Basic Literacy and Numeracy Baseline Assessment of Grades 1, 2 and 3 Students in Benshangul Gumuz Region

(Second Draft)

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1 Introduction

In preschool through third grade, schools must attend, first and for most, to the crucial mission of early education: teaching children to read. The goal of quality education is to facilitate optimal cognitive development of the pupil through schooling (UNESCO 2005). Research demonstrates that there is a continuum of interrelated connections between language and cognition, moving from the development of 'social language proficiency' to 'academic language proficiency' and then to academic achievement. It is essential to ensure that the language education policy and its implementation take students along this continuum.

Language education policy, particularly in regard to the medium of instruction in primary education, is a key factor which can either facilitate and optimize access to the content of the curriculum or block learning, preventing both access and equity. The history of language education policy and practice in Africa has been a troubled one, but recent years have seen a series of studies that offer valuable new insights to assist policy makers and officials charged with implementation. Ethiopia has a particularly interesting and instructive history of language education, one which offers some extremely positive examples along with other less positive ones for other multilingual countries to consider.

Languages are used in a wide range of contexts in Ethiopia. There are significantly large Ethiopian languages as well as numerous smaller languages. For historical reasons, Amharic plays a role as the sometimes contested yet functional lingua franca of the country. English is highly prized as a language which may offer access to higher education and international opportunity; however, it is foreign to most, and is known and used only by a small minority of the educated economic and/or political elite. The practical diffusion of English in Ethiopia is limited to fewer functional domains than in many other African countries where the language enjoys similarly high status, aspirational value and use.

The current language education policy, which has been in place since 1994, accords high practical status to the mother tongue as medium of instruction, particularly at the primary level; transition to English at Grades 5, 7, or 9 depending upon the region; and the learning of Amharic as a subject by speakers of languages other than Amharic. The policy for most students, therefore, is trilingual (also known as multilingual) based on the mother tongue, Amharic as a national language, and English as an international language. The findings of contemporary research support extended educational use of the mother tongue, and the addition of other languages through bi- or trilingual policies. This means that Ethiopian

language education policy falls broadly within the parameters of “best policy” in terms of multilingual developing countries. However, as is the case in many other countries, implementation is not always aligned with actual policy. There are always special circumstances, attitudes and other impediments which need to be identified and dealt with in order for policy to work efficiently and get the best return on investment. One of these is clearly the issue of how English can be used effectively alongside Ethiopian languages to support good teaching and learning of the curriculum.

Literacy is the ability to read, write, speak and listen to language in a way that allows people to communicate with each other and to make sense of the world around them and numeracy is the ability to use mathematics effectively to meet the general demands of day-to-day life at home, at work and in society generally. It helps us to learn and make sense of the world around us. Hence literacy and numeracy are not subjects per se; rather they are foundation skills that students use in all subjects. If students do not possess these basic literacy and numeracy skills, then they are less likely to experience success in other subject areas.

Literacy and Numeracy achievement is considered the best predictor of student achievement in other subjects. If students have not developed literacy and numeracy skills considered typical for their phase of development, it is less likely that they will be able to experience success in other learning areas.

This Literacy and Numeracy Baseline Study was conducted in January 2011 in Benshangul Gumuz Region at Grades 1, 2 and 3. The main purpose of the study was to establish a baseline data for future comparisons in schools which are currently using mother tongue as a medium of instruction. A sample of students from selected schools took tests in reading, numeracy and writing administered on one to one basis.

1.1 Background

Reading is the foundation to other learning activities in the classroom. The point of reading is comprehension; and the point of comprehension is learning. Children who fail to learn to read in the first few grades of school are handicapped in later grades as they must absorb increasing amounts of instructional content in print form. Poor readers cannot develop proper writing skills and become self-guided learners in other subject areas. The basic reading skills necessary to become “literate” do not develop naturally; we have to learn to adapt the part of our brain that recognizes images to be able to recognize written letters and words (Wolf, 2007). As has

been confirmed by scholars working to understand reading acquisition in multiple languages (Jimenez and O'Shanahan Juan, 2008; Linan-Thompson and Vaughn, 2007; Abadzi, 2006; Sprenger-Charolles, 2003; Chiappe et al., 2002), in almost any alphabetic language in which print can be decoded into sounds, being able to read well requires a grasp of five basic skills (National Reading Panel, 2000):

- phonemic awareness: focusing on, manipulating, breaking apart, and putting together sounds orally;
- phonics: linking written letters to their sounds and forming spelling patterns;
- fluency: achieving speed, accuracy, and expression in reading;
- vocabulary: knowing words (both oral and written) and their meaning; and
- comprehension: understanding the concepts read or heard.

All children can, and should, learn to read within the first few years of schooling. No two children will develop their reading skills in exactly the same way, in the same time frame, but all readers will progress through a series of phases in their reading development, some simultaneously.

The greatest gift we can give to children is education. An important part of a well-balanced education is for children to be able to read, write and understand basic mathematics. Test scores provide one important measure of how well the curriculum is being learned, and help to indicate achievement at the main exit points of the school system. Teachers, schools and national governments have long gathered information on pupils' performance. Teachers and schools use assessment data to monitor pupil progress, identify pupils with difficulties (and suggest appropriate responses), and even to motivate pupil learning. Although these types of assessment are quite varied in form and function, they are used primarily to provide information on individual performance. National governments may also assess educational outcomes (what has been learned) through examinations. Learning assessments allow the objective measurement of performance at system-level. Although there are many benefits to such type of data, some are of particular relevance. Greaney and Kellaghan (1996) identified eight main uses for such data: *informing policy, monitoring standards, identifying correlates of achievement, introducing realistic standards, promoting accountability, increasing public awareness, directing teachers' efforts and raising pupil achievement,* and *informing political debate*.

Concern for educational change and improving its quality has been the focus of educational planners for years. However, the World Declaration on Education for All (EFA) in Jomtien, Thailand (1990) is considered to have uncovered much of the dire necessity of learning assessment. The Education for All declaration gave not only fresh impetus to issues related to assessment but also made clear that there has to be a new form of assessment: system assessment, or national assessment, in order to determine whether children were acquiring the essential knowledge, reasoning ability, skills, and values that schools have promised to deliver. In other words, the basis for learning assessment is a response to both the desirable learning behavior to take place and ensuring schools' accountability to their stakeholders (the state, the parents, etc) (Kellaghan and Greaney, 2004).

Kellaghan and Greaney (2001) also revealed that one of the most influential statements of concern for learning outcomes is contained in the declaration adopted by the World Conference on Education for All. It emphasizes that the provision of basic education for all was meaningful only if children could acquire useful behavioural skills and values. To this end, Article 4 of the World Declaration on Education for All (1990) stated that focus of basic education should be "on actual learning acquisition and outcome, rather than exclusively upon enrolment, continued participation in organized programmes and completion of certification requirements". Similarly, after a 10-year follow-up to Jomtien declaration, the Dakar Conference (2000) stressed the importance of having "a clear definition and accurate assessment of learning outcomes (knowledge, skills, attitudes, and values)" as governments need to ensure basic education of quality for all, for their citizens (UNESCO, 2000).

The focus on learning has been progressively shifting from input to outcomes in view of learning achievement. Past educational reforms mainly used to emphasize educational structure, curriculum and teacher training, in a view to realize quality. But this trend began to give way to issues related to the improvement of learning achievement, school effectiveness, management and accountability. Consequently, decentralization, school-based management and learning assessment became the area of focus in the efforts related to educational reforms of the 1990s. In the view of Kellaghan and Greaney (2001), global economic competition has resulted in the critical importance of quality human resources, and the demand for new competencies in the modern information society. All of these demands have therefore, made the educational system, schools, and individual students to be under increasing pressure to

perform and work hard. In short, assessing students' learning achievements has instigated due attention and a necessary focus to be made for the former.

The emergence of learning assessment is believed to come up with an objective appraisal system of a given education system before arriving at sound judgment. It is also important to note that one of the modern assessment procedures focus on outcomes. Kellaghan and Greaney argue that unlike past assessments which focus on inputs (e.g. physical facilities, curriculum materials, books, and teacher training) to determine the quality of education, this is no longer the case. Today, the dominant question posed by many stakeholders, including policymakers, has become on the outcomes of education: whether students are acquiring the desired knowledge, skills, behavior, and attitudes. As a result, policymakers or educational managers need information that would be necessary to reach informed judgment as related to the adequacy of student achievements obtained in the system. They may also need baseline data on student achievement against which to measure progress or excellence being registered in the educational program. In the meantime, teachers may need similar information on the achievement of their students in order to make some form of comparisons and assess their own professional effectiveness.

1.2 Objective

The main purpose of the study was to collect a baseline data in Grades 1 to 3 in three languages currently implemented as medium of instruction with the support of SIL. The specific objectives were:

- determining the level of achievement in reading in Grades 1 to 3 students,
- determining the level of achievement in numeracy in Grades 1 to 3 students,
- determining the level of achievement in writing in Grades 1, 2 and 3 students,
- compare the performance of the students thought in their mother tongue with those thought in Amharic and
- identify the possible factors that affect the achievement levels.

2 Design and Methodology

2.1 The Participants

The target populations of the study were Grades 1, 2, 3 students currently using their mother tongue in Benshangul Gumuz region. The three languages are Berta, Gumuz, and Shinasha. Three schools from each language group were selected and 20 students from each grade level responded to the tests and questionnaires. Teachers and directors also filled questionnaires. For the purpose of comparison an equivalent number of students to each language group were taken from those students who are not learning in their mother tongue.

2.2 Instruments

The data collecting instruments were reading, numeracy, and writing tests meant to measure basic literacy and numeracy skills at each grade level. The tasks measuring basic literacy and numeracy skills in each case were incremental in their complexity. Each task was presented to the child on one to one basis. Questionnaires were also administered to the students, the teachers and directors of the sample schools.

The tests were developed by making thorough analysis of the teaching materials prepared to each language group. A team of practicing teachers selected from each language received training on how to develop the tests in Addis Ababa at SIL Office. Under the close follow up and guidance of the Assessment Specialist they developed the instruments.

The instruments were field tested in six selected schools, two for each language group. Two consultants, SIL staff and practicing teachers field tested the instruments. Based on the findings of the pilot tests the tests were substantially revised. Initially only reading and numeracy tests were developed but later on writing test was added. Beside with field testing the instruments, classroom observations and discussions about the teaching learning process in general and implementation of the mother tongue education were made with the teachers and the director of each school. The fieldtrip gave us the opportunity to get firsthand experience on what is going with in the school where the pilot project has been implemented.

2.2.1 Reading

The literacy part was composed of reading and writing tasks. The reading task started with letter identification followed by reading words, sentences and a passage. Those who were able to read the passage were asked comprehension questions.

2.2.2 Writing

The writing test started with copying letters and words, followed by writing captions for selected diagrams. Those at a higher level were also asked to write sentences and dictation.

2.2.3 Numeracy

The numeracy part started with recognizing numbers of one, two and/or three digits. This was followed by asking simple addition and subtraction operations. Those who were able to add and subtract were presented simple tasks of multiplication and division. Aside to the abstract completion of numbers they were also asked to solve simple word problems.

2.2.4 Questionnaires

The questionnaires were administered to students, teachers and the director. Each student was interviewed separately while the questionnaires for teachers and directors were self-administered. The items were composed of background questions, parental background, attitude towards learning and perceptions.

3 Results and Discussion

3.1 Reading

Reading is often thought of as a hierarchy of skills, from processing of individual letters and their associated sounds to word recognition to text-processing competencies. Skilled comprehension requires fluid articulation of all these processes, beginning with the sounding out and recognition of individual words to the understanding of sentences in paragraphs as part of much longer texts. There is instruction at all of these levels that can be carried out so as to increase student understanding of what is read.

If reading came naturally, teaching reading would be a much easier job. Children would learn to read as readily as they learn to speak. Teachers would only need to give students the chance to practice their skills. But children don't learn to read just from being exposed to books. Reading must be taught. For many children, reading must be taught explicitly and systematically, one small step at a time. That's why good teachers are so important.

Although children go through a series of predictable steps on their journey to becoming readers, many things can derail them, such as having inadequate exposure to language at home or having a learning disability. Teachers who know the art and science of teaching reading, though, are able to provide skillful, effective reading instruction, and can help students who need it overcome obstacles to becoming readers.

3.1.1 Reading Levels by Grade

The reading test was composed of five parts: identifying letters, word reading, sentence reading, story reading and comprehension. A total of 1,114 students took the reading test and out of this 38.9% were unable to identify letters and only 4% were at the story level. In Grade One, 47.8% were unable to identify a letter while 15.8% were at word level. In Grade Two, 35.4% were unable to identify a letter and 20.7% were at word level. In Grade Three, 32.5% were unable to identify letters, 15.5% were at word level, 6.2% were at story level and 18.4% were able to give a correct answer for at least one comprehension question (Table 1).

Table 1.Reading Levels by Grade

Grade	Nothing	Letter	Word	Sentence	Story	Comp.	N
One	188 47.8%	100 25.4%	62 15.8%	33 8.4%	-	-	393
Two	130 35.4%	68 18.5%	76 20.7%	43 11.7%	20 5.4%	30 8.2%	367
Three	115 32.5%	55 15.5%	45 12.7%	52 14.7%	22 6.2%	65 18.4%	354
All	**433** **38.9%**	**223** **20.0%**	**183** **16.4%**	**128** **11.5%**	**45** **4.0%**	**102** **9.2%**	**1114**

Reading level was further cross-tabulated by grade and test language. Table 2 shows that at Grade 3 from those tested in Amharic and Bertha languages over 40 % of the students were unable to identify letters while only 12.1% and 5% were at story level respectively.

Table 2.Reading Levels by Grade and Language

Grade	Language	Nothing	Letter	Word	Sentence	Story	Comp.
1	Amharic	58.5%	23.3%	7.8%	6.7%	1.6%	2.1%
	Bertha	65.0%	18.3%	16.7%			
	Gumuz	6.7%	45.0%	23.3%	23.3%		1.7%
	Shinasha	40.0%	21.3%	28.8%	7.5%		2.5%
2	Amharic	38.9%	23.4%	17.4%	9.0%	5.4%	6.0%
	Bertha	75.0%	18.3%	5.0%			1.7%
	Gumuz	3.3%	6.7%	50.0%	25.0%	8.3%	6.7%
	Shinasha	22.5%	17.5%	17.5%	16.3%	7.5%	18.8%
3	Amharic	41.4%	15.5%	10.9%	12.1%	7.5%	12.6%
	Bertha	43.3%	35.0%	11.7%	5.0%		5.0%
	Gumuz		5.0%	15.0%	27.5%	15.0%	37.5%
	Shinasha	21.3%	6.3%	16.3%	21.3%	3.8%	31.3%

3.1.2 Reading Levels by Sex

Table 3 and Figure 1 show comparison between boys and girls of the reading tasks. There are more girls (45.8%) who cannot identify letters than boys (33.1%) while there are more boys than girls who are at sentence, story and comprehension levels.

Table 3. Reading Levels by Sex

Sex	Nothing	Letter	Word	Sentence	Story	Comp.	N
Female	231 45.8%	111 22.0%	69 13.7%	51 10.1%	13 2.6%	29 5.8%	504
Male	202 33.1%	112 18.4%	114 18.7%	77 12.6%	32 5.2%	73 12.0%	610
Total	**433 38.9%**	**223 20.0%**	**183 16.4%**	**128 11.5%**	**45 4.0%**	**102 9.2%**	**1114**

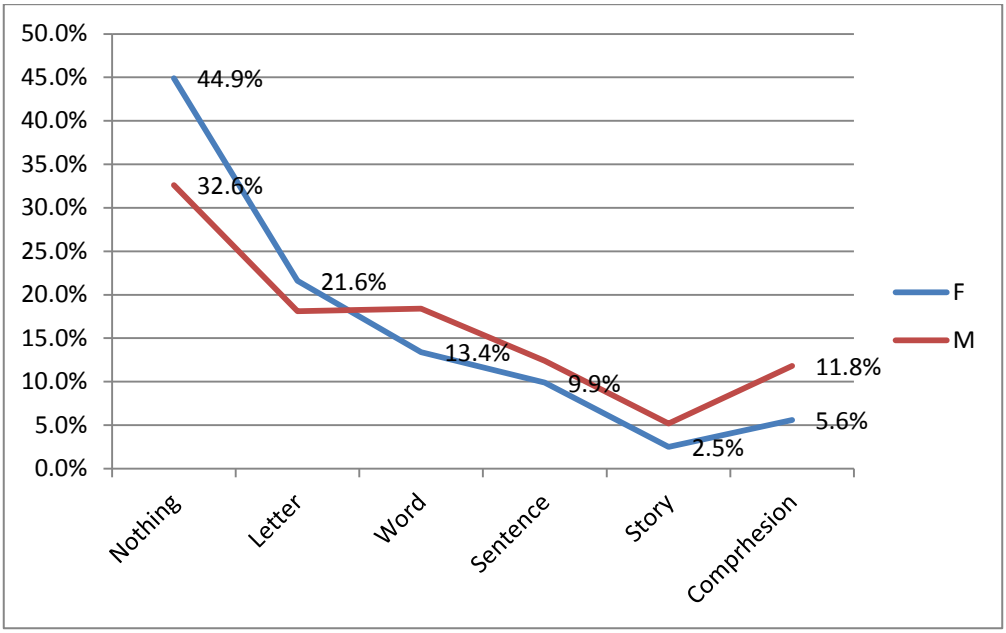

Figure 1. Reading Levels by Sex

Table 4 shows cross-tabulation of reading levels by grade and sex. In each grade level there were more girls who were unable to identify letters than girls. On the other hand there were more boys than girls at story and comprehension levels.

Table 4. Reading Levels by Grade and Sex

Grade	Sex	Nothing	Letter	Word	Sentence	Story	Comp
1	F	57.1%	22.0%	13.6%	6.2%	.0%	1.1%
	M	40.3%	28.2%	17.6%	10.2%	1.4%	2.3%
2	F	38.1%	22.0%	17.3%	11.9%	3.0%	7.7%
	M	33.2%	15.6%	23.6%	11.6%	7.5%	8.5%
3	F	41.9%	21.9%	10.0%	12.5%	5.0%	8.8%
	M	24.7%	10.3%	14.9%	16.5%	7.2%	26.3%

3.1.3 Reading Levels by Language of Instruction

Figure 2compares those thought in their mother tongue with those thought in Amharic. From those whose medium of instruction was Amharic 46.8% were unable to identify letters and from those who were thought by their mother tongues 31.6% were unable to identify letters.

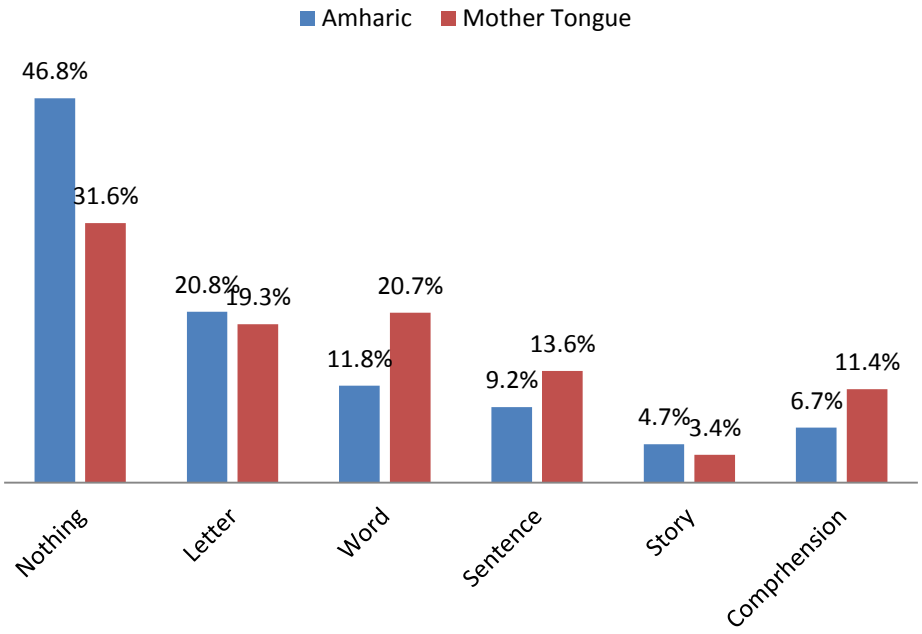

Figure 2. Bar Chart Showing Reading Levels by Language of Instruction

Further comparisons of those thought in their mother tongue and in Amharic were made by each of the three languages. Table 5 shows that from those thought in Amharic 70.6% of Bertha, 36.2% of Gumuz and 32.6% of Shinasha speaking students were unable to identify letters. 5% of Bertha, 11.9% of Gumuz, and 32.6% of Shinasha speaking students were at word level.

Table 5. Reading Tested in Amharic

Level	Home Language of Students			
	Bertha	**Gumuz**	**Shinasha**	**Total**
Nothing	70.6%	36.2%	32.6%	**46.8%**
Letter	17.8%	25.7%	17.4%	**20.8%**
Word	5.0%	11.9%	20.1%	**11.8%**
Sentence	2.2%	10.5%	16.0%	**9.2%**
Story	.6%	6.7%	6.9%	**4.7%**
Comprehension	3.9%	9.0%	6.9%	**6.7%**

Table 6 shows cross-tabulation of reading levels by grade and language for those tested in Amharic. From those whose mother tongue is Bertha 73.3% were unable to identify letters in Grade 3 and only 1.7% were at story level.

Table 6. Reading Levels by Grade and Language (Amharic)

Grade	Langauge	Nothing	Letter	Word	Sentence	Story	Comp
1	Bertha	75.0%	18.3%	6.7%	.0%	.0%	.0%
	Gumuz	53.9%	22.4%	5.3%	9.2%	3.9%	5.3%
	Shinasha	47.4%	29.8%	12.3%	10.5%	.0%	.0%
2	Bertha	63.3%	25.0%	5.0%	1.7%	.0%	5.0%
	Gumuz	28.3%	31.7%	18.3%	6.7%	10.0%	5.0%
	Shinasha	21.3%	10.6%	31.9%	21.3%	6.4%	8.5%
3	Bertha	73.3%	10.0%	3.3%	5.0%	1.7%	6.7%
	Gumuz	24.3%	24.3%	13.5%	14.9%	6.8%	16.2%
	Shinasha	25.0%	7.5%	17.5%	17.5%	17.5%	15.0%

On the other hand, looking at those who were thought in their mother tongue, Table 7 shows that 61.1% of Bertha, 3.8% of Gumuz, 27.9% of Shinasha speaking students were also unable to identify letters. 11.1% of Bertha, 31.3% of Gumuz, and 15% of Shinasha speaking students were found at word level.

Table 7. Reading Tested in Mother Tongue

Level	Language			
	Bertha	Gumuz	Shinasha	Total
Nothing	61.1%	3.8%	27.9%	**31.6%**
Letter	23.9%	20.6%	15.0%	**19.3%**
Word	11.1%	31.3%	20.8%	**20.7%**
Sentence	1.7%	25.0%	15.0%	**13.6%**
Story	.0%	6.9%	3.8%	**3.4%**
Comprehension	2.2%	12.5%	17.5%	**11.4%**

Table 8 shows cross-tabulation of reading levels by grade and language for those tested in their respective mother tongue. At Grade 3, 43.3% of Bertha and 21.3% of Shinasha speaking students were unable to identify letters and only 5% and 21.3% were able to read sentences respectively.

Table 8. Reading Levels by Grade and Language (Mother Tongue)

Grade	Language	Nothing	Letter	Word	Sentence	Story	Comp.
1	Bertha	65.0%	18.3%	16.7%	-	-	-
	Gumuz	6.7%	45.0%	23.3%	23.3%	-	1.7%
	Shinasha	40.0%	21.3%	28.8%	7.5%	-	2.5%
2	Bertha	75.0%	18.3%	5.0%	-	-	1.7%
	Gumuz	3.3%	6.7%	50.0%	25.0%	8.3%	6.7%
	Shinasha	22.5%	17.5%	17.5%	16.3%	7.5%	18.8%
3	Bertha	43.3%	35.0%	11.7%	5.0%	-	5.0%
	Gumuz	-	5.0%	15.0%	27.5%	15.0%	37.5%
	Shinasha	21.3%	6.3%	16.3%	21.3%	3.8%	31.3%

3.2 Numeracy

Numeracy is the ability to use mathematics effectively to meet the general demands of day-to-day life at home, at work and in society generally. It helps us to learn and make sense of the world around us.

3.2.1 Numeracy by Grade Level

A total of 1,134 students took the numeracy test and out of this 8% were unable to identify a number and only 3% were able to divide. In Grade 1, 16.5% were unable to identify numbers while 24.4% were able only to count 1 to 9. In Grade 2, 4.1% were unable to identify numbers and 18.5% were able to count 1 to 9, 24.8% count 10-99 and 15% add. In Grade Three, 2.9% were unable to identify numbers, 10.4% able to count a one digit numbers, while 19.5% counted two digits numbers and 5.3% were able to divide. In Grades Two and Three proportionately high, 24.3% and 34% respectively were able to solve word problems when compared with the four operations (Table 9).

Table 9. Numeracy Levels by Grade

Grade	Nothing	Count 1-9	Count 10-99	Add	Subtract	Multiply	Divide	Word Problem	Total
One	65 16.5%	96 24.4%	55 14.0%	59 15.0%	101 25.7%	6 1.5%	1 .3%	10 2.5%	393 100.0%
Two	15 4.1%	68 18.5%	91 24.8%	55 15.0%	27 7.4%	9 2.5%	13 3.5%	89 24.3%	367 100.0%
Three	11 2.9%	39 10.4%	73 19.5%	49 13.1%	31 8.3%	24 6.4%	20 5.3%	127 34.0%	374 100.0%
All	**91** **8.0%**	**203** **17.9%**	**219** **19.3%**	**163** **14.4%**	**159** **14.0%**	**39** **3.4%**	**34** **3.0%**	**226** **19.9%**	**1134** **100.0%**

Numeracy level was further cross-tabulated by grade and the test languages. Table 10 shows that at Grade 1, from 1.7% to 23.3% of the examinee were unable to identify a single digit number. On the other hand 21.7% to 53.8% of the students were able to solve word problems. When compared with the four operations presented in abstract form the performance of the students in solving the word problems was found much better.

Table 10.Numeracy Levels by Grade and Language

Grade	Language	Nothing	1 to 9	10 to 99	Add.	Subt.	Multipl.	Divis.	Problem
1	Amharic	17.6%	33.7%	10.9%	19.7%	12.4%	1.6%		4.1%
	Bertha	23.3%	28.3%	10.0%	13.3%	25.0%			
	Gumuz	1.7%	6.7%	35.0%	10.0%	46.7%			
	Shinasha	20.0%	12.5%	8.8%	8.8%	42.5%	3.8%	1.3%	2.5%
2	Amharic	4.2%	22.8%	32.3%	12.0%	7.8%	3.0%	3.0%	15.0%
	Bertha	1.7%	31.7%	30.0%	10.0%	6.7%			20.0%
	Gumuz	5.0%	1.7%	10.0%	35.0%	11.7%	1.7%	8.3%	26.7%
	Shinasha	5.0%	12.5%	16.3%	10.0%	3.8%	3.8%	3.8%	45.0%
3	Amharic	2.3%	10.3%	25.3%	13.8%	8.6%	9.2%	2.3%	28.2%
	Bertha	6.7%	20.0%	25.0%	16.7%	6.7%	3.3%		21.7%
	Gumuz	1.7%	6.7%	11.7%	11.7%	18.3%	1.7%	11.7%	36.7%
	Shinasha	2.5%	6.3%	8.8%	10.0%	1.3%	6.3%	11.3%	53.8%

3.2.2 Numeracy by Sex

Table 11 and Figure 3 show comparison between boys and girls of the numeracy tasks. There are more girls (11.9%) who cannot identify single digit numbers than boys (4.8%) while there are more boys than girls who can count three digit numbers. More boys can add, subtract or solve word problems than girls.

Table 11.Numeracy Levels by Sex

Sex	Nothing	Count 1-9	Count 10-99	Add	Subtract	Multiply	Divide	Word Problem
Female	61	127	113	63	51	14	12	73
	11.9%	24.7%	22.0%	12.3%	9.9%	2.7%	2.3%	14.2%
Male	30	76	106	100	108	25	22	153
	4.8%	12.3%	17.1%	16.1%	17.4%	4.0%	3.5%	24.7%
All	91	203	219	163	159	39	34	226
	8.0%	17.9%	19.3%	14.4%	14.0%	3.4%	3.0%	19.9%

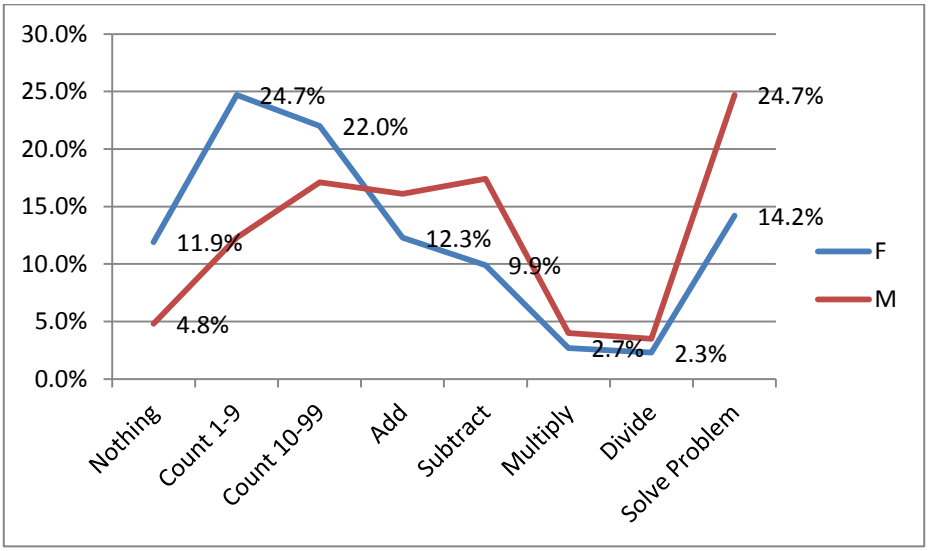

Figure 3. Line graph showing numeracy levels by sex

Looking at the cross-tabulation of numeracy level by grade and sex, Table 12 shows that in all the three grade levels, there were more girls than boys that could not identify a single digit. Furthermore in all cases there were more boys who were able to solve word problems than girls.

Table 12. Numeracy Levels by Grade and Sex

Grade	Sex	Nothing	1-9	10-99	Add	Subt.	Mult.	Divid.	Probl.
1	F	26.0%	32.8%	13.0%	9.6%	16.9%	.6%	.6%	.6%
	M	8.8%	17.6%	14.8%	19.4%	32.9%	2.3%	.0%	4.2%
2	F	4.8%	25.6%	24.4%	13.7%	7.7%	2.4%	1.8%	19.6%
	M	3.5%	12.6%	25.1%	16.1%	7.0%	2.5%	5.0%	28.1%
3	F	4.1%	15.9%	28.8%	13.5%	4.7%	5.3%	4.7%	22.9%
	M	2.0%	5.9%	11.8%	12.7%	11.3%	7.4%	5.9%	43.1%

3.2.3 Numeracy by Language of Instruction

For the purpose of comparison the tests were administered in Amharic. From those who are learning in Amharic; Table 13 shows that: 7.2% of Bertha, 9% of Gumuz and 9% of Shinasha speaking students were unable to recognize one digit numbers. 16.1% of Bertha, 17.1% of Gumuz, 11.8% of Shinasha speaking students were able to add.

Table 13. Numeracy Tested in Amharic

Level	Home Language of Students			Total
	Bertha	Gumuz	Shinasha	
Nothing	7.2%	9.0%	9.0%	**8.4%**
1 to 9	31.1%	17.6%	19.4%	**22.7%**
10 to 99	22.8%	27.6%	13.9%	**22.3%**
Add	16.1%	17.1%	11.8%	**15.4%**
Subtract	12.2%	7.6%	9.7%	**9.7%**
Multiply	2.2%	7.1%	3.5%	**4.5%**
Divide	1.1%	.0%	4.9%	**1.7%**
Solve Problem	7.2%	13.8%	27.8%	**15.4%**

Table 14 shows cross-tabulation of numeracy levels by grade and language for those tested in Amharic. Among Shinasha speaking students 57.5% in Grade 3 and 36.2% in Grade 2 were able to solve word problems. In Grade 1, 19.7% of Gumuz, 19.3% of Shinasha and 13.3% of Bertha speaking students were unable to identify single digit numbers.

Table 14. Numeracy Levels by Grade and Language (Amharic)

Grade	Language	Nothing	1 to 9	10 to 99	Add.	Subt.	Multipl.	Division	Problem
1	Bertha	13.3%	41.7%	8.3%	23.3%	13.3%	.0%	.0%	.0%
	Gumuz	19.7%	26.3%	17.1%	15.8%	6.6%	3.9%	.0%	10.5%
	Shinasha	19.3%	35.1%	5.3%	21.1%	19.3%	.0%	.0%	.0%
2	Bertha	6.7%	36.7%	28.3%	11.7%	8.3%	3.3%	3.3%	1.7%
	Gumuz	1.7%	16.7%	41.7%	18.3%	10.0%	.0%	.0%	11.7%
	Shinasha	4.3%	12.8%	25.5%	4.3%	4.3%	6.4%	6.4%	36.2%
3	Bertha	1.7%	15.0%	31.7%	13.3%	15.0%	3.3%	.0%	20.0%
	Gumuz	4.1%	9.5%	27.0%	17.6%	6.8%	16.2%	.0%	18.9%
	Shinasha	.0%	5.0%	12.5%	7.5%	2.5%	5.0%	10.0%	57.5%

On the other hand, looking at those who were tested in their mother tongue, Table 15 shows that 10.6% of Bertha, 2.8% of Gumuz, 9.2% of Shinasha speaking students were also unable to recognize single digit numbers. Among those who are learning in their mother tongue 13.3% of Bertha, 18.9% Gumuz, and 9.6% Shinasha were able to add single digit or two digit numbers.

Table 15. Numeracy Tested in Mother Tongue

Level	Language			Total
	Bertha	Gumuz	Shinasha	
Nothing	10.6%	2.8%	9.2%	**7.7%**
1 to 9	26.7%	5.0%	10.4%	**13.7%**
10 to 99	21.7%	18.9%	11.3%	**16.7%**
Add	13.3%	18.9%	9.6%	**13.5%**
Subtract	12.8%	25.6%	15.8%	**17.8%**
Multiply	1.1%	1.1%	4.6%	**2.5%**
Divide	.0%	6.7%	5.4%	**4.2%**
Solve Problem	13.9%	21.1%	33.8%	**24.0%**

Table 16 shows cross-tabulation of numeracy levels by grade and language for those tested in their respective mother tongue. Among Shinasha speaking students 53.8% in Grade 3 and 45% in Grade 2 and 2.5% in Grade 1 were able to solve word problems. In Grade 1, 23.3% of Bertha and 20% of Shinasha speaking students were unable to identify single digit numbers.

Table 16. Numeracy Levels by Grade and Language (Mother Tongue)

Grade	Language	Nothing	1 to 9	10 to 99	Add.	Subt.	Multipl.	Division	Problem
1	Bertha	23.3%	28.3%	10.0%	13.3%	25.0%	-	-	-
	Gumuz	1.7%	6.7%	35.0%	10.0%	46.7%	-	-	-
	Shinasha	20.0%	12.5%	8.8%	8.8%	42.5%	3.8%	1.3%	2.5%
2	Bertha	1.7%	31.7%	30.0%	10.0%	6.7%	-	-	20.0%
	Gumuz	5.0%	1.7%	10.0%	35.0%	11.7%	1.7%	8.3%	26.7%
	Shinasha	5.0%	12.5%	16.3%	10.0%	3.8%	3.8%	3.8%	45.0%
3	Bertha	6.7%	20.0%	25.0%	16.7%	6.7%	3.3%	-	21.7%
	Gumuz	1.7%	6.7%	11.7%	11.7%	18.3%	1.7%	11.7%	36.7%
	Shinasha	2.5%	6.3%	8.8%	10.0%	1.3%	6.3%	11.3%	53.8%

3.3 Writing

A child's writing development parallels their development as a reader. Print awareness develops in young children as a result of being read to by adults and having other literacy experiences. Part of print awareness is the realization that writing is created with instruments such as pens, pencils, crayons and markers. Children began to imitate the writing that they see in the environment. At first glance, the efforts of a young child may look like meaningless scribble, but a closer look at these early attempts at writing will reveal something more. Young children move through a series of stages as they are learning to write. The stages reflect a child's growing knowledge of the conventions of literacy, including letters, sounds and spacing of words within sentences.

3.3.1 Writing by Grade

A total of 1,128 students took the writing test and out of this 8.1% were unable to write anything, 11% were able to write sentences, and 17.8% wrote dictation. In Grade 1, 16.5% were unable to write letters while 15.8% were at letter level, 45.3% at word level. In Grade 2, 4.1% were unable to write letters, 5.4% were at letter level and 37.1% were at word level. In Grade Three, 35.1% were at word level, 11.7% at sentence level and 28.8% were able to write by dictation (Table 17).

Table 17. Writing Levels by Grade

Grade	Nothing	Letter	Word	Label	Sentence	Dictation	Total
One	65	62	178	49	23	16	393
	16.5%	15.8%	45.3%	12.5%	5.9%	4.1%	100.0%
Two	15	20	136	62	58	76	367
	4.1%	5.4%	37.1%	16.9%	15.8%	20.7%	100.0%
Three	11	12	129	67	43	106	368
	3.0%	3.3%	35.1%	18.2%	11.7%	28.8%	100.0%
All	**91**	**94**	**443**	**178**	**124**	**198**	**1128**
	8.1%	**8.3%**	**39.3%**	**15.8%**	**11.0%**	**17.6%**	**100.0%**

Writing level was further cross-tabulated by grade and the test languages. Table 18 shows that at Grade 1, from 11.7% of to 26.7% of the examinee were unable to copy letters in their respective test languages. On the other hand 52.5% in Shinasha and 45% in Gumuz languages were able to dictation.

Table 18.Writing Levels by Grade and Language

Grade	Language	Nothing	Letter	Word	Label	Sentence	Dictation
1	Amharic	13.0%	20.7%	44.6%	6.2%	9.3%	6.2%
	Bertha	26.7%	10.0%	48.3%	15.0%	-	-
	Gumuz	11.7%	8.3%	48.3%	26.7%	3.3%	1.7%
	Shinasha	21.3%	13.8%	42.5%	15.0%	3.8%	3.8%
2	Amharic	4.2%	7.8%	37.1%	13.8%	20.4%	16.8%
	Bertha	8.3%	6.7%	70.0%	13.3%	-	1.7%
	Gumuz	-	-	16.7%	36.7%	25.0%	21.7%
	Shinasha	3.8%	3.8%	27.5%	11.3%	11.3%	42.5%
3	Amharic	4.8%	3.6%	45.8%	14.9%	14.3%	16.7%
	Bertha	3.3%	3.3%	36.7%	33.3%	8.3%	15.0%
	Gumuz	1.7%	5.0%	10.0%	26.7%	11.7%	45.0%
	Shinasha	-	1.3%	30.0%	7.5%	8.8%	52.5%

3.3.2 Writing by Sex

Table 19 and Figure 4 show comparison between boys and girls of the writing tasks. There are more girls (11.2%) who cannot copy letters than boys (5.5%) while there are more boys than

girls who can write dictation (23.1%) than girls (10.8%). More boys were able to label diagrams than girls.

Table 19. Writing Levels by Sex

Sex	Nothing	Letter	Word	Label	Sentence	Dictation
Girls	57	45	228	67	56	55
	11.2%	8.9%	44.9%	13.2%	11.0%	10.8%
Boys	34	49	215	111	68	143
	5.5%	7.9%	34.7%	17.9%	11.0%	23.1%
All	91	94	443	178	124	198
	8.1%	8.3%	39.3%	15.8%	11.0%	17.6%

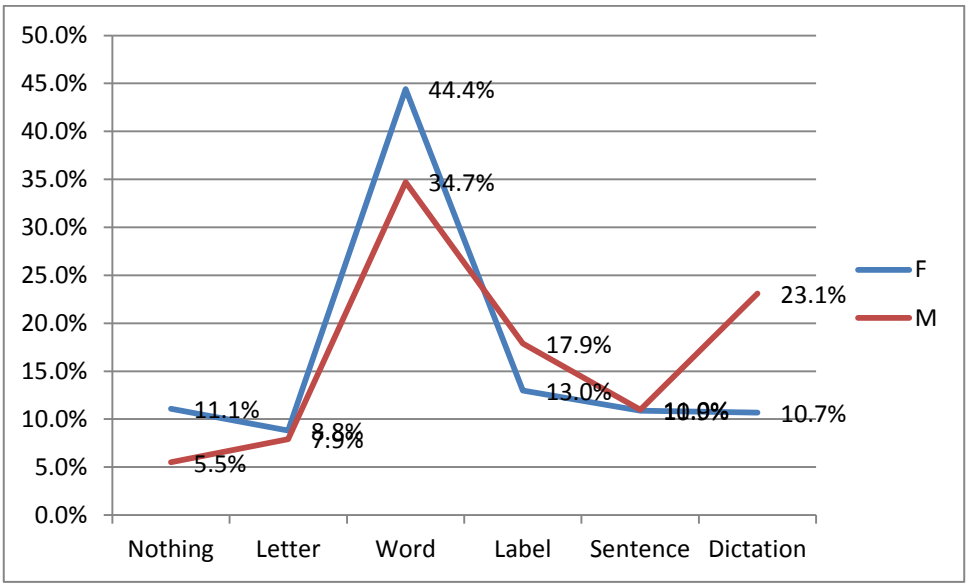

Figure 4. Line graph showing writing levels by sex

Looking at the cross-tabulation of writing level by grade and sex, Table 20 shows that in all the three grade levels, there were more girls than boys that could not copy letters. In addition there were more boys than girls who were able to write dictation in all the three grade levels.

Table 20. Writing Levels by Grade and Sex

Grade	Sex	0	1	2	3	4	5
1	F	23.7%	18.6%	44.6%	6.8%	5.1%	1.1%
	M	10.6%	13.4%	45.8%	17.1%	6.5%	6.5%
2	F	4.8%	3.6%	44.0%	14.9%	17.3%	15.5%
	M	3.5%	7.0%	31.2%	18.6%	14.6%	25.1%
3	F	4.3%	3.7%	46.3%	18.3%	11.0%	16.5%
	M	2.0%	2.9%	26.0%	18.1%	12.3%	38.7%

3.3.3 Writing by Language of Instruction

For the purpose of comparison the tests were administered in Amharic. Table 21 shows that: among those learning in Amharic, 6.1% of Bertha, 10.8% of Gumuz and 4.9% of Shinasha speaking students were unable to copy letters. 57.8% of Bertha, 27.9% of Gumuz, and 44.4% of Shinasha speaking students were able to copy words while 9.4%, 10.3%, 15.3% and 11.4% were able to label diagrams respectively.

Table 21. Writing Tested in Amharic

Level	Home Language of Students			
	Bertha	Gumuz	Shinasha	Total
Nothing	6.1%	10.8%	4.9%	7.6%
Letter	8.3%	9.3%	17.4%	11.2%
Word	57.8%	27.9%	44.4%	42.6%
Label	9.4%	10.3%	15.3%	11.4%
Sentence	16.1%	18.6%	6.3%	14.4%
Dictation	2.2%	23.0%	11.8%	12.9%

Table 22 shows cross-tabulation of writing levels by grade and language for those tested in Amharic. In Grade 3, 11.8% of Gumuz speaking students were unable to copy letters.

Table 22. Writing Levels by Grade and Language (Amharic)

Grade	Language	Nothing	Letter	Word	Label	Sentence	Dictation
1	Bertha	10.0%	13.3%	66.7%	3.3%	6.7%	.0%
	Gumuz	18.4%	17.1%	26.3%	7.9%	15.8%	14.5%
	Shinasha	8.8%	33.3%	45.6%	7.0%	3.5%	1.8%
2	Bertha	8.3%	11.7%	41.7%	13.3%	23.3%	1.7%
	Gumuz	.0%	3.3%	31.7%	10.0%	25.0%	30.0%
	Shinasha	4.3%	8.5%	38.3%	19.1%	10.6%	19.1%
3	Bertha	.0%	.0%	65.0%	11.7%	18.3%	5.0%
	Gumuz	11.8%	5.9%	26.5%	13.2%	16.2%	26.5%
	Shinasha	.0%	5.0%	50.0%	22.5%	5.0%	17.5%

On the other hand, looking at those who are learning in their mother tongue, Table 23 shows that 12.8% of Bertha, 4.4% of Gumuz, and 8.3% of Shinasha speaking students were also unable to copy letters. Among those tested in their mother tongue 51.7% of Bertha, 25% of Gumuz, 33.3% of Shinasha speaking students were able to copy words.

Table 23. Writing Tested in Mother Tongue

Level	Language			
	Bertha	**Gumuz**	**Shinasha**	**Total**
Nothing	12.8%	4.4%	8.3%	8.5%
Letter	6.7%	4.4%	6.3%	5.8%
Word	51.7%	25.0%	33.3%	36.3%
Label	20.6%	30.0%	11.3%	19.7%
Sentence	2.8%	13.3%	7.9%	8.0%
Dictation	5.6%	22.8%	32.9%	21.7%

Table 24 shows cross-tabulation of writing levels by grade and language for those tested in their respective mother tongue. Among Shinasha speaking students 52.5% in Grade 3 and 42.5% in Grade 2 and 3.8% in Grade 1 were able to write in dictation. In Grade 1, 26.7% of Bertha and 21.3% of Shinasha and 11.7% of Gumuz speaking students were unable to copy letters.

Table 24. Writng Levels by Grade and Language (Mother Tongue)

Grade	Language	Nothing	Letter	Word	Label	Sentence	Dictation
1	Bertha	26.7%	10.0%	48.3%	15.0%		
	Gumuz	11.7%	8.3%	48.3%	26.7%	3.3%	1.7%
	Shinasha	21.3%	13.8%	42.5%	15.0%	3.8%	3.8%
2	Bertha	8.3%	6.7%	70.0%	13.3%		1.7%
	Gumuz			16.7%	36.7%	25.0%	21.7%
	Shinasha	3.8%	3.8%	27.5%	11.3%	11.3%	42.5%
3	Bertha	3.3%	3.3%	36.7%	33.3%	8.3%	15.0%
	Gumuz	1.7%	5.0%	10.0%	26.7%	11.7%	45.0%
	Shinasha		1.3%	30.0%	7.5%	8.8%	52.5%

3.4 Student's background variables

Students were asked a range of questions about themselves (Table 25). 44.6% of the students said that there is someone in their house who helps them in their studies, in 72.9% cases there is at least one other person who is currently enrolled in school, in 26.4% cases their mother or a female guardian can read and write while 50.4% said their father or a male guardian can read and write. 28.8% said they have books other than their textbooks in their house and 36.6% said they read books other than their textbooks.

Table 25. Student's background variables

	No		Yes	
	Count	Row N %	Count	Row N %
Is there anyone who helps you in your studies at home?	346	55.4%	279	44.6%
Is there any at home who is currently enrolled in school?	170	27.1%	458	72.9%
Does your mother or female guardian read and write?	462	73.6%	166	26.4%
Does your father or male guardian can read and write?	312	49.6%	317	50.4%
Do you have books other than your textbooks at home?	446	71.2%	180	28.8%
Do you read books other than your textbooks?	399	63.7%	227	36.3%

The responses of the students' to the background questions were cross tabulated with their achievement levels of reading. More students without mother tongue textbook (30%) were found at Nothing Level than students with mother tongue textbook (11.9%) while more students with mother tongue textbooks were found at Word, Sentence, Story and Comprehension Levels when compared with those without the mother tongue textbook. Similarly from those who responded positively to factors which are believed to contribute positively to higher achievement levels fewer students were found at Nothing Level (Table 26).

Table 26. Cross tabulation of background variables with reading levels

		Reading Levels					
		Nothing	**Letter**	**Word**	**Sentence**	**Story**	**Compr.**
Do you have mother tongue textbook for your own?	Yes	11.9%	15.3%	25.4%	22.9%	7.6%	16.9%
	No	30.4%	22.4%	20.8%	11.6%	1.6%	13.2%
Is there anyone who helps you in your studies at home?	No	27.0%	24.5%	17.6%	12.7%	2.9%	15.2%
	Yes	21.3%	14.4%	28.1%	18.1%	4.4%	13.8%
Is there any one at home who is currently enrolled in school?	No	27.8%	25.0%	21.3%	11.1%	3.7%	11.1%
	Yes	23.2%	18.1%	22.8%	16.6%	3.5%	15.8%
Does your mother or female guardian read and write?	No	25.3%	23.1%	21.7%	13.2%	3.6%	13.2%
	Yes	21.8%	10.3%	24.1%	21.8%	3.4%	18.4%
Does your father or male guardian can read and write?	No	27.0%	21.2%	20.7%	13.5%	4.5%	13.1%
	Yes	20.5%	18.5%	24.7%	17.8%	2.1%	16.4%
Do you have books other than your textbooks at home?	No	27.7%	19.9%	18.9%	14.3%	3.6%	15.6%
	Yes	8.5%	18.6%	40.7%	20.3%	3.4%	8.5%
Do you read books other than your textbooks?	No	28.7%	19.5%	20.1%	14.0%	3.4%	14.3%
	Yes	8.2%	20.5%	31.5%	20.5%	4.1%	15.1%
Do you discuss what you read with your friends?	No	24.3%	16.3%	21.9%	16.7%	3.6%	17.1%
	Yes	10.7%	21.3%	30.7%	18.7%	5.3%	13.3%
Do your parents tell you stories?	No	26.3%	20.4%	23.8%	14.6%	2.9%	12.1%
	Yes	21.4%	19.0%	19.0%	16.7%	4.8%	19.0%
Do you prefer to stay at home instead of coming to school?	No	24.4%	19.7%	21.1%	14.4%	3.7%	16.7%
	Yes	21.2%	22.7%	28.8%	19.7%	3.0%	4.5%
Do you have reading books at home?	No	25.0%	27.0%	26.0%	16.0%	2.0%	4.0%
	Yes	24.5%	16.6%	21.3%	14.2%	4.3%	19.0%

3.5 School directors' background variables

The school directors were asked about themselves, the students and the school. In relation to their trainings 50% said they received trainings or courses on school management and 22.2% said they received attended training or taken course which prepared them to implement a reading program in mother tongue (Table 27).

Table 27. Director's training

	No		Yes	
	Count	Percent	Count	Percent
Have you received special training or taken courses in school management?	9	50.0%	9	50.0%
Have you received special training or taken courses that prepared you to implement a program in reading?	14	77.8%	4	22.2%
Are you satisfied with the reading performance of your students in Grades 1, 2 and 3 in your	6	33.3%	12	66.7%

3.6 Teachers background variables and perception

Teachers were asked about themselves, the school and their students. Table 28 shows that out of 55 teachers 32.7% were females, 52.7% hold diploma and the remaining 47.3% certificates. They served from 0 to 10 years with a mean of 5.5 years; they attended in-service programs from 0 to 45 days with a mean of 6.8 days.

Table 28. Teachers highest level of qualification by sex

	Sex					
Qualification	**F**		**M**		**Total**	
Certificate	4	7.3%	22	40.0%	26	47.3%
Diploma	14	25.5%	15	27.3%	29	52.7%
Total	**18**	**32.7%**	**37**	**67.3%**	**55**	**100.0%**

Teachers were asked a range of questions related with the availability of reading materials, about their relationships with the students and their parents. Table 29 shows that most teachers said their school does not have a functioning library (69.1%), there are no sufficient reading materials in the school (76.4%) and they do not have sufficient reading materials for their own (80%). Only 34.5% said they have a teacher's guide for the mother tongue. On the other hand the teachers said they supervise students when they use a reading room or a library when available (22.6%) and they have meetings with parents (85.5%).

Table 29. Input related factors

	No	Yes
Does your school have a functioning Library or Reading Room?	69.1%	30.9%
Are there sufficient reading materials for supporting reading teaching?	76.4%	23.6%
Do you supervise your pupils as they use the library (reading room)?	77.4%	22.6%
Do you have sufficient learning materials?	80.0%	20.0%
Does your school have a functioning Parent - Teacher Association (PTA)?	12.7%	87.3%
Do you have class meetings with the parents of your pupils?	14.5%	85.5%
Do you have a teacher's guide for the mother tongue?	65.5%	34.5%

Teachers were asked about reading skills development of their students at different grade levels. Table 30 shows that, in relation with ability to read aloud a short passage with a few mistakes, the expectations of the teachers were: 2% at Preschool, 24% at Grade 1, 34% at Grade 2 and 40% at Grade 3. When it comes to understanding what the students read: 1.9% at Preschool, 6% at Grade 1, 22% at Grade 2 and 68% at Grade 3. Most teachers (56.6%) expect their students to recognize letters and say letter names at Grade 1 they also expect them to recite alphabet. On the other hand 49% of the teachers expect students to understand stories they hear.

Table 30. Teachers expectation of students' reading ability

	Preschool	Grade 1	Grade 2	Grade 3
Read aloud a short passage with few mistakes	2.0%	24.0%	34.0%	40.0%
Write their name	1.9%	24.5%	45.3%	28.3%
Understand stories they read	4.0%	6.0%	22.0%	68.0%
Recognize letters and say letter names	3.8%	56.6%	18.9%	20.8%
Sound out unfamiliar words	12.5%	37.5%	14.6%	35.4%
Understand stories they hear	2.0%	30.6%	18.4%	49.0%
Recite alphabet	.0%	50.0%	20.0%	30.0%

Most teachers travel about 15 minutes from home to school (44.4%) and others live within the school (24.1%). When how often they use the mother tongue text 50% said they use it on daily basis and 69.8% said it is very useful. Only 34.5% siad they have a Teacher's Guide for the Mother Tongue and 64.7% found it very useful (Table 31).

Table 31. Usage and availability of teaching materials

		Count	Column N %
Approximately, how long do you take to walk to school from your residence?	Live in the School	13	24.1%
	15 Minutes or Less	24	44.4%
	16 to 30 Minutes	9	16.7%
	31 to 45 Minutes	4	7.4%
	46 to 60 Minutes	2	3.7%
	More than 60 Minutes	2	3.7%
How often do you use the mother tongue textbook during reading lessons?	One Day Per week	2	3.7%
	Two Days Per Week	0	.0%
	Three Days Per week	6	11.1%
	Four Days Per week	3	5.6%
	Five Days Per Week	27	50.0%
	I Do Not Have The Textbook	16	29.6%
How useful did you find the mother tongue textbook?	Not Useful	4	7.5%
	A Little	0	.0%
	Somewhat	2	3.8%
	Useful	10	18.9%
	Very Useful	37	69.8%
Do you have a teacher's guide for the mother tongue?	No	36	65.5%
	Yes	19	34.5%
How useful did you find this guide?	Not Useful	9	17.6%
	A Little	3	5.9%
	Some what	2	3.9%
	Useful	4	7.8%
	Very Useful	33	64.7%

4 Summary, Conclusions and Recommendations

This chapter presents the main findings followed by conclusions made based on these findings and recommendations.

4.1 Summary

Literacy is the ability to read, write, speak and listen to language in a way that allows people to communicate with each other and to make sense of the world around them and numeracy is the ability to use mathematics effectively to meet the general demands of day-to-day life at home, at work and in society generally. It helps us to learn and make sense of the world around us. Hence literacy and numeracy are not subjects per se; rather they are foundation skills that students use in all subjects. If students do not possess these basic literacy and numeracy skills, then they are less likely to experience success in other subject areas.

Literacy and Numeracy achievement is considered the best predictor of student achievement in other subjects. If students have not developed literacy and numeracy skills considered typical for their phase of development, it is less likely that they will be able to experience success in other learning areas.

This basic literacy and numeracy study was carried out in Grades 1, 2 and 3 students in Benshangul Gumuz region where SIL Mother Tongue based Multi Lingual Education pilot project is under progress. A sample of 1034 students drawn from 18 schools, their teachers and the schools' directors participated in the study. Students took tests on reading, writing and numeracy which were administered on one to one basis. Students, teachers and school director also responded to questionnaires.

The reading test was composed of five parts: identifying letters, word reading, sentence reading, story reading and comprehension. A total of 1,114 students took the reading test and out of this 38.9% were unable to identify letters and only 4% were at the story level. In Grade One, 47.8% were unable to identify a letter while 15.8% were at word level. In Grade Two, 35.4% were unable to identify a letter and 20.7% were at word level. In Grade Three, 32.5% were unable to identify letters, 15.5% were at word level, 6.2% were at story level and 18.4% were able to give a correct answer for at least one comprehension question.

A total of 1,128 students took the writing test and out of this 8.1% were unable to write anything, 11% were able to write sentences, and 17.8% wrote dictation. In Grade 1, 16.5% were unable to write letters while 15.8% were at letter level, 45.3% at word level. In Grade 2,

4.1% were unable to write letters, 5.4% were at letter level and 37.1% were at word level. In Grade Three, 35.1% were at word level, 11.7% at sentence level and 28.8% were able to write by dictation.

A total of 1,134 students took the numeracy test and out of this 8% were unable to identify a number and only 3% were able to divide. In Grade 1, 16.5% were unable to identify numbers while 24.4% were able only to count 1 to 9. In Grade 2, 4.1% were unable to identify numbers and 18.5% were able to count 1 to 9, 24.8% count 10-99 and 15% add. In Grade Three, 2.9% were unable to identify numbers, 10.4% able to count a one digit numbers, while 19.5% counted two digits numbers and 5.3% were able to divide. In Grades Two and Three proportionately high, 24.3% and 34% respectively were able to solve word problems when compared with the four operations.

Comparison between boys and girls of the reading tasks showed there are more girls (45.8%) who cannot identify letters than boys (33.1%) while there are more boys than girls who are at sentence, story and comprehension levels. In writing, there are more girls (11.2%) who cannot copy letters than boys (5.5%) while there are more boys than girls who can write dictation (23.1%) than girls (10.8%). More boys were able to label diagrams than girls. In numeracy, there are more girls (11.9%) who cannot identify single digit numbers than boys (4.8%) while there are more boys than girls who can count three digit numbers. More boys can add, subtract or solve word problems than girls.

From those whose medium of instruction was Amharic 46.8% were unable to identify letters and from those who were thought by their mother tongues 31.6% were unable to identify letters. In writing, among those whose medium of instruction is Amharic, 6.1% of Bertha, 10.8% of Gumuz and 4.9% of Shinasha speaking students were unable to copy letters. 57.8% of Bertha, 27.9% of Gumuz, and 44.4% of Shinasha speaking students were able to copy words while 9.4%, 10.3%, 15.3% and 11.4% were able to label diagrams respectively. In numeracy, those who are learning in Amharic; 7.2% of Bertha, 9% of Gumuz and 9% of Shinasha speaking students were unable to recognize one digit numbers. 16.1% of Bertha, 17.1% of Gumuz, 11.8% of Shinasha speaking students were able to add.

4.2 Conclusions

Based on the findings of the study the following conclusions are made:

- the literacy and numeracy levels of Grades 1, 2 and 3 students was found very low
- girls are performing less than boys
- those whose medium of instruction was their mother tongue performed better than those thought in Amharic
- there are shortages of textbooks and supplementary materials
- textbooks when available are underutilized
- students are not getting the necessary support required to excel in basic literacy and numeracy
- teachers are not getting continuous support and follow up
- teachers and school directors have wrong perceptions of the level of their students
- teachers have very low expectations of their students' performance

4.3 Recommendations

In a perfect world, all students would begin school with print awareness firmly in place. But the world is not a perfect place. Therefore, school leaders and teachers should be able to help students to develop or increase print awareness. Administering assessments on a regular basis throughout the school year provides useful information that can help teachers to identify the individual strengths and weakness of each student.

The three focus areas for action should be leadership, teaching and learning. The achievements in each area should be reliant on the effective use of data and information to inform actions in each area.

1. Strengthen the leadership capacity of school directors
2. Improve teachers' professional knowledge and skills in teaching literacy and numeracy
3. Improve literacy and numeracy learning of every student

Strengthen literacy and numeracy leadership: to promote and enhance a productive school culture that establishes high expectations for teachers and students and aligns highly effective teaching practices with resource allocation to improve literacy and numeracy.

- There is a need to sustain and build literacy and numeracy attainment levels. The school director is responsible for the setting of targets for students' literacy and numeracy outcomes. Sustaining student success is the responsibility of all schools and all teachers.
- While it is recognized that teachers' expertise is crucial for improving students' literacy and numeracy skills, strong school leadership is necessary to drive whole school engagement with literacy and numeracy.
- It is the director's responsibility to ensure literacy and numeracy learning is addressed at the different stages of schooling and across all areas of the curriculum. To effectively guide school policy and teacher practice and development, directors require a high level of knowledge about how students acquire and develop literacy and numeracy skills and about effective teaching and learning practices.
- School leaders and directors are expected to develop and promote a productive school culture that articulates a rich learning environment with high expectations. Teachers and students require a strong commitment to the importance of lifelong learning, as well as an understanding of the role they play in achieving it.
- School leaders and principals need to monitor and support teachers to ensure they understand their role in the teaching of literacy and numeracy skills.

This focus area should be able to strengthen school leadership of literacy and numeracy by promoting and enhancing a productive school culture aligning highly effective teaching practices with resource allocation.

School directors are expected to build positive cultures in their schools to promote high expectations of all students and of all teachers. Directors are expected to set targets for improving the literacy and numeracy performance of their students and put in place plans for achieving these targets. School leaders and directors are expected to guide their teachers' practice and make informed decisions about the allocation of the available resources to support literacy and numeracy.

Improve literacy and numeracy teaching: to develop all teachers' professional knowledge, skills and capacity to use research-based practices to improve their teaching of literacy and numeracy.

- The quality of teaching is widely acknowledged as the largest in-school determinant of

variation in student achievement. There is a need to continue to strengthen teachers' knowledge and skills about how students acquire and develop proficiency in literacy and numeracy.

- There should be supports to teachers in understanding the dimensions of pedagogy required to produce quality student learning outcomes. Professional learning based on research increases teacher understanding and, when supported through ongoing in-school mentoring and coaching, is the most effective approach to building teacher capacity. Through increased understanding, teachers are able to explain their practice and link this to pedagogical approaches.
- A three-pronged educational approach should be used to ensure all students are supported. This approach involves: high quality instruction by every classroom teacher, additional in-class support provided by all stakeholders and intensive, short-term support for individual students when required.

This focus area needs to develop teachers' professional knowledge, skills and capacity to use research-based practices to improve their teaching of literacy and numeracy. Literacy and numeracy teaching should incorporate explicit and systematic instruction, and will draw on the evidence base of a range of approaches. Teachers must be able to draw on a flexible repertoire of skills, resources and professional knowledge to meet the needs of each student.

Improve literacy and numeracy learning: to improve the literacy and numeracy learning outcomes for all students by providing a supportive learning environment and addressing their diverse needs and abilities.

- Careful monitoring of student performance, with timely and targeted intervention strategies are recommended to support all learners.
- Assessment plays an important role in the teaching and learning process. Careful analysis of diagnostic qualitative and quantitative data at every year level will lead to more targeted programs to support the effective delivery of literacy and numeracy.
- Early success in learning helps to build strong student engagement and a positive attitude to learning. In the early years of schooling, attention is to be given to assessment at school entry to build basic competencies to ensure a strong foundation for future learning.

This focus area needs to improve the literacy and numeracy learning outcomes for all students

by providing a supportive learning environment and by addressing the diverse needs and abilities of students. This should aim to engage and support all learners and provide the best learning environment for every student to reach their full potential. Through the School Improvement Program (SIP) assist schools to identify their priorities, implement a Literacy and Numeracy Strategy and use systems and data effectively to regularly monitor, review and report on their progress.

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