachers (even within the same district and general socio-economic conditions) are doing much better than others. This fact is made visible during observations in classrooms where, as you might expect, some teachers display fine appreciation for literacy development and an ability to engage children in important work while others have either abandoned the pilot materials or never really implemented them in the first place. Several teachers were observed conducting traditional oral recitation lessons with virtually no attention to texts, even though children at the end of the year should have been able to read and write some things.

Although not quite so dramatic, there are, nevertheless, similar between-school differences in the Northern and Volta Regions among the BTL schools also. Clearly the most noticeable differences are between pilot and non-pilot schools but even among the pilot schools there are some that are doing quite a bit better than others. Note, for example, the differences between "NA" and "NCA" on both word recognition and oral reading/comprehension tasks. A similar difference is observable between "VB" and "VC" in the Volta region. We will discuss these school-based differences further in the implications and recommendations section.

4.4.2 Individual Subtests

In the next several pages, we will examine each of the pupil subtests more carefully. For these data, we have aggregated the data for schools by regions and according to their status as a pilot/implementing or non-pilot/non-implementing school.

Name Writing Performance. As indicated previously, the range of possible scores for Name Writing was 0-2, with 0 reflecting no attempt or one that did not include any sounds in the pupil's name and 2 reflecting accurate writing of either the first or last name. Table 5 presents the minimum, maximum, and mean raw score total scores for schools by region and pilot/non-pilot status. Figure 3 displays the *average* scores on Name Writing by region and pilot, non-pilot status. As we noted, even this most basic of literacy tasks reveals differences between pilots and non-pilots and across regions. Most

notable is the difference between pilot and non-pilot schools in the Northern region. Children in this poor, remote area of Ghana have had virtually no access to print (or schooling) until quite recently. Whereas almost all of the children in the pilot schools could write their names, most others, in non pilot schools could not. These schools are almost universally understaffed and the classrooms that are not participating in the BTL pilot are generally bereft of materials or instructional opportunity. Hence, in this region, BTL pilot represent the differences between something and nothing.

Table 5: Raw data for Name Writing

Region	Pilot/Non-Pilot	N	Min	Max	Mean
Northern	Pilot	53	16.0	25.0	18.8
	Non-Pilot	14	7.0	9.0	8.0
Volta	Pilot	30	11.0	18.0	14.8
	Non-Pilot	16	12.0	14.0	13.0
Eastern	Pilot	67	9.0	24.0	16.3
	Non-Pilot	36	10.0	18.0	13.5

Alphabet Writing. The Alphabet Writing subtest had a range of possible scores of 0-13, with 0 representing no recognizable letters in Ewe, Gonja, or English, and 13 indicating that all 13 letters written were recognizable. In addition to counting the number of letters that were recognizable, each pupil's responses were coded for the language in which they were written and for whether the letters were written in correct sequence.

Approximately 52% of the pupils wrote the alphabet in Gonja or Ewe, 48% in English. Although there was some regional variation, there was little difference between pilot and non-pilot schools with 58% of the pupils in pilot schools using Gonja or Ewe and 48% of the pupils in non-pilot schools using the local language. It appears that it was almost as likely that pupils would write the alphabet in English whether they were in a pilot program or not. This is likely because the pilot programs do not emphasize alphabet writing, nor is this recommended in traditional instruction. Perhaps because of this, neither BTL nor ASTEP materials include an alphabet poster, yet we observed alphabet posters in many classrooms (both pilot and non-pilot). Virtually all of these posters displayed the English (versus Ghanaian language) alphabet.

Figure 3: Name Writing By Region and Pilot/Non-Pilot Status

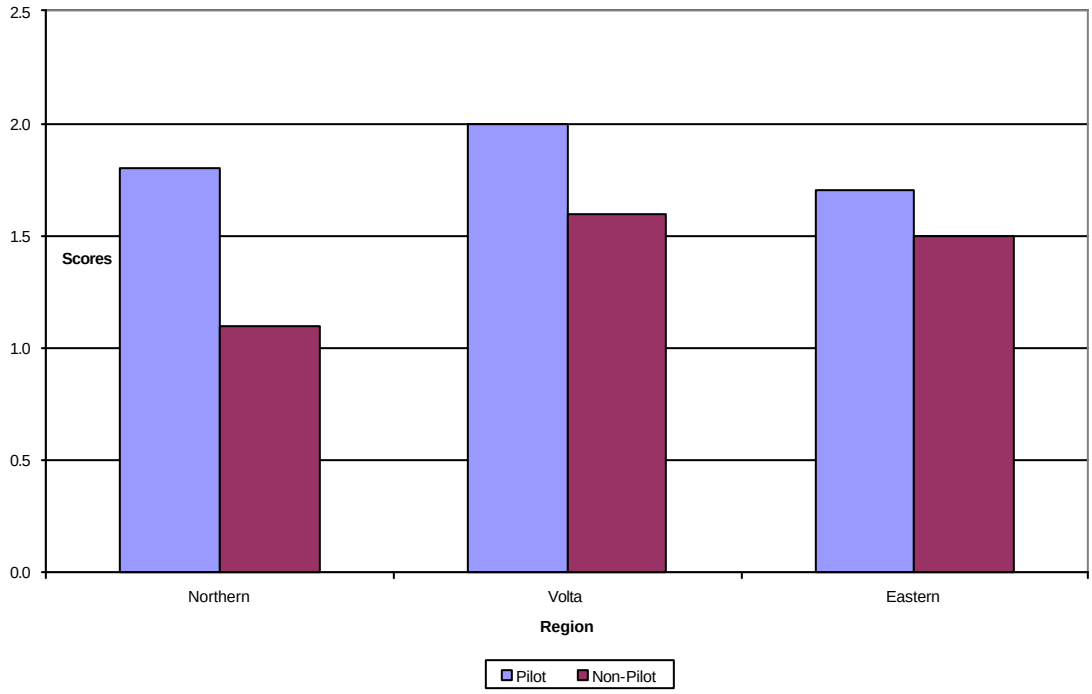
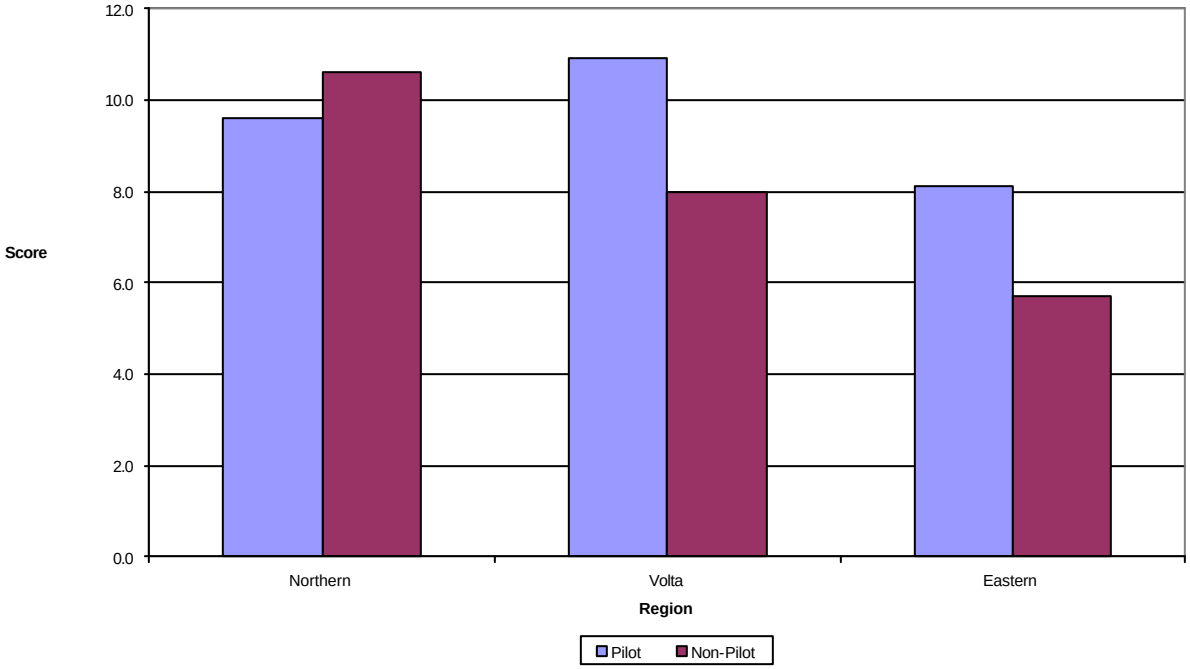


Table 6 presents the total scores for schools for Alphabet Writing by region and pilot and non-pilot status and Figure 4 displays the average *pupil scores* for Alphabet Writing by region and pilot status. For reasons that are not immediately obvious, it appears that pupils (and probably teachers) in the Volta region were more attentive to alphabet writing than those in other areas although, once again, students in the Eastern Region, Afram Plains fared the least well. Importantly, the average alphabet writing score – a very basic aspect of literacy -- did not reach mastery in any region raising questions, once again, about the nature and rigor of P1 instruction.

Table 6: Raw Data for Alphabet Writing

Region	Pilot/Non-Pilot	N	Min	Max	Mean	% Gh.Lang	% Seq.
Northern	Pilot	53	70.0	168.0	103.8	31.9	29.2
	Non-Pilot	14	74.0	74.0	74.0	42.9	50
Volta	Pilot	30	68.0	91.0	80.0	88.9	66.7
	Non-Pilot	16	59.0	69.0	64.0	56.3	12.5
Eastern	Pilot	67	7.0	5.0	79.4	54.4	27.8
	Non-Pilot	36	36.0	71.0	51.0	37.5	10.6

Figure 4: Letter Writing By Region and Pilot/Non-Pilot Status



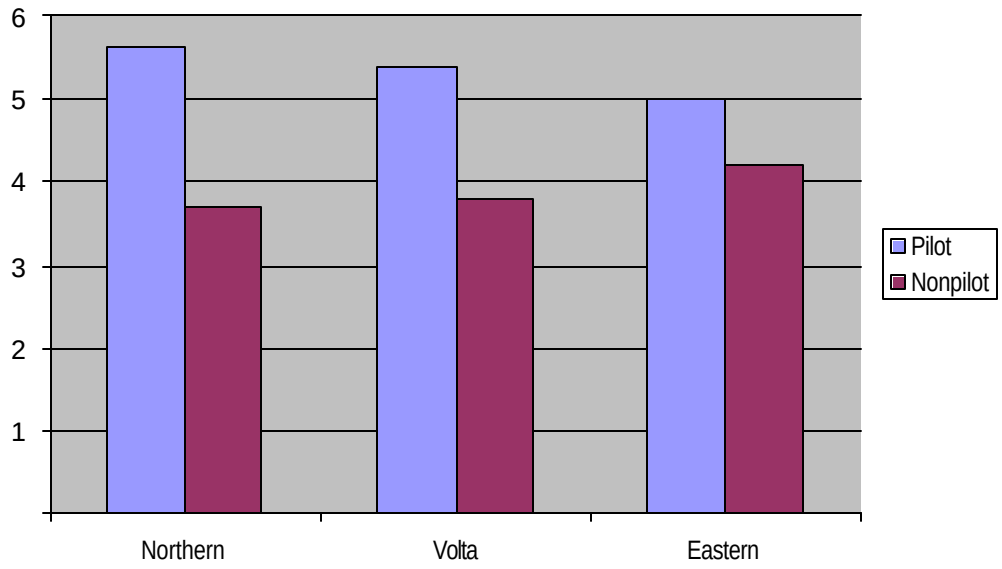
Concepts of Print. The range of possible scores for each pupil on the Concepts of Print subtest is 0-6, with 0 indicating that the pupil demonstrated no familiarity with books and a 6 indicating that the pupil is highly familiar with books. Table 7 presents the total school scores for Concepts of Print by region and pilot and non-pilot status and Figure 5 displays the average *pupil scores* for Concepts of Print by region and pilot status.

Table 7: Raw Data for Concepts of Print

Region	Pilot/Non-Pilot	N	Min	Max	Mean
Northern	Pilot	53	42.0	82.0	59.6
	Non-Pilot	14	19.0	33.0	26.0
Volta	Pilot	30	35.0	45.0	39.5
	Non-Pilot	16	26.0	34.0	30.0
Eastern	Pilot	67	25.0	68.0	47.9
	Non-Pilot	36	35.0	39.0	37.0

Figure 5 clearly demonstrates the significant differences between pilot and non-pilot schools on this measure of early literacy learning. While students in the two BTL pilot regions are approaching the ceiling score of "6," students in the pilots and in the ASTEP schools are lagging behind in their ability to handle a book and identify print as the important feature of text reading.

Figure 5: Concepts of Print by Region and Pilot/Non-Pilot Statu



Word Writing. The range of possible scores on Word Writing was 0-18 each for Parts A and B. A score of 0 indicates that the pupil either did not attempt to write any words or that what was written did not contain any recognizable sounds contained in the dictated word. A score of 18 indicated that the pupil wrote correctly all 6 words in Part A or Part B. Table 8 presents the total scores for Word Writing separately for Parts A and B by region and pilot and non-pilot status, and Figure 6 displays the average scores for Word Writing separately for Parts A and B by region and pilot status. It is necessary to treat Parts A and B separately because of missing data.

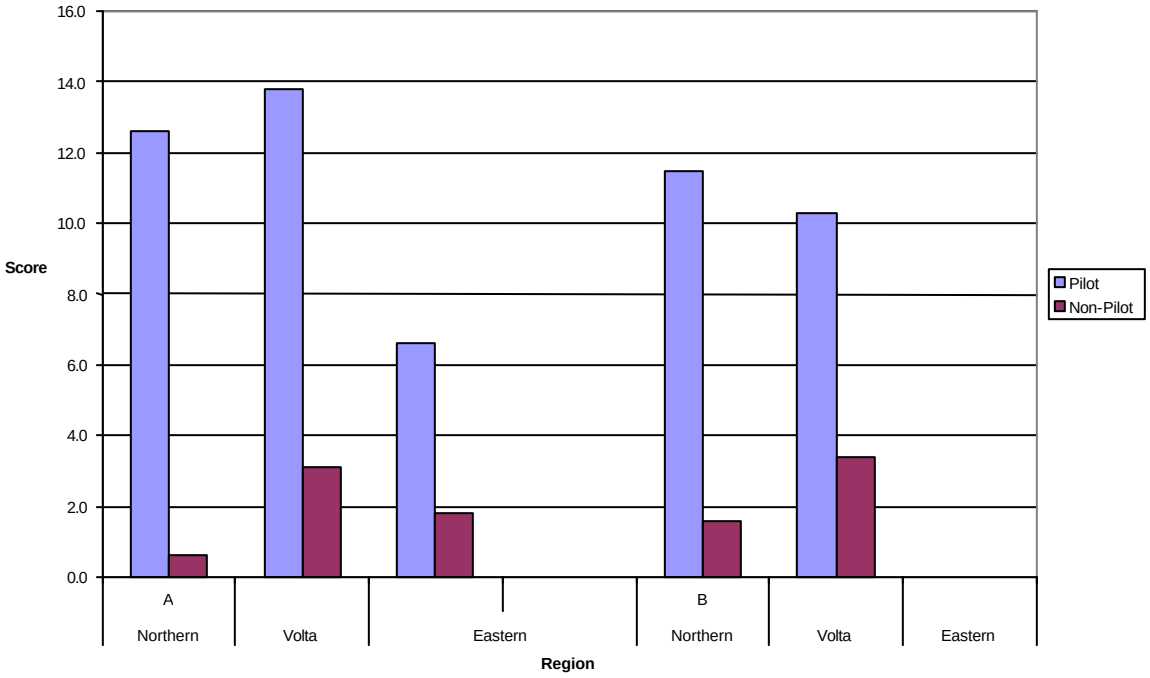
Table 8: Raw Data for Word Writing Parts "A" and "B"

			A			B		
Region	**Pilot/Non-Pilot**	**N**	**Min**	**Max**	**Mean**	**Min**	**Max**	**Mean**
Northern	Pilot	53	76.0	212.0	136.6	79.0	189.0	124.0
	Non-Pilot	14	2.0	7.0	4.5	0.0	22.0	11.0
Volta	Pilot	30	92.0	103.0	99.5	60.0	84.0	74.3
	Non-Pilot	16	16.0	33.0	24.5	11.0	43.0	27.0
Eastern	Pilot	67	16.7	91.7	61.1	-	-	-
	Non-Pilot	36	1.0	68.0	17.0	-	-	-

This task, more than any other, reveals what children have learned about phonics/decoding in their mother tongue. Because the scoring rewarded both accurate writing and good approximations, children who had analyzed the sounds of the word received partial credit. Figure 6 clearly reveals how much more capable children were in pilot schools than in non-pilot schools across all three regions. Children in the BTL pilot schools in both regions (Northern and Volta) were very successful on this task, with mean scores between 12.4 and 13.9. On the other hand, non-pilot children in those regions scored, on average, well below "5."

The children in the Eastern region were considerably less capable than children in other areas (see Figure 6), although students in "implementing" schools were much more successful than those in "non-implementing" ones. Anecdotal evidence suggests that teachers in that region received mixed messages about the value of teaching in mother tongue and some abandoned the ASTEP program all together – either because they themselves were not comfortable with it or because their supervisors told them to. Several children in this region attempted to respond to the Word Writing task by drawing pictures of the target word and other children actually translated the Ewe words into English and then attempted to write that word. Although the number of such instances was small (fewer than 10), this behaviour was not seen in any other region and likely reflects the mixed instructional messages in those settings.

Figure 6: Word Writing "A" and "B" By Region and Pilot/Non-Pilot Status

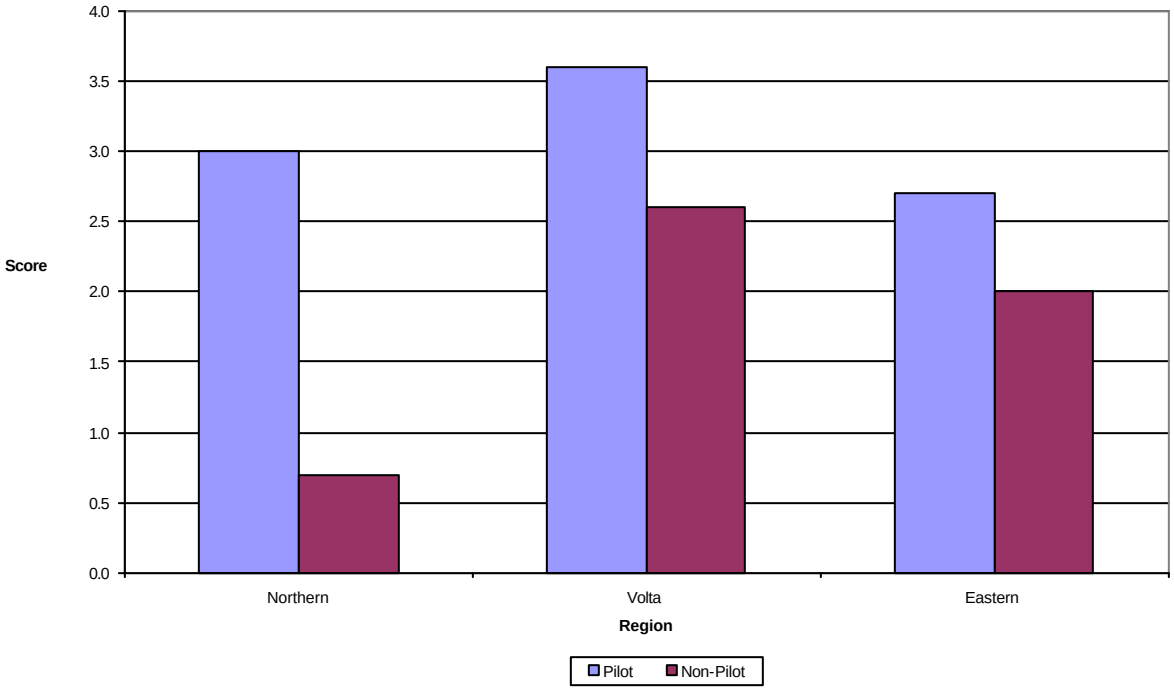


Word Recognition. The range of possible scores for each pupil on the Word Recognition subtest was 0-4, with 0 indicating that none of the four words were identified accurately and 4 indicating that the pupil identified all four of the words accurately. Table 9 presents the total school scores for Word Recognition by region and pilot and non-pilot status. Figure 7 displays the *average pupil scores* for Word Recognition by region and pilot status.

Performance on the Word Recognition subtest reveals similar patterns with performance on the Word Writing subtest, with somewhat less dramatic differences between pilot and non-pilot schools in each region. As with differences among other subtests, this is predictable given that as children develop word recognition skills they are more likely to be able to identify a word from among several written choices before they are able to write a word without any written clues to assist them. These data suggest that children in the BTL pilot schools were reasonably proficient at word recognition. However, the children in the non-pilot BTL schools in the Volta region performed much better than those in the non-pilot BTL schools in the Northern region. This suggests that the *traditional* instruction in the Volta region has been more successful at helping children begin to acquire word recognition skills than it has in the Northern region. This is likely the result of overall quality of instruction in the different regions and perhaps, also, the result of some variation in educational opportunity within the communities.

Table 9: Raw Data for Word Recognition					
Region	**Pilot/Non-Pilot**	**N**	**Min**	**Max**	**Mean**
Northern	Pilot	53	27.0	39.0	31.2
	Non-Pilot	14	4.0	6.0	5.0
Volta	Pilot	30	21.0	32.0	26.8
	Non-Pilot	16	17.0	25.0	21.0
Eastern	Pilot	67	12.0	40.0	26.4
	Non-Pilot	36	15.0	19.0	13.0

Figure 7: Word Recognition By Region and Pilot/Non-Pilot Status



The performance of children in the pilot and non-pilot ASTEP schools in the Eastern region shows a different pattern than the performance of children in the BTL regions. Children in the implementing schools performed about the same as those in the non-pilot schools in the Volta region. The Volta and Eastern regions are more alike than is the Northern region. In addition, both were conducting instruction and assessment in Ewe. Hence, some variation in assessment items may account for these differences. On the other hand, it does appear that pupils are learning this skill at close to the same rate in implementing and non-implementing ASTEP schools – and that the children are more like their Ewe-speaking counterparts in non-pilot schools in the Volta region.

Oral Reading and Comprehension. The range of possible scores for Oral Reading was 0-3, with a 0 representing the ability to read none or only a few of the words on the passage and 3 indicating that the pupil was able to read the passage with very few errors. Table 10 represents the total scores for Oral Reading by Region and Pilot and Non-pilot status and Table 11, the same information for comprehension. These tables reveal the small number of pupils who were able to read accurately and with understanding. However, the few who could were located in pilot schools.

Table 10: Raw Data for Oral Reading					
Region	**Pilot/Non-Pilot**	**N**	**Min**	**Max**	**Mean**
Northern	Pilot	53	0.0	13.0	7.4
	Non-Pilot	14	0.0	0.0	0.0
Volta	Pilot	30	1.0	8.0	5.0
	Non-Pilot	16	0.0	0.0	0.0
Eastern	Pilot	67	0.0	6.0	1.0
	Non-Pilot	36	0.0	1.0	0.3

Table 11: Comprehension					
Region	**Pilot/Non-Pilot**	**N**	**Min**	**Max**	**Mean**
Northern	Pilot	53	0.0	28.0	14.1
	Non-Pilot	14	0.0	0.0	0.0
Volta	Pilot	30	3.0	25.0	13.8
	Non-Pilot	16	0.0	0.0	0.0
Eastern	Pilot	67	0.0	10.0	1.4
	Non-Pilot	36	0.0	1.0	0.3

4.5 Effectiveness of Implementation and Suitability of Materials

BTL. The implementation of BTL appears to have been unusually effective. The combination of ongoing training and monitoring influenced teaching and learning positively in all classes/schools. The availability of many teaching-learning materials (TLMs) enhanced the program's effectiveness. This is an especially important point to emphasize because the comparison of pilot and non-pilot schools often involved comparing schools with the complete BTL kit (posters, pupil readers, word-sentence builders) with schools that had absolutely no visible TLMs. In addition, mandates that schools and districts provide other materials (e.g. mats and pupil exercise books) meant that these classrooms were unusually well provisioned. Even within the pilot schools there were generally dramatic differences between the P1 (BTL) class and the other classrooms.

Participants were universally positive about the materials and methods, which they considered suitable. However, a number of individuals remarked that they thought the materials could be better aligned with local culture. When asked specifically about the materials, the majority of BTL teachers in both regions indicated that the materials were good. They cited clarity of instruction, well-sequenced lessons, language that is appropriate for the learners, and useful teacher's guides as positive features. The one weakness cited by the majority of BTL teachers was the relevance of some of the materials to the local culture. For example, scenes and words in the materials are not always familiar to the children and reflect more affluent Ghanaian society. An illustration of this is the use of "tea", "cups" and "saucers."

ASTEP. The primary method of implementation for ASTEP was intended to be training of tutors in TTCs, the results of which do not appear to have trickled down to P1 classrooms. This may be due in part to inadequate attention to the posting of ASTEP trained teachers to primary classes in key regions. There was also some suggestion that ASTEP training in TTCs focused more on the materials for mathematics and environmental science than on the materials for reading instruction. If this report is accurate, it is consistent with the observation made elsewhere that the disciplinary orientation of teacher training does not include literacy as a separate discipline as will be necessary to sustain and improve literacy education in Ghana.

The training provided to lower primary teachers in the Afram Plains represented a change in direction for the ASTEP project. Rather than train tutors in TTCs, they would attempt to provide in-service teacher training in the use of the ASTEP materials. However, teachers and district personnel alike cite insufficient training and limited monitoring as major barriers to implementation. The one major training session was, for a variety of reasons, attended primarily by P1-P3 teachers and lacked the participation of district personnel and head teachers. The combination of the lack of training for district personnel and head teachers, which resulted in a limited amount of monitoring, and the insufficient amount of training for teachers contributed to the minimal effectiveness of the implementation of the ASTEP program.

Other factors contributing to the apparent ineffectiveness of the ASTEP implementation include the fact, as noted by GTZ, that the distribution of the materials "got ahead" of the teacher preparation. Although materials were sent to every school, for a variety of reasons, they are not being used. Some schools may have abandoned them when the language policy was in question. More typically, though, it appeared that without trained personnel in the district, the materials arrived and head teachers or district personnel simply did not know what to do with them. We found many boxes in head teachers' offices – unopened or stacked in piles.

Finally, the ASTEP materials themselves may also be a contributing factor. Although they are clear in their theoretical perspective, they may not provide enough advice to permit novice teachers to implement a successful reading program (this issue is different for the other areas of mathematics and environmental studies). In addition, the ASTEP program does not come with ready-made TLMs such as those that are part of BTL. Rather, the ASTEP program provides guidelines for how teachers can develop supplementary materials through the use of materials available locally. This may be more sustainable in the long run, but not without sufficient training and monitoring. Despite the difficulties with the ASTEP materials, it must be noted that the pupil books, especially at P2 and P3, are the source of exceptional reading materials in mother tongue, including as they do local folktales and longer stories.

4.6 Sustainability

The issue of sustainability is a serious one. Although it is a bit early to speak with authority about the outcome, it is certainly possible to identify some near-term and long-term concerns.

Near-term Issues. Of immediate concern is the need to address three interrelated issues: (1) training – both quality and coordination; (2) integration of materials and methods; and (3) language of teaching and transition to English. Of course, the future success of BTL, or literacy instruction more broadly, is highly dependent on the quality of professional development that occurs. Molteno is experienced in training BTL teachers and supervisors and this expertise has allowed Ghana to begin an ambitious literacy initiative quite quickly. In a country with too few instructional or other reading materials and too few well-trained primary teachers, that is very good indeed. The highly structured nature of BTL and the Molteno training itself provides necessary structure and builds teacher confidence. It has clearly allowed/encouraged some teachers to teach much more comprehensively and adventurously than they have in the past, to the benefit of young pupils. The major aspect of the initial training that remains concerning is the provision of Stage 3 instruction during the 2004-2005 school year to last year's P1 pupils (as well as BTE), while at the same time implementing the full program to this year's P1 children.

The potential difficulty of this tactic is that it may lead teachers to depend too heavily on the particular materials/methods of BTL without fully appreciating the underlying principles and building on the approaches. Indeed, some head teachers and teachers remarked that the BTL approach was too constraining and limited creativity. Teachers must be helped to internalize the several key principles of BTL (see earlier sections) so that they can improvise when needed and also so that they can actually build on the approach to create an even more powerful literacy program (see recommendations below). If the training advances too rigidly or is conducted without accounting for local contexts, teachers will be tempted to abandon the program – or, more seriously for Ghana – be led to think that they cannot teach this way unless they have the specific and particular "BTL package." Since Ghana does not have the resources to outfit every school/classroom and then sustain the materials over time, the problem of

sustainability must not be linked to one specific set of materials. However, the general principles of BTL (building oral language competence in local dialect, using student-centered language and thought, creating cooperative learning communities, employing small-group instruction, and integrating reading-writing) are possible to employ without the particular BTL materials. Indeed, they should be. This leads to the further point: the need for integration of materials and methods.

Given the meager availability of TLMs in Ghana – in any language – any attempt to address the issues of literacy must include a pragmatic appeal to make use of everything possible. Despite the fact that classrooms generally have virtually no books in them, there are often books available in these schools. Either because educators do not know what to do with them or because of a misguided notion that they should be "preserved," they often lay unused. This is most discouraging with regard to the ASTEP materials. These are contemporary, attractive materials in Ghanaian languages depicting the Ghanaian culture(s). Simply suggesting that people take them out and use them is unlikely to work. A specific working group must be charged with aligning and integrating the BTL, BTE and ASTEP materials so that they are manageable and meaningfully coordinated. This is not as easy as it sounds. Especially at the earliest levels, different materials introduce somewhat different words and sounds. For beginning readers and writers, a lack of coordination can do more harm than good. Once children are "on the way," however, the more reading/writing materials are available the better.

The coordination of these various materials is important for another reason as well. Most experts feel that only one year of instruction in a local language is insufficient. Children are not likely either to gain sufficient mastery of literacy in their own language to transition well into English, or to have expanded their linguistic expertise in L1 sufficiently to drive forward their overall cognitive development. Ideally, children would continue instruction in L1 right through the first 5-6 years of schooling, with this instruction including literacy instruction in L1. We have made specific recommendations about this issue in a later section. For our present purposes, it should be noted that sustainability will require that teachers have a clear idea what is expected of them with regard to teaching children to read and write in L1. Failure to do this will likely result in the sort of deflated pupil performance evident in the Eastern Region "pilots/nonpilots." As well, teachers need a clear idea of how to integrate the various approaches and materials available to them. A common training, which incorporates and expands upon the underlying principles of language experience and communicative, meaning -based approaches of BTL and ASTEP is a definite possibility. Teachers working with both approaches need to understand more about how to encourage, recognize and extend emergent writing development, the importance of teachers being reading and writing role models, regular reading aloud sessions and the part reading for enjoyment plays. If ASTEP is to be useful, the training must be more intensive and intentional. If these materials are to be used in concert with other approaches, than this needs to be planned and delivered.

Long-term Issues. We have chosen to address two other major issues as long-term concerns. Although they are visible today, they are part of a much larger challenge to the well being of Ghana's educational enterprise. First, is the matter of ongoing cost and funding for education. Second, is the nature of teacher training and monitoring and the matter of accountability and "motivation."

Education is gravely under funded and under supported in Ghana. Although the cost of BTL appears large, its cost appears much greater than it is because so little is spent on anything else. In the "deprived regions" observed for this evaluation, instructional materials are almost non-existent and classes are too large. Teachers are not well prepared or are not available at all. Local communities have no long tradition of organizing to support education and the lack of written language materials means that schooling occupies a modest place in the priorities of many communities. Consequently, even highly motivated pupils may not receive the type of education that prepares them to go on to higher education and, if they could, it may not be possible because remote locations make middle-level education a challenge (pupils who make it to secondary school can often attend residential schools). It is well beyond the reach of this report to address all of these concerns. Clearly, international aid organizations have made a greater attempt in recent times to build capacity at the local and federal level. However, it is important that GES officials, international "donors" and the federal government more generally attend to needs at the basic education level. Dollars spent on secondary education are, of course, important.

However, too few people are aware of the importance (and difficulty) of teaching young children well. They must have books and paper and smaller classes.

The problem of teacher retention is equally critical. The present system of postings does not appear to be sensitive enough to placing teachers who are proficient in the local dialect in the appropriate communities. Even when they have been placed appropriately, many basic education teachers do not stay. Once they receive more formal education, teachers do not return to teaching in P1 or P2. This can and should be addressed by examining the reward system and the working conditions for these individuals. At the same time, good in-service training may be necessary in the short term in order to put capable and caring individuals in remote schools. Resources must also be allocated for the close monitoring and support of teachers. If all teachers are not held accountable for children's learning, then the few who take this seriously will be discouraged. One of the more challenging aspects of BTL is that the initiative as designed for implementation in Ghana appears to rest on the assumption that all children need is a good start in P1 and P2. The idea, it would appear, is that this good start will send children into the upper grades ready for success. Work in the United States certainly suggests that this is unlikely to be enough (see Lipson et al, 2004; Mosenthal et al., 2004). A serious question for teachers and districts alike is this one: What will the P3, P4, P5, and P6 teachers be doing to enhance their own teaching so that the good start enjoyed in BTL/BTE and ASTEP classrooms will continue?

Finally, there needs to be an increased awareness of the importance of early literacy instruction, the need for training teachers for these areas directly, and for developing a knowledge and expertise related to literacy per se (as separate from language acquisition and study). The TTCs and Universities can play a crucial role here. Individuals who understand how people learn to read and write and who understand these processes are needed. In addition, the TTCs and universities should explore the possibility of offering credit for teachers who receive BTL training, which might act as an incentive for some.

4.7 Summary of Findings

We begin our summary of findings with a review of the results of pupil assessments and then review the findings with regard to attitudes, support, teaching/learning environment, effectiveness of implementation/suitability, and sustainability.

Pupil Performance. To provide an indication of overall literacy achievement, scores on the subtests were combined into three aggregate scores that reflect different "stages" of literacy development. The first aggregate score is comprised of three Emergent Literacy Indicators—Name Writing, Alphabet Writing, and Concepts of Print. The second aggregate score is comprised of two subtests measuring Word and Sound abilities—Word Writing and Word Recognition. The third aggregate score is comprised of the Oral Reading and Comprehension subtests. As would be expected, pupils performed best on the Emergent Literacy Indicators, less well on the Word and Sound Indicators, and not very well at all on the Oral Reading and Comprehension Indicators.

There were also fairly consistent patterns of performance across regions and between pilot and non-pilot BTL schools. In general, pupils in the BTL pilot and non-pilot schools outperformed pupils in the implementing and non-implementing ASTEP schools in the Eastern region. In addition, the impact of the programs was more apparent in the differences between the BTL pilot and non-pilot schools than in the difference between the ASTEP implementing and non-implementing schools. Given that the ultimate goal of the pilot programs is for primary pupils to read running text with comprehension, the results of the Oral Reading and Comprehension Indicators are of particular importance. This evaluation suggests that although only 40 of 216 pupils were able to score on these subtests, virtually all of those who could read and comprehend grade-appropriate texts were in the pilot schools. Roughly 38% and 53% of children in pilot schools in the Northern and Volta regions respectively were able to do at least some reading with comprehension. While the numbers are not as large as we might like, this is an encouraging start given that the pilots were not implemented until mid-year.

Finally, it is important to note that there was considerable variation within groups and regions. The between-school differences in the Eastern region are especially notable and not entirely explicable by

self-reported implementation. What is clear is that some schools and teachers (even within the same district and general socio-economic conditions) are doing much better than others. Although not quite so dramatic, there are, nevertheless, similar between-school differences in the Northern and Volta Regions among the BTL schools also. Clearly the most noticeable differences are between pilot and non-pilot schools, but even among the pilot schools there are some that are doing quite a bit better than others.

Attitudes and Support. Generally, everyone we talked with or who filled out a questionnaire (district personnel, head teachers, P1 teachers, parents and community members) expressed enthusiasm for the pilot programs. They agreed that these programs were far better than the traditional approach and that they should be expanded to include more Ghanaian languages and schools. District personnel agreed that the programs were suitable and relevant because they resulted in improved teaching and learning of the Ghanaian language, attitudinal changes on the part of pupils and teachers in the form of punctuality, regular attendance and increased enrollment in P1 along with more active participation of pupils in lessons. The majority of head teachers across BTL and ASTEP schools indicated that the program is suitable and relevant because it engages the pupils and improves their learning, gives them a positive attitude toward reading and confidence in their ability to learn, and it has increased parent interest in their children's schooling. Teachers noted that the programs are child-centred, encourage active participation of pupils, and improve reading and writing in Ghanaian languages. In addition, both BTL and ASTEP teachers indicated that as a result of the programs they enjoy teaching more, feel they are better teachers, teach differently than before, and that the children enjoy class more. In general, parents and community members thought the programs were suitable primarily because they liked the emphasis on the local language. At the same time, they acknowledged the importance of learning to read and write English, because it is an international/national language and it is used for examinations.

In general, everyone we spoke with or who filled out a questionnaire indicated that they wanted to find ways to be supportive of the pilot programs. Those that had not already provided support indicated that it was either because they were not aware of the program or how they might be supportive, and/or they did not have the resources necessary to provide the desired support. It is noteworthy that virtually all of the BTL pilot school communities reported providing supports that were specific to the needs of the program. In addition to parents and PTAs purchasing mats and exercise books, some PTAs provided free lunch to the P1 teacher, worked a P1 teacher's farm for her, and raised funds for a P1 teacher as compensation for the extra work being done.

Teaching/Learning Environment. A significant majority of BTL pilot and non-pilot teachers were trained, while only a third of the ASTEP teachers were trained. While all of the BTL pilot teachers indicated they knew a lot about the program, only 2 of the 11 ASTEP teachers reported this level of knowledge and one of those was in a non-implementing school. In general, there was strong evidence of the impact on the program on the classroom environment in the BTL pilot classrooms. In contrast, the BTL non-pilot classrooms and the ASTEP classrooms reflected a more traditional environment, and there was little difference between the implementing and non-implementing ASTEP classrooms. Although the ASTEP classrooms looked more like the BTL non-pilot classrooms than the BTL pilot classrooms, there was some trend toward practices more in keeping with the principles of the pilot programs.

Effectiveness of Implementation and Suitability. Although the evaluation suggests that everyone associated with the pilot programs indicated that the materials are suitable, it also reveals important differences in the effectiveness of the implementation of the two pilot programs. The implementation of BTL appears to have been unusually effective. The combination of ongoing training and monitoring influenced teaching and learning positively in all classes/schools. The availability of many teaching-learning materials (TLMs) also enhanced the program's effectiveness. When asked specifically about the materials, the majority of BTL teachers in both regions indicated that the materials were good. They cited clarity of instruction, well-sequenced lessons, language that is appropriate for the learners, and useful teacher's guides as positive features. The one weakness cited by the majority of BTL teachers was the relevance of some of the materials to the local culture.

The implementation of ASTEP does not appear to have been as effective as that of BTL. The primary method of implementation was the training of tutors in TTCs, the results of which do not appear to have

trickled down to P1 classrooms in the manner intended in part because few teachers trained in the ASTEP program appear to have been placed in key regions. In addition, the training of the teachers in the Afram Plains does not appear to have had the same positive impact on instruction as did the training of BTL teachers. Possible reasons for this include the ambivalence of teachers in this region about using the local language as the medium of instruction, and/or the lack training for head teachers and district personnel, which contributed to a lack of monitoring. Another contributing factor may be the materials themselves. Although the materials are clear in their theoretical perspective, they may not provide enough advice to permit novice teachers to implement a successful reading program (this issue is different for the other areas of mathematics and environmental studies). However, it should be noted that the pupil books, especially at P2 and P3, are the source of exceptional reading materials in mother tongue, including as they do local folktales and longer stories.

Sustainability. There are both near term and long-term concerns associated with the issue of sustainability. Of immediate concern is the need to address three interrelated issues: (1) training – both quality and coordination; (2) integration of materials and methods; and (3) language of teaching and transition to English. Of course, the future success of BTL, or literacy instruction more broadly, is highly dependent on the quality of professional development that occurs. Molteno is experienced in training BTL teachers and supervisors and this expertise has allowed Ghana to begin an ambitious literacy initiative quite quickly. The remaining aspect of the initial training that is of concern is the provision of Stage 3 instruction to last year's P1 pupils during the 2004-2005 school year (as well as BTE), while at the same time implementing the full program to this year's P1 children.

The potential difficulty of reliance on a highly structured, pre-packaged program such as Molteno offers is that it may lead teachers to depend too heavily on the particular materials/methods of this program without fully appreciating the underlying principles and building on the approaches. If the training advances too rigidly or is conducted without accounting for local contexts, teachers will be tempted to abandon the program – or, more seriously for Ghana – be led to think that they cannot teach this way unless they have the specific and particular "BTL package." Since Ghana does not have the resources to outfit every school/classroom and then sustain the materials over time, the sustainability must not be linked to one specific set of materials.

Given the meager availability of TLMs in Ghana – in any language – any attempt to address the issues of literacy must include a pragmatic appeal to make use of everything possible. In particular, ASTEP materials, which are contemporary, attractive, and sensitive to local culture and language, need to be put to better use. The coordination of BTL and ASTEP materials is also important to address the concerns of most experts that only one year of instruction in a local language is insufficient either to gain mastery of literacy in the home language or to transition well into English. A common training that incorporates and expands upon the underlying principles of language experience and communicative, meaning -based approaches of BTL and ASTEP has the potential to address these concerns. However, this will require a specific working group charged with aligning and integrating the BTL, BTE and ASTEP materials so that they are manageable and meaningfully coordinated.

The long-term issues of sustainability include the ongoing cost and funding for education, the nature of teacher training and monitoring, and the matter of accountability and "motivation." Education is gravely under funded and under supported in Ghana. Although the cost of BTL appears large, its cost appears much greater than it is because so little is spent on basic education. It is important that MOEYS/GES officials, international "donors" and the federal government more generally attend to needs at the basic education level. Dollars spent on secondary education are, of course, important. However, too few people are aware of the importance (and difficulty) of teaching young children well and the resources this demands.

The problem of teacher retention is equally critical. The present system of postings does not appear to be sensitive enough to placing teachers who are proficient in the local dialect in the appropriate communities. However, even when they have been placed appropriately, once they receive more formal education, teachers do not stay in basic education. This can and should be addressed by examining the reward system and the working conditions for these individuals. Resources must also be allocated for the

close monitoring and support of teachers. Finally, there needs to be an increased awareness of the importance of early literacy instruction, the need for training teachers for these areas directly, and for developing a knowledge and expertise related to literacy per se (as separate from language acquisition and study) particularly at the level of the TTCs and Universities.

5.0 RECOMMENDATIONS

5.1 Planned Expansion of BTL

The evidence from pupil performance data, classroom observations, and interviews with key stakeholders indicates that BTL is working. However, there are reasons for concern. First, the methodology is not as powerful as it could and should be. We are concerned that children are not writing enough, for example. Right from the beginning, children should be encouraged to experiment with print. As it stands now, children do not write at all until Stage 2 and, even within that stage, they create words and sentences within fairly narrow confines. There is no opportunity for "developmental or "invented" spelling – the type of student exploration that promotes good phonics knowledge and skill. Similarly, children (and their teachers) are not creating enough text. Chart stories, functional writing (e.g. lists), or accounts of real-life events are not at all evident in the BTL classrooms. This type of jointly-created texts common in many language-experience classrooms should be promoted so that children can be reading familiar chants or songs from/in the local languages. While we often saw/heard children reciting and singing material in English (often with no understanding at all of what was being performed), we only rarely experienced these things in mother tongue.

Teachers and their supervisors should also capitalize on the methodology in ways that expand the BTL approach. Although the program materials include very useful descriptions of classroom-based assessment opportunities, we saw little evidence that teachers were engaged in on-going assessment and even less evidence that they were using this information to shape instruction. It is understandable that teachers would stick closely to more scripted methods in the early days of a new methodology. However, it will be essential for them to move beyond routinized actions to more fully-developed teaching strategies if their pupils are really going to learn to read and write. For example, teachers might use the results of their assessment to assign some children to read (or reread) stories at their benches while others might be reading different material(s). A proposed program between the International Reading Association and UNESCO may provide support for training in this area.

The BTL program might also expand by creating opportunities for more print materials to be used with the children. While this may be challenging given the limited materials, some Ghanaian educators are already conducting workshops that show teachers how to create little readers using local materials. At the same time, the ASTEP materials provide excellent read aloud material. Similarly, the ASTEP training enables teachers to create supplementary materials from items found locally. It would be helpful if the Molteno trainers and the teachers themselves could gain a good deal of clarity about how and when to use the little readers. Right now, these are gravely under-used. The ASTEP 'Theoretical Framework' section of the Teachers Guide in fact contains information that could well be offered to all teacher trainers and teachers, and built upon in order for them to understand the need for emergent writing and regular reading of storybooks.

Finally, district leaders and GES personnel should consider developing a plan for effective reading/writing instruction. While BTL can/should be a component of the literacy instruction, it need not be viewed as the entire program. A simple plan should be laid out that conveys to teachers the types of activities that should occur every day. For example, everyday literacy instruction should include:

- Teacher read aloud to the children
- Teacher and children compose and teacher writes for children
- Children writing
- Word work
- Children reading (beyond the word level)

The ASTEP training is actually designed to help teachers create "self-assisted learners" – to help teachers make good instructional decisions. Hence, it would be useful to look carefully at the reading materials in planning for long-range literacy programming.

5.2 Continue L1 Instruction Beyond P1

There is quite a broad consensus among experts and those we spoke with in this evaluation that one year of BTL alone will not be enough L1 instruction. A sensible pedagogical proposal is to continue L1 instruction in P2 and P3, alongside the introduction of English as an additional language through BTE. Educators need to think about and plan for a coherent P1-P3 overall plan for literacy/biliteracy. The mistake of introducing literacy in a foreign language from P1 has been recognized in other African countries that are now supporting mother tongue literacy at least from P1 – P3 (e.g., Namibia, Malawi). There is absolutely no research evidence that suggests simply starting children out "right" with a year (or even two) of good instruction in the mother tongue is going to be enough to ensure that large numbers of children will be reading with comprehension in an L2 or L3 in grade 6. This is particularly the case in countries like Ghana, where teachers themselves are often not fluent speakers of English. At a policy level, and at the level of parent and community involvement, discussions need to move away from the '*either mother tongue or English'* option, to one, which provides information about the benefits of *both mother tongue and English.*

5.3 Develop plan for coordination of BTL and ASTEP in P1-P3

We are making the strongest recommendation that GES, USAID, GTZ and their other partners (see next recommendation) allocate resources to develop a specific plan for and recommendations about the alignment of BTL and ASTEP. A general outline *might include* something like the following:

- Combine the two theoretical frameworks of BTL and ASTEP for orientation training.
- Use BTL in P1, combining it with P1 ASTEP near the end of the year and/or with accelerated learners.
- Use ASTEP in P2 for L1 literacy learning and BTE to transition to English.
- Use ASTEP in P3 and English literacy instruction (the specifics of P3 English literacy instruction should be developed and materials specified).
- In P1-P3 use ASTEP math and environmental sciences materials to expand the amount of text reading children have available to them in L1.
- Train District Circuit Supervisors and head teachers in how to coordinate BTL and ASTEP in P2 and P3.

These guidelines are suggestions only. As individuals carefully examine all of the materials and think about the specific teaching/learning challenges in Ghana, they may arrive at slightly different conclusions. What must happen, however, is the development of a detailed set of directions for how/when to use the ASTEP materials in conjunction with the BTL materials and approach.

5.4 Develop Capacity for Sustaining Literacy Achievement

Throughout Ghana there is a need for greater expertise in the area of literacy. We recommend that the GES, USAID and other interested partners, such as the GTZ continue to collaborate with the International Reading Association to develop more knowledge about reading and writing. One such project that holds immediate promise is an IRA-UNESCO project focused on classroom assessment of literacy. It would be useful to explore ways to coordinate with the BTL projects that are, or are about to be, underway.

Parents and community members who attended focus-group meetings were almost universally enthusiastic about having children learn to read and write in the local language. At the local level, USAID and GES have plans to build capacity with the communities. This will be crucial. District personnel, head teachers, and P1-P3 teachers should be encouraged to invite PTAs and SMCs to participate more fully. As we have seen, some innovative and creative local solutions to problems have already been initiated. More of these local solutions are needed.

5.5 Closely Monitor and Assess the Programs

Finally, there is a need for close monitoring, assessment, and adjustments of the programs. Next year, in particular, there should be very close monitoring during the first months of school to ensure that P2 pupils are completing Stage 3 of BTL (which was not completed during this abbreviated pilot year). This Stage 3 is critically important to the consolidation of early literacy learning and pivotal to the program's success.

The engagement of district-level supervisors was critical in the pilot year and all indications are that this continued investment on the part of the district is required if teachers are to implement the BTL program with fidelity. As the program unfolds and begins to use a TOT (training of trainers) model it will be especially important to monitor the trainers' knowledge and expertise. Not all trainers are equally well equipped to support P1 and P2 teachers. In addition, our observations suggest that the Molteno training, while thoroughly preparing individuals to follow the implementation guidelines, does not necessarily provide participants with a deep understanding of the rationale behind these methods. Importantly, many of these new trainers will not be experienced teachers of young children and may not themselves understand literacy development. Hence, it will be difficult for them to anticipate the types of problems that teachers will encounter or to help them think flexibly to solve them. The regimented nature of the training and the suitability of the approach in the Ghanaian context should continue to be a matter of investigation.

In the same way, the role of the TTCs in preparing teachers for P1-P3 should be closely monitored. We recommend that ASTEP materials and approaches continue to be used, and that thought be given to a pre service program approach that broadens to incorporate both ASTEP and BTL orientation as complimentary and overlapping aspects of teaching reading and writing. In addition, the TTCs and universities should explore the possibility of offering credit for teachers who receive in-service BTL training, which might act as an incentive for some.

The present evaluation project incorporated assessments that had been undertaken in other African countries. It provides one of the most comprehensive assessment approaches yet undertaken and provides exceptional baseline information for the years to come. We have detailed notes about the ways in which the assessment protocol must be improved in the future and a prototype should be developed as soon as possible to avoid the problems associated with last-minute production. As well, a protocol and prototype assessment battery should be designed for data collection at the end of P2. The evaluation plan for 2005 should continue to track pupils' literacy development in L1 but also their ability to read and write in English.

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