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ETHIOPIAN THIRD NATIONAL LEARNING ASSESSMENT OF GRADE FOUR STUDENTS

JULY, 2008

ADDIS ABABA

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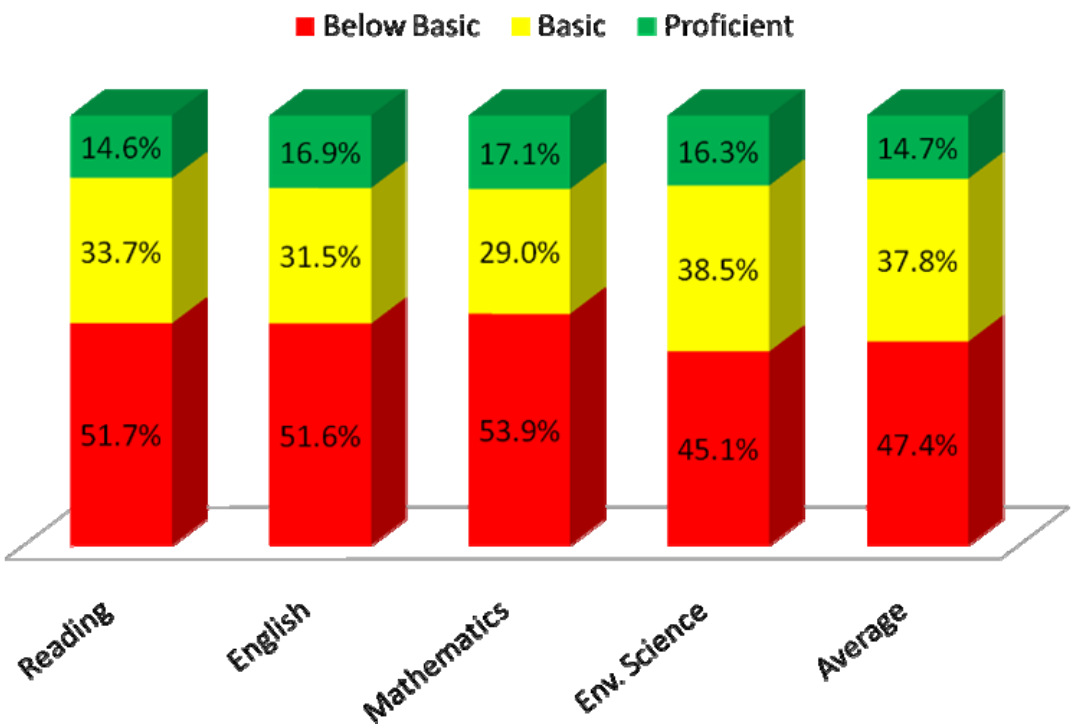

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ADDIS ABABA

Technical Working Group

Takele Gebrekidan
A/Manager - GEQAEA

Derese Mengestu
Quality Assurance Dept. Head - GEQAEA

Erkyhun Desta
Learning Assessment Expert - GEQAEA

Zewdu Gebrekidan
Learning Assessment Expert - GEQAEA

Teshome Nekatibeb (PhD.)
Technical Advisor
Basic Education Program / USAID

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Acronyms and Abbreviations

BEP	Basic Education Program
BESO I	Basic Education System Overhaul
BESO II	Basic Education Strategic Objective
EBNLA	Ethiopian Baseline National Learning Assessment
EFA	Education for All
ELIP	English Language Improvement Project
EMIS	Educational Management Information Service
ERGESE	Evaluative Research of the General Education System in Ethiopia
ESDP	Education Sector Development Program
ESNLA	Ethiopia Second National Learning Assessment
ESR	Education Sector Review
ETNLA	Ethiopian Third National Learning Assessment
ETP	Education and Training Policy
FDRE	Federal Democratic Republic of Ethiopia
GEQAEA	General Education Quality Assurance and Examinations Agency
HLM	Hierarchical Linear Modeling
ICDR	Institute of Curriculum Development and Research
IEA	International Association for the Evaluation of Educational Achievement
IIEP	International Institute for Education Planning
IRT	Item Response Theory
MLA	Monitoring Learning Achievement
MOE	Ministry of Education
NAC	National Advisory Council
NAEP	National Assessment of Educational Progress
NCES	National center for Education Statistics
NLA	National Learning Assessment
NOE	National Organization for Examinations
PISA	Program for International Student Assessment
REB	Regional Education Bureaus
SACMEQ	South African Consortium for Monitoring Educational Quality
SNNPR	Southern Nations, Nationalities and Peoples Region
TWG	Technical Working Group
USAID	United States Agency for International Development

Executive Summary

Overview

The main purposes of the Ethiopian Third National Learning Assessment for the First Cycle Primary Education were to measure learning achievements of Grade 4 students and identify the factors that determine those achievements. It also aimed at providing comparative information on school improvement since the Ethiopian Second National Learning Assessment conducted in 2003/2004. In order to obtain the required information for the study, both quantitative and qualitative research approaches were employed. The target population was Grade 4 students in the country. A total of 11,373 sample students from 305 schools in all regions participated in the study. For the purpose of generating data on factors which determine the academic achievement, 832 teachers and 305 school principals were included. In the qualitative study, 312 students, 311 teachers and 286 parents provided information. The data collection instruments included achievement tests, attitude surveys, and questionnaires for students, teachers and school directors, and focus group discussion guides. Here are the main findings of the study.

Overall Achievement

The academic achievement of the students as measured by the mean composite score of the four subjects namely English, mathematics, mother tongue and environmental science was by far less than the 50% achievement level expected by the Education and Training Policy of Ethiopia. The national composite mean score (the average of what the students scored in the four subjects) was only 40.9%, which is not only below the minimum expected but also less than the scores obtained in the previous two studies.

The summary of descriptive statistics for the achievement tests indicates that in none of the subjects tested did the scores of students amount to 50%. The highest mean score was observed for reading (43.9%) and the least was for English (36.5%).

Gender and Achievement

Boys performed better than girls in the composite score at national level. There were 5,898 males and 5,044 females in the national sample. Boys scored an average of 41.4% whereas girls had an average of 40.3%. The gender gap, when compared with the findings for Grade 8, is narrower but still persistent. The mean differences in mathematics and reading were not statistically significant.

Location and Achievement

The national composite achievement results by location indicated that students in rural schools gained more than those in urban schools. Overall, those in urban schools scored an aggregate of 40.0% while those in rural schools had an average of 41.6%. The mean differences between urban and rural students in all subjects except mathematics were statistically significant in favor of students from the rural schools.

Achieved Performance Standards

The students' achievement scores were divided into three standards as: ***Below Basic****,* ***Basic*** *and* ***Proficient****. This classification was based on norm referenced ability score using Item Response Theory (IRT). It used scaled scores instead of raw scores where: "Proficient" is greater than or equal to 1 standard deviation above the mean, "Basic" is within 1 standard deviation above the mean and "Below Basic" is below the mean score. The proportion achieving each level based on the national achievement of the composite score are (see the table on the next page):*

- *14.7% proficient,*
- *37.8% basic, and*
- *the remaining 47.4% below basic level.*

Region Level Achievement

The mean composite score and the mean score of each subject when disaggregated across regions showed that there exist disparities in academic achievement among regions. Nevertheless, no single region achieved the minimum requirement by the Education and Training Policy.

The overall achievement of Amhara in the mean composite score (45.2%) was found to be significantly different from other regions and consequently from the national mean. Somali performed least followed by Gambella and Harari. The mean composite scores for Addis Ababa (44.0%), SNNPR (42.5%), Oromia (42.3%) and Tigray (41.8%) were found to be higher than the national mean. All the other regions had mean scores equal to or lower than the national mean.

Trends in Academic Achievement

The achievement in the Ethiopian Third National Learning Assessment was rather very low when compared with those in the previous two studies. At national level, the difference in the mean composite score is 3.6% decline, excluding the reading score, and the difference in environmental science score (9.1%) was found rather very high.

Attitude toward Socially Relevant Issues

The result of the attitude survey in the current study showed that the country's social development curriculum was making a difference in shaping students' attitudes towards health, environmental protection, civics and ethics, cultural issues and education values in more or less the same way19s revealed by the previous studies.

In health care, the main issues were modes of transmission of diseases, family planning, mode of HIV/AIDS transmission, environmental hygiene, disease prevention and population control. Students demonstrated positive attitudes towards these issues. In environmental protection, issues related to protection of historical heritages, beautification of the school, reforestation, prevention of drought, and planting of flowers were raised. Students were unanimously positive towards all of these concerns. In ethics, respect human rights, observation of the rules of law, fighting corruption, knowledge of past history, fight against poverty, obligation to pay taxes, honesty, the habit of saving, need to use information, culture of criticism, and proper use of time were all included. In culture, the need to fight against harmful practices was emphasized while in education, participation in extra-curricular activities, student participation in teacher evaluation, and the advantages of schooling were the main issues. In all these areas, the majority of students demonstrated positive inclinations.

Background Variables and Achievement

Multiple regression analysis based on the students' background questionnaires resulted in a model which was able to explain 17% of the variations observed in the composite scores at student level. Economic variables that include parents' economic strength to buy clothes, school materials and adequate meals significantly influenced academic performance. Moreover possession of different materials at home including study tables, books other than textbooks, dictionary, radio, and textbooks were found to have significant positive influence. However possession of television at home was negatively associated with students' learning. Students' self-concept in Grade Four in all subjects under study showed positive and significant relationship with academic performance. Students' characteristics including class repetition and absence from school showed

negative relationship with academic performance while positive attitude towards school was found to relate positively with academic performance.

Multiple regression analysis based on teachers' variables resulted in a model which was able to explain 43% of the variation observed in the composite scores at school level. Among the variables positively and significantly related to students' academic performance, the most important ones were the number of times teachers were supervised, different in-service programs attended by teachers, teachers' perception of students' attitude towards school, student punctuality and discipline. With reference to curriculum the availability of teachers' guides and students' texts were found to have significant positive relationship with academic performance.

Multiple regression analysis based on the information obtained from directors' responses resulted in a model which was able to explain 30.3% of the variation observed in the composite scores at school level. A variety of school level variables influenced academic achievement. These include curriculum materials such as availability of teachers' guides and students' texts which showed positive relationship with students' academic performance. Another important variable which had significant positive relationship with students' academic achievement was the ability of schools to generate internal income using different methods such as land lease and recreation centers. Although not statistically, significant government's budget, parent's contribution, book rent and donations have positive relations with students' academic performance. Under instructional support, using varieties of teaching methods, teaching materials, assessment techniques and use of pedagogical center showed significant positive relationship with academic performance. As far as the principals' perception of students is concerned, loose student-teacher relationship, lack of class room discipline and bad habits among students were reported to have negative and significant relationship with student learning. However students' positive attitude towards school and students' discipline were found to have positive relationship with achievement. Principals' perception of teachers' moral fitness, pride in their school, and emphasis on academic subject had positive relationship with achievement while teacher absenteeism, resistance to change and shortage of teachers were negatively associated.

When student level data are aggregated with school level data, the final model was able to explain 42.5% of the observed variation. The regression was a fair fit (R^2 = .425), and the overall relationship was statistically significant ($F_{16, 186}$ = 8.592, $p < 0.000$). However, there was wide variation between the R^2 (.425) and adjusted R^2 (.376) when the standard regression method (enter) was used. Alternatively when backward deletion method which chooses the predictors for best fit model ($F_{8, 194}$ = 15.961, $p < 0.000$) was

used the difference between the R^2 (.397) and adjusted R^2 (.372) was narrower. Students' absenteeism, supervision, class repetition, distance from teachers' home to school, chore at home, teacher's guide availability, television at home, radio at home were the variables that explained 39.7% of the observed variation in the achievement score when a backward deletion procedure was followed..

The fully unconditional hierarchical linear model result, that took student level and school level data simultaneously, showed that 38.0% of the observed difference in academic achievement came from differences in schools.

The same model that took school level and region level data simultaneously showed that 8.4% of the observed difference in academic achievement came about as a result of differences between the regions.

A comparison between the findings of the current study and those of the previous two national learning assessments showed a significant decline in the achievement scores. The mean composite score as well as the mean score of each subject was found significantly lower than those of the Ethiopian Second National Learning Assessment and Ethiopian Baseline National Learning Assessment.

The findings of the qualitative study showed great similarity with those of the last study by showing that learning takes place in schools, but not at the expected standard. Conditions that influenced students' learning were identified as school supplies, student behavior, teacher behavior, availability, competence, school curricula, parental support, and school administration. Participants in the focus group discussion expressed dissatisfaction with what students achieved and learned in primary schools. There was an expression that showed students did not acquire the expected and desired knowledge, abilities and skills.

The Way Forward

Based on the findings of the study the following recommendations are proposed:

- *Steps should be taken at all levels to improve the performance of the school system. The observed low academic achievement score calls for immediate action.*
- *The high achievement in developing positive attitude towards socially relevant issues (life skills) is probably due to the priority it was given in the Education Sector Development Program. Similar attention should be given to raising the level of achievement in the academic subjects.*
- *Disparity between boys and girls still needs attention and there is a need to provide additional support to girls.*
- *There is a need to progress in academic achievement over time by making use of the recommendations made by the previous and current national learning assessments.*
- *Availing curriculum materials to students and teachers should be given priority.*
- *A culture of educational assessment at national and regional levels should spread to monitor learning achievement and identify problems.*

Chapter 1. INTRODUCTION

1.1 Ethiopia - General Context

1.1.1 Demographic and Economic Situation

Ethiopia has an area of 1.1 million square kilometers. The country has an estimated total population of over 70 million with diverse languages, culture and topography. Out of the total population of the country, 15% is urban and 85% is rural. The male/female proportion of the population is almost the same with a total number of 35.6 million (50.1%) males and 35.4 million (49.9%) females. In 2004/05, out of 14.3 million primary school age (7-14) children, 11.4 million were enrolled in formal primary schools (55.9% males and 44.1% females). According to the Central Statistics Authority (CSA) projection (medium variant), the total population is estimated to reach 81.3 million in 2009/10. Similarly, the primary school age population (7-14) will reach 16.5 million during the same year.

With regard to the economic situation of the country, about 85% of the population earns its living from rain-fed subsistence agriculture which constitutes 42.1% of the GDP. The country is one of the poorest in the world with per capita income not exceeding 100 USD, and where about 44 % of the population lives below the poverty line. It has adopted federal governance which consists of nine regions and two city administrations.

1.1.2 The Education Sector

The education sector's vision is "to see all school-age children get access to quality primary education by the year 2015 and realize the creation of trained and skilled human power at all levels who will be driving forces in the promotion of democracy and development in the country".

The mission of the education sector is to:

- Extend quality and relevant primary education to all school-age children and expand standardized education and training programs at all levels to bring about rapid and sustainable development with increased involvement of different stakeholders (community, private investors, NGOs, etc.)
- Ensure that educational establishments are production centers for all-rounded, competent, disciplined and educated human power at all levels through the inclusion of civic and ethical education with trained, competent and committed teachers.

- Take affirmative actions to insure equity of female participation, pastoral and agro-pastoral and those with special needs in all education and training programs and increase their role and participation in development.

The Government's desire to improve the provision of quality education resulted in the formulation of the Education and Training Policy (ETP), which encompasses the entire education and training sector. In 1997 the Government of Ethiopia launched the first five year Education Sector Development Program (ESDP-I) within the framework of ETP as part of a twenty-year education sector indicative plan. The main thrust of ESDP is to improve quality, relevance, equity, and efficiency and to expand access with special emphasis on primary education in rural and underserved areas, as well as the promotion of education for girls in an attempt to achieve universal primary education by 2015 (MOE, 2006).

This was an outcome of the Government's deliberate plan to implement rural development policies and strategies and to ensure sustainable development for the rural population, which constitutes 85% of the country's total population**.** Creating access to primary education for all school-age children and thereby producing educated farmers and other workers who utilize new agricultural technologies and produce for market is indispensable for the realization of the rural transformation strategy (MOE, 2006).

In addition to this, well-trained and qualified manpower equipped with modern managerial, technical, research and leadership capabilities play an indispensable role for the speedy development of competitive industries in the country. Hence, due attention is given to the reform in the structure of education system to make education and training responsive to the country's development strategy.

Therefore, the policy framework for the education and training programs is designed in such a way that it helps the realization of various development plans, i.e., rural and agricultural development, urban and industrial development and the building of democratic society.

In general, during the plan period all possible endeavors will be made to enhance the overall nation-building efforts. It is believed that these undertakings would contribute to the Government's efforts of eradicating poverty and achieving its objective of placing the country among middle level income countries in the coming 20-30 years.

During ESDP I and II there has been a substantial expansion of education at the primary level and as a result enrollment in primary schools (grades 1-8) has shown significant increase. During ESDP I the target was to increase primary enrollment to 7 million from 3.7 million in 1995/96. However, the achievement was 8.1 million, which implies an

average growth rate of 12.8% in enrollment. This trend has also continued in ESDP II with the annual average growth rate of 11.7%. Accordingly, the primary school enrollment in 2004/05 has reached to 11.4 million. With regard to the number of primary schools, there were 10,394 primary schools in 1996/97 and this number has reached 16,513 in 2004/05, which is an increase of 70.1%. Out of the new primary schools more than 85% were constructed in the rural areas.

In terms of gross enrollment rate (GER) at primary level, the achievement in 2004/05 was 79.8% (71.5% female and 88.0%males), which is higher than the revised 70% target set for ESDP. Similarly, the net enrolment rate (NER) has also increased from 24.9% in 1996/97 to 73.2% in 2004/05. The NER has shown a faster increase compared to the GER. This reveals that the age structure at primary level is changing towards the appropriate age. Both programs (ESDP-I and II) were aimed at increasing access to meet the target set for UPE by the year 2015. This denotes the Government's commitment to meet EFA and the Millennium Development Goals.

1.2 Purpose of the Study

The quantitative expansion of education has brought about serious challenges to its quality. Quality does not mean only what goes into schools, but includes what goes in the mind and physical changes of children. It is important to develop the knowledge, skills, attitudes and habits of pupils in addition to giving emphasis to input factors.

Some developing countries have tried to assess and measure student achievement and improve their educational systems. Nevertheless, most countries still apply public examinations for certification, selection and promotion. The goal of improving student learning has remained one of the most desired goals of educational processes.

In Ethiopia, quality assurance has been an important part of the reform process. To this end, the Ethiopian Baseline National Learning Assessment (EBNLA) for primary education was carried out in 1999/2000 and the Ethiopian Second National Learning Assessment (ESNLA) in 2003/2004. Very recently, the Ethiopian Third National Learning Assessment (ETNLA) has come to completion.

The main purpose of conducting the ETNLA was to provide information on learning attainments by students and the factors that determine those attainments in the Ethiopian primary education so that attention is paid to the improvement of the system as a whole.

1.3 Key Research Questions

1. To what extent did Grade 4 students achieve the stated curriculum in key subjects and to what degree does their performance vary across regions, gender, location and medium of instruction?
2. What does the students' background information and interest look like in relation to their overall achievement?
3. What do Grade 4 students' general attitudes, beliefs and preferences look like in relation to pro-social behavior and socially relevant issues at national and regional levels?
4. What are the factors that influence students' achievement in the primary schools of Ethiopia?
5. Is there any progress since the Second National Learning Assessment regarding pupils' learning achievement?
6. How do different groups (directors, teachers, students and the community) qualitatively assess the effectiveness, problems and solutions of student learning in schools?
7. What are the possible implications of the findings of the study for improving student performance and school quality in Ethiopia?

1.4 Specific Objectives of the Study

The Ethiopian Third National Learning Assessment of Grade 4 students has the following specific objectives:

1. Analyze the national Grade 4 students' learning achievement results in English, mathematics, reading, environmental science and attitudes towards socially relevant issues;
2. Analyze Grade 4 students' achievement in English, mathematics, reading, environmental science results by gender, location, and region;
3. Explore Grade 4 students' general attitude towards socially relevant issues at national and regional levels;
4. Determine the relationship between Grade 4 students' background variables and their overall achievement in the given subjects;

5. Determine the level of Grade 4 students' learning progress from baseline by comparing scores obtained in the First, Second and Third national Learning Assessments;
6. Explain the factors that influence Grade Four students' achievement;
7. Assess the opinions and judgments of different groups: directors, teachers, students and the community on the effectiveness and problems of learning in schools; and
8. Discuss and summarize the implications of the findings of the Ethiopian Third National Learning Assessment for the improvement of school quality and effectiveness in Ethiopia.

1.5 Significance of the Study

Student learning assessment involves a systematic process of collecting relevant, valid and timely information about the outcomes of schooling so that decisions are made about the learning and development of students, curriculum, educational programs and educational policy. Student learning assessment provides the necessary feedback and objective evidence required to maximize the outcomes of educational efforts. Such assessments summarize what learners know, understand, and can do in relation to some or all of the learning goals determined in the curricula.

Over the last decade, substantial attempts have been made to expand primary education, and improve access, equity and efficiency in Ethiopia. Now the emphasis has also shifted towards improving quality in all areas and in particular towards student learning achievement. This national learning assessment, therefore, provides an indication or feedback of where students' achievement in the country stands in relation to the stated profiles of the curriculum.

A student learning assessment can provide baseline information from which progress can be measured during and at the end of a key stage in education. Since it focuses on actual learning, it enables one to find out the extent to which an educational system is effective as a whole. If it is properly integrated into the system of education, student learning assessment can help actors and stakeholders to focus their collective attention, examine their assumptions, and create a shared academic culture dedicated to assuring and improving the quality of education. The first and second national assessments have provided benchmarks from which improvement can be measured. In this respect, the third national learning assessment will serve as a key tool for monitoring changes.

The Education and Training Policy of the federal government decentralizes education in the sense that regions plan and administer primary education under the guidelines and standards set by the Ministry of Education. Moreover, the policy states that primary school children should learn in their mother tongues. Regions implement the Education and Training Policy by taking their own specific conditions into consideration. This implies that some of the features of these regions affect the practice of primary education in relation to curriculum development, material preparation, teacher education, school management, teacher practices, school-community relations, language of instruction etc., and the extent to which students learn from their schooling. The Ethiopian Third National Learning Assessment contributes to monitoring how expected national standards have been implemented and if each of the regions has developed realistic mechanisms to convert national guidelines into local tools for school development.

Information on the relationship between student learning outcomes and school inputs provides an immense potential to policy makers to identify, allocate and manage the resources of education to improve quality. Like the previous assessments the Ethiopian Third National Learning Assessment provides such information along side the achievement results so that the most influential determinants of learning are properly known and managed.

Ethiopia expends a considerable amount of its public finance on education. In order for the education sector to justify this expenditure and retain support, both the government and the public require that the money expended produce the required skills. The Ethiopian Third National Learning Assessment provides access to such relevant information and this, hopefully, promotes accountability in the system.

Chapter 2. REVIEW OF RELATED LITERATURE

2.1 Overview

Concern for educational change and quality improvement its quality has been the main 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. According to Kellaghan and Greaney (2004), 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 behaviour to take place and ensuring schools' accountability to their stakeholders (the state, the parents, etc).

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 behavioral skills and values. To this end, Article 4 of the World Declaration on Education for All (1990) states 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" (p. 5). Similarly, after a 10-year follow-up to the Jomtien declaration, the Dakar Conference 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).

It is important to note that there are four main factors that gave rise to the concern of learning outcomes. First, it has been witnessed that many students who had short period of education benefit little from their educational experiences. This has been proved in a study carried out in Bangladesh where only slightly over one-third of those who had just completed primary school were found to have achieved a minimum competency level in basic learning skills: reading, writing, and mathematics (Greaney, Khandker and Alam 1998). Second, quality is perceived to be deteriorating in many countries, despite that evidence to support such a perception is not readily available. However, it is argued that deterioration is inevitable in a situation where resource allocations per student (e.g.

financial inputs decrease while students' number increases, etc) are in a declining trend. Third, given the importance of schooling in economic reform and the need to prepare students to meet the demands of the workplace, there is concern that the competences acquired even by students who stay in the education system for a long time may not be adequate to meet the needs of the information-based global competitive economy of the twenty-first century. Finally, education ministries, like any other government ministries, are increasingly seeking evidence as far as the outcomes of their substantial investments are concerned.

On the other hand, the focus on learning has been progressively shifting from input to puts 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. According to 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.

Today, the quest for quality learning achievement has become the concern of both the industrialized and developing countries. There is strong belief that the use of assessment will help improve educational quality. While assessment has been believed to influence quality learning, what type of assessment technique to be employed has divided scholars and policy makers. The answer for the appropriate assessment mechanism in exploring the status of learning may fall on plausible factors such as learning information, financial, political and logistic considerations of each country. Although, the evaluation of schools has traditionally been mediated by school inspectors or supervisors for years, since 1990s, however, many countries began to use performance of students based on achievement tests in national and state-wide assessments to determine the status of student learning.

2.2 Concept of Assessment and National Assessment

The concept of assessment may be used in education to refer to any procedure or activity that is designed to collect information about the knowledge, attitudes, or skills of a learner or group of learners (Kellaghan and Greaney, 2001b). Some institutions also define assessment as follows:

> *The process of obtaining information that is used to make educational decisions about students, to give feedback to the student about his/her progress, strengths, and weakness, to judge instructional effectiveness and curricular adequacy, and to inform policy(AFT, NCME, NEA, 19990:1).*

As reflected in the definition above, assessment has traditionally been associated with the appraisal of individuals. However, since 1980s, it has frequently been used to describe the performance of schools or of school system (Kellaghan and Greaney 2001: 19).

On the other hand, a national assessment is defined as an exercise designed to describe the level of achievement, not of individual students, but of a whole education system or a clearly defined part of one (e.g. grade 4 pupils or 11-years-olds). National assessments were introduced to address the fact that the educational data on inputs that had been collected in the past were often of little relevance or use to educational planners. As a result, national assessments would address this issue by providing information on the "products" or "outcomes" of schooling (e.g. student achievements or inequalities in the system). It was hoped that the information could be used in conjunction with the input data in order to provide a sounder basis for policy-and decision-making in education.

Kellaghan and Greaney (2004:11) further hold that there are five main issues that are to be addressed by national assessments:

- *How well are students learning?*
- *Is there evidence of particular strengths or weaknesses in their knowledge and skills?*
- *Do achievements of subgroups in the population differ?*
- *To what extent is achievement associated with characteristics of the learning environment?, and*
- *Do the achievements of students change over time*?

2.3 Learning Assessments around the World and in Africa

It has been the case that in many countries**,** school inspectorate is entrusted to look after the quality and effectiveness of schools and teachers. Kellaghan and Greaney (2004) witness that inspectors observe teachers' classroom performance and assess students knowledge and skills in school curricula. In such instances, reports are prepared on individual schools and teachers are subject to the scrutiny of the Ministry of Education. The limitations behind the school inspectorate in the assessment of learning quality lie in its diminishing role as the power of teacher unions and recognition of the professional autonomy of teachers kept rising. Moreover, lack of resources to inspect each and every school made the task ineffective in some countries. As a result and in a bid to arrive at decisions on the adequacy of the performance of schools, more formal and systematic procedures were necessary to replace the former assessment modes. This latter procedure took the context of a state-wide assessment in many countries (e.g. Brazil, USA, England, France, Nepal, and Mauritius).

Two basic models for the implementation of national assessments are used world wide. One is sample based (analytical view of achievement) derived from USA and the other approach is a census type (holistic performances) derived from the United Kingdom assessment (Greaney and Kellaghan, 1996).

In the United States, the National Assessment for Educational Progress (NAEP), which is mandated by the Natational Congress, has become a standard feature of the education system since 1969.The objective of the programme is to measure students' achievements at specified ages and grades (4, 8, and12) on 11 instructional areas.Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, and other subjects. England and Wales first applied a large scale survey or national assessment in 1948 at the age levels of 9, 11, 15 years. In 1978, an improved assessment system was made on three main areas; language, maths and science at ages of 11, 13, and 15 years. It was given much weight by politicians in the 1980s and exhibited the various functions of assessment such as formative, diagnosis, summative, and evaluative (Greaney and Kellaghan, 1996).

National learning assessment in France has been introduced since 1979 using both sample and census models of USA and United Kingdom respectively. On the sample based, students are assessed about every five years at the end of grades 7, 9 and 10 to provide information on achievements at the system level in relation to the curriculum. In the other method, the total population of students in grades 3, 6, and 10 are provided

with diagnostic assessment designed to provide information on individual schools and feed back is sent to schools, students, and parents with assisting teachers to adapt their pedagogical skills to the needs of their students.

Sample based National Learning Assessments conducted in six countries of Latin America-Chile, Argentina, Brazil, Costa Rica, Mexico, and Colombia- showed similar results in that students scored far below expectations, and students from urban and private schools scored better than their counterparts. Colombia is another country in Latin America that conducted an assessment in 1991 on Grades 3 and 5.The purpose was to find out to what extent students attained the minimum standards set in mathematics and language. Findings showed negative correlation for grade repetition, absenteeism, time spent getting to school and family size.

In Africa, there has been four major assessment categories where three of them were carried out in many countries in the 1990s: the Monitoring Learning Achievement (MLA) project, the Southern Africa Consortium for Monitoring Educational Quality (SACMEQ) project, and the Programme *d' Analysis des systemes Educatifs des pays de la CONFEMEN* (PASEC). The fourth one is assessments carried out in individual countries.

The Southern Africa Consortium for Monitoring Educational Quality is a collaborative, voluntary grouping of 15 ministries of education in Southern and Eastern Africa, working closely with the International Institute for Educational Planning (IIEP), UNESCO. According to Ross et al. (2000) and UNESCO (2003b), the IIEP has the goal of building the institutional capacity through joint training and cooperative educational policy research. To date, MLA assessments have been carried out in 47 countries in Africa; SACMEQ assessments in 15; while PASEC, in 9 (p. 11).

Between 1999 and 2002, 15 countries participated in SACMEQ II: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (mainland), Tanzania (Zanzibar), Uganda, Zambia, and Zimbabwe. According to Kellaghan and Greaney (2004), a total of seven national reports have been published with 14 more due to get published (p. 33). The aim of SACMEQ is to promote capacity building by equipping educational planners in member countries with required technical abilities to monitor and evaluate schooling and the quality of education. The SACMEQ Consortium also provides with valid and accessible information systems serving as a basis of decision making and stakeholders' involvement with greater transparency.

As mentioned before, twelve African countries including Burkina Faso, Cameroon, the Republic of Congo, Cote d'Ivoire, Djibouti, Guinea, Madagascar, Mali, Niger, the Central

African Republic, Senegal, and Togo have participated in PASEC. Like SACMEQ, PASEC also encourages the involvement of senior decision-makers and other stakeholders in policy issues, and emphasizes the need to base decisions on reliable data and to follow up these decisions with realistic agenda for action (Kulpoo and Coustere, 1999). In PASEC, pupils of Grades 2 and 5 were assessed in French and Mathematics. Later, it expanded to include pupils in all grades from 2 through 6, while data were collected from pupils and teachers on a variety of school and background factors. According to Kellaghan and Greaney (2004), PASEC differs from other national assessments in Africa in that pupils are assessed both near the beginning (November) and at the end (May) of the academic year. This is done to obtain indications of growth or the "value" added during the year under consideration, though it only captures pupils who survive in the system.

The fourth category of national assessments is unrelated to any of the above assessments for it comprises assessments that are carried out in individual countries. It must be noted that the assessments we have seen thus far share a number of common features: all are policy-oriented involving planners and managers, and are designed to provide information for policy-making. All of them are required to assess student achievements in basic curriculum areas. Moreover, all of the assessments employ an input-output model of education system and attempt to identify factors associated with achievement **(**ibid**,** p. 12). Similarly, all of the assessment programmes provide reports as related to impact in policy debate and formulation, reviews of educational policy, in national education sector studies, in the reappraisal of the adequacy of resources, and in supporting policy decisions. For example, Kenya has introduced benchmarks, such as desks per pupil and textbooks per pupil, etc. Moreover, assessment results are considered to help identify system weaknesses and justify the allocation of sufficient resources and granting of major donor support.

Many scholars view that one of the problems of assessments in Africa is that most of the national learning assessments carried out are sponsored or supported by non-government agencies. As a result, it seems that the assessments were not based on felt needs to be integrated in to the formal structures and activities of education ministries. On the other hand, there is a clearly felt need and priority to get rationalization so that national assessments become part and parcel of the entire educational programmes.

2.4 Purposes of National Learning Assessments

As educational institutions are one of the essential societal arenas established to upbring citizens with desired knowledge, skills, attitudes and values, ensuring that schools are living up to their expectations becomes a necessity. In other words, there has to be a clear understanding that getting children into school is only a first step in achieving the goal of education. Reform must be made and focused on how much learning acquisition and outcomes take place, rather than counting on mere enrolment (Kellaghan and Greaney 2004). However, many countries used to consider educational quality as having less role, while pursuing the policy of quantitative expansion. One way for improving pupil achievement and school quality is the use of national learning assessments. Carroll (1996) says that national assessments would provide teachers and parents with more quality information about students' achievements and help identify students at risk of educational failure and provide the basis for remedial actions. Moreover, he notes that national assessments serve as reminders of the need to ensure that adequate personal and financial resources are available to undertake educational activities in a competent and timely manner. According to Kellaghan and Greaney (2004), national assessments are motivated for the following underlying purposes:

- to raise educational standards;
- to provide information that can be used to serve for decisions about the allocation of resources;
- to obtain information that can be used to assign accountability for student performance;
- to serve as part of modernization movement;
- to alter the balance of control in an educational system. It may be used to ensure what is taught in schools is less dependent on the professional judgment of teachers, and more dependent on central authorities that mandated the assessment.
- to compensate for the weak assessment practices of school teachers. For example, in Egypt, the introduction of a national assessment involving all schools came as a response to problems of inefficiency (high rates of early school leaving and grade repetition) that was attributed to deficiencies in teachers' assessment practices. In this regard, teachers were believed to have lacked clarity on the objectives or procedures of assessing their students.

2.5 Focus and Importance of National Learning Assessment

As seen in the foregoing parts of this survey, a concern with educational quality has been the basis for the rise to modern assessment. 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, behaviour, and attitudes (p. 29). 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 a baseline data on student achievement against which to measure progress or excellence being registered in the educational programme. In the mean time, 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.

Another focus of modern assessment system is the use of external agencies. The underlying justification includes the assumption that one may not totally rely on school-based assessment. Moreover, the time needed to gather data and generate information for decision-making process, cost-effectiveness, the need for holding schools accountable so as to raise school improvement and to address the decision makers' expectations of the same and their continued attention to the topical areas covered in the assessment undertakings. On the other hand, Linn (1983, 2000) and Torrance (1997) hold that school improvement may not necessarily match with assessments that are intended to measure them. One cause for the focus on external assessment is believed to be the erosion of the role of school inspectorates. Moreover, technological advances in assessing and processing of larger data expeditiously with cost-effective manner have provided the means of establishing an alternative system of accountability based on students' achievements.

Finally and most importantly, besides serving as a means of obtaining information on the status of educational systems, assessment is used as a lever of reform (Madaus and Kellaghan, 1992; Popham, 1987). It is generally agreed that assessments play significant roles in changing teacher behaviour as well as classroom instruction, both of which are expected to raise the standard of students' learning. The use of assessment

also enables to provide policy guidance to the education system; information based on assessment will be made available without delay to educational planners, administrators, schools and the general public; observing accountability both at ministry and school levels as per their range of responsibilities.

In summary, assessment that affects the quality of education focuses on student achievements; an assessment carried out by an agency outside of the school; and the expectation it is to meet as a lever of reform. All of the three features can be applied to national as well as international assessments.

2.6 Methodological and Technical Considerations in National Learning Assessment

2.6.1 Scope and practices

National learning assessments are principally designed to describe the level of achievements of a whole education system, or a clearly defined part of it. To Murphy, et al. (1996), national assessment takes place on regular basis. There are similarities and differences in national assessment systems around the world. But all of them include assessment of students' first language and mathematics. Science is included in some while second language, art, music, and social studies may also be included. In almost all countries, students are assessed at primary school level, while in some systems they are assessed during their period of compulsory education in secondary levels. In some countries, assessment is carried out every year, with the curriculum area to be assessed varying from year to year. In others, assessments are less frequent. It must be noted that the participation of schools in assessment may either be voluntary or mandatory. Scholars, however, hold that when assessment takes place in voluntarily, non-participation may affect or bias its results. Consequently, it may not provide an accurate state of achievement based on information.

Since national assessments are relatively new undertakings in the educational systems, many educational planners and administrators may be vaguely familiar with what they involve. As a result, there will likely be diverse understandings on the way data are gathered and the amount to be used. Moreover, educational authorities may also fail to understand the various steps involved in carrying out the task. Despite lack of uniform understanding, however, the centerpiece of assessment is the collection of data in schools, where students are made to respond to the instruments or tests and questionnaires in groups, and the total engagement of time for a student is unlikely to be more than a few hours. On the other hand, teachers may be requested to complete questionnaires to provide information that is relevant to the interpretation of their

students' achievements. The administration of assessment instruments to students may be entrusted to teachers in the school, or examiners may be sent in from outside the school. Sometimes, supervisors can pay a visit to sample schools to ensure that assessment procedures are adhered to. In all cases, the overall organization of national assessment is guided by the Ministry of Education (MOE), where a relevant agency (from the Ministry or an independent external body, such as the University department, a research organization, etc) is involved in gathering, analyzing and publishing assessment results for intervention.

In another perspective, educational planners and decision makers need to know and opt for the assessment models to be employed. Though the model to be used may vary depending on the objectives and the level of development of each country, we have already mentioned that there are two models of national assessment. The United States model of National Assessment of Educational Progress (NAEP) adopts an analytic view of achievements and relies on assessment under standardized conditions but in a few sessions. On the other hand, in the United Kingdom's model of learning assessment all students in the relevant age participate in a census (population) operation. Consequently, British assessment model is considered as holistic and performance-based that is integrated into everyday classroom practice. It is also administered for several days by teachers. This is done to avoid the artificial separation of assessment from the teaching-learning process.

In American national assessment, each student takes only a fraction of a large number of assessment tasks (matrix sampling). It is believed that such procedures allow for extensive curriculum coverage without demanding students to spend a lot of time responding to tasks. Another difference between the two models is that the American model of assessment doesn't venture to provide information about individual schools or districts while the British model does. The American model monitors learning achievement over time and is not designed to impact directly on schools and teachers. Conversely, the British model was designed to impact on schools and teachers, by providing teachers with exemplars of good assessment practices that would influence their curriculum priorities and methods of assessment and through the publication of information on the performance of students in individual schools (Kellaghan and Greaney 2001: 36-37).

2.6.2 Methodological and technical considerations

In conducting any national assessment, there has to be a policy decision. This is necessary because a national assessment raises a number of issues that need to be

resolved before the assessment begins. According to Kellaghan and Greaney (2004: 37-38), some of the major leading issues that are likely to arise include: competence domain to be assessed; population for the assessment; the type of comparison to be made (e.g. between regions or districts); administration of the whole or part of the test; the standards (mastery level to be taken as reference point); stakeholder involvement, etc. Moreover, the policy decision entails the form of assessment to be employed, the choice between a complex procedure that extends over several days involving observation, tests, and checklists to be made by teachers. These activities can either be carried out by students' own teachers (e.g. United Kingdom) or by teachers from another school (e.g. New Zealand).

There is also another technique to be applied in which a test can be administered under standard conditions. According to Kellaghan and Greaney (2001), most countries apply this latter approach though the former provides more 'authentic' assessment of students' performance in a variety of situations. The use of tests is, also regarded as more 'objective' in providing a better basis for comparisons between schools, or over a period of time. As a result, the use of either the complex or standardized test procedures depends on the objectives of the assessment, application of the result, and the resources allocated to conduct a meaningful assessment task.

The quality of instruments to be used for measuring achievement deserves more attention than usually given. Assessments for international assessment or studies are of a high technical quality where this may not be true for national assessments. Hence, a need for improvement and a relevance of design to measure basic scholastic competences must be made. Institutions and people who undertake the assessment, therefore, have to make sure that the instruments can assess high-level knowledge and skills that students are expected to acquire. As discussed in the aforementioned paragraph, assessment decision is also related to the population that will be targeted or included in the assessment. To this end, the decision whether to include all students in a school or whether the basis of inclusion will be made on the basis of students' age or their grade level enrolment must be clearly known. However, the selection of grade level rather than age level has an advantage and is easier to administer an assessment to students who are in the same grade than to students spread across grades. In this regard, more than one grade level may be selected in order to provide some indications of changes or progress associated with years of schooling (Grade 3 and 5).

Another decision to be made is whether the national assessment is to be conducted in all schools or if the inferences from the sampled schools are made to explain the performance of an entire education system of a given level. The former approach is

considered more expensive unless plans are sufficiently in place to act on the information obtained at each individual school. The usual option and practice, however, rests on sampled schools.

The type of data to be collected in National Learning Assessment needs prior and informed decision. The type of data source (e.g. teachers, students, or parents) also matters a lot in the interpretation of findings as related to students' achievement. Scholars believe that the common information in learning assessments includes inputs such as school buildings, teacher qualifications, and the socio-economic conditions of students' families and communities. While it may be appealing som times to collect as much information as possible, an important consideration to be made is how the collected data is to be used and the availability of resources to make sound analysis.

Consequently, it is appreciated if some issues of interest might be deferred to other types of research or later time to undertake both a manageable and cost-effective assessment work. Due care must also be taken that the design of the assessment instruments can provide the type of information required. Still, another serious consideration to be made before embarking upon a national assessment is the resources, political and technical aspects that will be required to support it and see it through. At the political level, a wide range of stakeholders (e.g. steering committee) and the concerns of all those involved in the education system, have to be represented to provide support for the exercise. Experience indicates that people who are in the decision-making position, in allowing required resources (e.g. a minister or a deputy), must be convinced that the assessment information is relevant and useful in identifying problems and informing policy and practice. It must be assured that resource allocation and planning takes into account a variety of social, economic, and political factors. At the technical end, competence in assessment instrument construction, sampling, analysis, and the management of a large-scale survey will be required in order to come up with meaningful assessment information that helps intervene with policy decisions.

The foregoing preconditions may be difficult to be fulfilled in many developing countries to carry out sound national assessment. Inadequate funding, lack of technical capacity, incomplete data on schools (educational management information systems-EMIS), and logistic problems associated with poor infrastructure in the area of transport, telecommunications, and postal services are some of the factors that constrain national assessments. At the practical end, a steering committee composed of the Ministry of Education identifies the population to be included in the assessment, while test administrators are to be trained by the implementing agency. For a further

comprehensive national assessment procedures to be followed, refer to Kellaghan and Greaney's work (2001:35).

One last important consideration to be made in national learning assessment is the sufficient time is required for the job. A considerable time allocation is necessary for preparing data collection instruments, carrying out fieldwork, analysis and the preparation of reports. In addition, care must be taken so that student achievement outcomes are properly assessed; methods of sampling are followed in order that data are collected adequately to represent the achievements of the education system.

2.7 Presentation and Use of the Results of National Learning Assessment

2.7.1 Presentation of assessments

The presentation of results for a national assessment differs from presentations of more traditional forms of assessment in a number of ways. The main difference arises from the fact that the primary interest in a national assessment is in the aggregated performance of students, not in the performance of individual students (Kellaghan and Greaney 2001:47). According to these authors, the results of an assessment in forms of an average of raw**,** percentage or scores does not in itself, convey a great deal of information. There are categories under four headings: the analysis of student achievements; norm-referenced; criterion-referenced comparisons and examination of relationships between achievement and other indicators.

Moreover, student assessment results are expressed as mastery of curriculum domains or objectives (e.g. mathematics, science, etc); cognitive processes (e.g. providing evidence of students' use of hierarchically defined cognitive processes in assessment tasks); performance on attainment targets (an indication of the proportion of students that achieved attainment targets in the curriculum.

Assessment data should be of particular interest to educational policy-makers and administrators, such as senior ministry of education officials (planners and managers) and politicians. Policy-makers, planners, and managers should ensure that an assessment is in accordance with other instructional guidance mechanisms in the education system. For example, if the skills and knowledge assessed in a national assessment differ from those assessed in a public examination to which high stakes are attached, teachers will be unlikely to pay much attention to the assessment results in their teaching. If the findings of an assessment indicate the need for new approaches to teaching and learning, teachers through out the education system will need to be provided with relevant information. When data are available about schools, the

publication of school results in league tables might be interpreted as signaling to some schools the need for improvement which might demand prompt action.

Kellaghan and Greaney (2001: 56), explain that there are a number of ways in which a national assessment can impact on teachers. Assessment has to be able to improve teachers' assessment skills, as well as develop their understanding of the reforms that underlie the former. To this end, national and local workshops are also necessary to discuss the results of assessments and their implications. Information on national and regional results needs to be dispatched to individual school teachers in various media (e.g. newsletters and brochures. In addition, profiles of high-scoring schools are to be known and contributing factors such as the number of hours in a week devoted to a curriculum area, teachers' emphases on specific content areas, teachers' educational level, school facilities, and the number of textbooks available per students need to be stated.

2.7.2 Use of assessment results

It is obvious that considerable resources are invested in national learning assessments in order to ensure that they provide sound feedback to the education system in view of the intended objectives of learning and overall effectiveness of the system. However, evidences in many of the developing countries show that the information obtained from the assessment is not either effectively communicated or used for policy decisions (e.g. to revise curricula or to address equity issues). This leads to the assumption that the potential of the assessment data is not fully applied commensurate with the resources expended. Unless assessment results are integrated into the educational policy decision-making processes, it can not have considerable impact on the quality of students' learning. Hence, there have to be effective strategies to be drawn in a view to the communication and use of assessment results.

While it is possible to provide all information derived from assessment of a single report, it may be more effective and user-friendly to prepare a number of reports. For instance, summary data may be adequate in a publication form, while policy makers at a time, may need details of information. On the other hand, curriculum developers and evaluators, textbook writers, and teachers need to know how students performed in the areas of curriculum. Moreover, if assessment of similar scope is to be repeated, the technical expertise such as data gathering instruments, sampling techniques, and related procedures, may be important to be explained to be used for the future. To this end, use of various media must be employed in disseminating assessment results. Summary charts and displays of the differences by curriculum domains are very

important for the interventions to be made by practitioners. But more emphasis must be made on the general conditions of schooling that significantly influence curricula and textbooks, the influence of national examinations, class-sizes, teachers' competence, etc that are instrumental to affecting teaching-learning modes in schools.

On the other hand, gross accountability to assessment results is problematic in many forms and care has to be taken in the use of findings. For example, if accountability is to be alluded to teachers for the students' performance, it may not make adequate allowance for the various circumstances in which schools operate, or the type of students being served. Evidences witness that laying accountability in this direction has not been found satisfactory, as the use of assessment results may lead to a variety of pedagogical practices, such as "teaching to the test", simply to improve the mean level of a school's performance. But such pedagogical practices can not be matched with broader learning achievement constructs where intended reform is to be promoted.

As assessment takes many forms and serves several purposes, the response to the findings should squarely address important issues affecting the education system (e.g. supervision and school support, teachers' classroom practices, external or public examinations). Hence, policy makers are to strive to ensure that national assessments are aligned with other essential instructional mechanisms in the education system: curricula, teacher education, school capacity building, measures to address inequities, etc. Such policy measures make national assessments to be effective instruments in improving the quality of education and learning.

The use of national assessment data is usually made at two levels: system and school levels. In many countries, the findings of national assessment are used at system level. One of such use is meant in the curriculum revision. For example, in Brazil, the findings of national assessments have been used to influence changes in curricula and pedagogical innovations. It also influenced human resource training and policies regarding the financing of schools serving disadvantaged areas. Similarly, Chile's assessment information was used to decide how supervisory staff is used to influence effective learning.

At school level, responsibility for addressing deficiencies that may be identified in a national assessment lies with the institution or person that is considered accountable. However, in situations where data are collected in a relatively small sample of schools, participating schools are assured that results for individual schools cannot be identified. This leads to the fact that individual schools, teachers or students will not face sanctions based on the national assessment performance.

On the other hand, assessment in which information is obtained from all schools in the country (e.g. in UK, France, Chile, Uruguay) has the capability of identifying poorly performing schools and teachers. In this regard, it becomes easy to allocate responsibility on the basis of student performance. It also means that the school is certainly being held accountable and warranted when assessment results are published in league tables.

But collecting assessment data from all schools does not necessarily imply that responsibility for performance will be laid at the door of the school or teacher. Sometimes, the central government holds itself accountable for educational quality and for intervening on behalf of impoverished communities, rather than placing the responsibility on individual schools. Consequently, results of individual schools or teachers are not published, and assessment data are used primarily for diagnostic purposes (Benveniste, 2000).

Scholars, however, argue that there is no point in carrying out a national assessment if its findings are not communicated to potential users, and are not acted upon. Assessment findings have to be communicated to potential users such as the education policy makers and administrators, who will be responsible for making decisions about such matters as the adequacy of curricula or the allocation of resources and for integrating an assessment in to other instructional guidance mechanisms.

In summary, countries are more likely to attach high stakes to the performance of teachers, schools, and districts than students. However, in some countries, the stakes are directed both to students and teachers. For example, the stakes related to students may involve non-promotion from one grade to another or to obtain a high school diploma. Similarly, for teachers, it may mean salary supplements or a decision to terminate an appointment for principals. Schools, as institutions responsible to lead amicable educational programmes, may face loss of accreditation and sanctions may be laid on the public dissemination of results (Shore, Pedulla and Clarke, 2001).

2.8 Major Factors Attributable to School Quality

Good learning outcomes are associated with many factors. Above all, they are the outcome of school quality. Fuller (1986) considers the term “school quality” to be associated with student’s level of academic performance. Hence, school quality is a combination of material inputs allocated to school per student basis and the level of efficiency with which fixed amounts of material inputs are organized and managed to raise student achievement (Fuller, p. 12).

In general, school quality is the character of the instructional process experienced by each student and the school's efficacy in developing cognitive proficiencies. On the other hand, there are some essential inputs and processes that contribute to effective learning process in schools. Factors that significantly affect schools may be classified as school-level inputs and out of school ones. The school-level inputs include teacher quality, school management, teaching materials, class size and related ones. The out of school factors or inputs are such inputs that are related to family background and the learner, and the school-community relationship.

2.8.1 School-level factors

Teacher quality: Teachers are one of the essential elements in quality learning. According to Fuller (1986: 63), the quality of teachers constantly influences school achievement. The scholar holds that the most marked effects are teachers' experience and verbal competence. In addition, teachers' schooling level was most strongly related to achievement of primary school students and pupils from lower-income families. Delors et al. (1996,) also contend that teacher's role in the early form of education is crucial in forming a positive self-image and personality in the learner. Hence, the main functions of teacher education, both pre- and in-service, has to equip teachers with ethical, intellectual and emotional capabilities to develop balanced range of qualities in their pupils. On the other hand, if teachers are to be effective in their school activities, they must not only be trained but also receive adequate support characterized by a system of evaluation and supervision that helps them to diagnose their pedagogical difficulties. Delors et al. further hold that due recognition of the teachers' profession serves as a tool to discharge their duties with dedication and strong sense of responsibilities.

Achievement effects are considered to be more consistent with teachers' length of tertiary schooling and with the number of teacher training courses. For example, in West Malaysia, in the study of 89 secondary schools, a notable correlation was found between the length of teacher training and student achievement. Teachers are also believed to learn through group work and from fellow experienced teachers and researchers in their particular disciplines. Their on-job training has to also be flexible to enhance the skill and motivation of teachers and improve their status (ibid**,** p.158). In another development, in one of the recent reviews of the factors that influence achievement in the Third World classrooms , teachers' characteristics and ways of organizing their classroom has been found to help improve learning. Consequently, according to Avalos and Haddad (1981), teacher's attributes and skills that have bearings on school effectiveness include:

- academic and intellectual profession;

- creativity and inventiveness;
- internal motivation for teaching;
- participation in the in-service teacher training;
- teacher's high expectations for student performance;
- knowledge of subject matter; and
- teacher's beliefs about the purpose and utility of schooling.

Avalos and Haddad also argue that classroom social structure and management guided by the teacher equally influence school learning achievement. Similarly, initiating questions and discussions with students, emphasizing student's problem solving skills, teacher's praises of student achievement, organizing norms that encourage effort, trust, and mutual respect among students and teachers positively influence quality learning. Moreover, effective use of instructional time, the level of performance standards and expectations set for students, the extent to which teachers evaluate students' performance and teachers' ability to motivate students to learn are the behaviours that are important inputs in and around classrooms.

In summary, good learning outcomes are associated with teachers who plan for teaching and put into practice what they have learned in their pre-and in-service courses through remediation of students' work regularly. Scholars fully believe in the fact that effective schools cannot exist without effective teaching. This makes teacher development a crucial issue in school improvement agenda. Furthermore, headmasters who emphasize teaching and learning in their management and that also actively support their school instruction contribute greatly to school learning achievement

School management: The quality of school management can be conceptualized in a framework of active and responsible headmasters who strive for achieving school goals. Research on management practices in developing countries and how headmasters act to bring about improvement in school's instructional programme is little known. However, proxy researches have been employed to indicate the quality of a school's headmaster. One recent study in Egypt of 60 primary schools found out that students performed better in schools with principals who had attended more training courses and had longer teaching experience prior to becoming a principal (Fuller, pp. 45-48).

On the other hand, headmaster's influence in school improvement can be expressed in various forms: encouraging teacher's participation in solving problems; frequent evaluation of teachers' performance; guidance on the use of curricula and encouragement of different approaches of teaching; and competence in budgeting and accounting for materials inputs. Delors et al. (1996) also argue that research as well as

empirical observation shows that the school head is one of the main factors in determining school effectiveness.

Furthermore, the scholars believe that a good school head is capable of establishing effective teamwork, and is seen as being competent and open-minded to achieve major improvements in the quality of their school. An effective school organization is the totality of the headmaster's management capability, a feeling of collegiality among teachers, norms of achievement set and the school's legitimacy in the broader community (Fuller, p. 15). To this end, special training that helps them to discharge their obligations and increased responsibilities is one of the factors which is significantly important.

Still, one important learning input that is closely related to school management is inspection. Inspectoral mechanisms have to be applied not only to check teacher's performance but also to maintain professional discussions with teachers to develop knowledge, methods and sources of educational information. This helps to identify ways of rewarding good teaching in school. In general, school management ensures that schools have competent management personnel. It is also a venue for introducing a pool of ideas about the aims and methods of teaching within specific settings. The overall emphasis in school management is that schools have competent management personnel and to enhance learning outcomes, where teachers' role is geared to achieving them (Delors, et al. 1996 148).

Learning materials: Material inputs that are directly linked to the instructional processes consistently influence pupils achievement. Many scholars hold that school's learning achievement is a function of the material inputs expended per pupil and the efficiency with which these inputs are managed by the teachers and the headmaster (Fuller, 1986). For example, of the 22 studies on the influence or role of textbooks, 14 have been found to have a significant effect on achievement, while the intensity of school library utilization also contributed to student achievement. Scholars are also of the opinion that the quality of teacher training and teaching is, to a large extent, dependent on teaching materials, particularly, on textbooks.

It is believed that quality teaching materials can help even inadequately trained teachers to improve their teaching skills and upgrade their own knowledge. As a result, there is no doubt that essential teaching materials such as textbooks considerably affect school learning improvement. Materials directly related to reading and writing, therefore, bear consistent influence across several studies. To this end, the availability and use of textbooks has direct influence in learning. In Uganda, textbook availability strongly influenced student learning achievement in English language. In Malaysia and Chile,

textbook availability was related to higher achievement (Fuller, p. 29). The influence of textbooks also appears to be stronger within rural schools and among students from lower income families. The underlying reason is that many parents in the rural areas received less or no schooling. As a result, textbooks remain the only essential learning inputs for these students. However, student-textbook ratios made no difference on levels of pupil achievement in many of the above studies.

School library is another instructional resource that significantly influences pupils achievement. The most consistent findings from Latin America shows that school library is related to better school performance with multiple measure of school library utilization. Furthermore, loan from school library was significantly related to student achievement levels in Argentina, Mexico, and Brazil (Fuller, p. 32).

Class size also influences student's learning achievement. While research in developing countries related to this issue does not indicate effects, in other studies, reduction in class size has been found necessary both to raise achievement and free up resource allocations in order not to diminish student's overall achievement. In this regard, a study carried out in Colombian urban schools shows that smaller class size is related to significant and higher learning achievement (ibid**,** p.24).

Medium of instruction: Another important learning factor, but usually underestimated by many, is the language of instruction. According to UNICEF (2005), the issues related to language of instruction are central to improving student learning in the African classroom. For example, the 2003 biennale concluded that evidence of the instructional effectiveness of the "bilingual" or "early transition models" compared with the traditional international language of instruction models, was compelling.

It was documented that constraints faced by many "bilingual early exit" programme are usually followed by insufficient teacher preparation. The academic progress of children in this "early-exit" model starts to slow down during grades 4 and 5, and by grade 6, students can no longer keep up with learners who stay in mother tongue education (MTE) programmes to the end of primary school (ADEA, 2006:13). Studies in many countries in Africa also show that the moment the medium of instruction switches to foreign languages, there is a steady decline of academic achievement among students. On the other hand, experiences in Nigeria and South Africa shows that students achieve better results in English and other academic areas when they have at least 6-8 years mother tongue education plus good teaching of the international language as a subject. The study also added "Three to four years mother tongue education (MTE) is not enough" (ADEA, op cit).

On the other hand, shortages of instructional materials in African languages, poor and limited cultural relevance of curricula, and the absence of well defined national language policies are some of the stock-taking reviews by ADEA (2006). In conclusion, the bilingual model proposes what is known as an "additive model" with African languages as the language of instruction for 6-8 years combined with high quality instruction in a second international language or language of wider communication (LWC).

According to ADEA's position, foreign language of instruction does not only have negative impact on student learning, but teachers are also ill-prepared to deal with this reality (p. 5). Rather, the use of local languages as media of instruction takes into account decentralization, parental and civil society participation as key factors contributing to school effectiveness. UNICEF further argues that pupils' achievement is significantly enhanced if they become literate in their mother tongue (UNICEF, 2000:7).

2.8.2 Out of school factors as inputs to quality learning achievement

Family background and the child's personal characteristics: Factors external to school programs also influence the child's final academic achievement. In many of the developing countries, the demand for child labour earnings in the rural and urban poor families affect school attendance and learning achievement significantly. Opportunity costs of both entering and continuing through school also vary. For example, in Mexico, Brazil, and Egypt, children of more productive rural families attend school less, mainly due to opportunity costs. Furthermore, material and health conditions affect the child's learning interest and ability. Students' performance between urban and rural settings also varies. For example, Fuller witnessed that in Egypt, rural primary school students perform one grade level below their urban counterparts. Similarly, in Kenya, rural school performance on national examination is one-third below the mean performance of urban schools, while in Brazil the urban youth (ages 12-15) complete four years of school on average. This is one to one and half years in rural schools (Fuller, 1986:2).

In general, scholars are of the view that a nation's wealth is related to a student's average achievement levels in at least two ways. First, infants and young children in more affluent countries experience a higher material quality of life, especially in terms of nutrition, physical health, and cognitive stimulation. Consequently, it is believed that children in wealthier nations enter primary school with stronger physical and intellectual competencies. Second, the demand for the child's labour is lower in industrialized nations. The fact that many children in developing countries are required to work in agriculture or take up urban jobs for a considerable part of each day during, especially, planting and harvesting seasons, affects their academic achievement (ibid**,** p.34). On the

other hand, studies indicate that in developing countries school quality has more influence than family background or does social class. Fuller further argues that school quality is a stronger determinant of achievement in mathematics or science curricular areas which are not linked to indigenous language or knowledge.

School-community relations: The relationship between schools and the community is considered as having an important role not only for students' achievement but also for the motivation of teachers. With meaningful relations between the school and the community (teachers, headmaster, etc), teachers not only feel that they are part of the community, but also become more sensitive and responsive to the needs of their communities. This contributes greatly to school effectiveness as the school is able to grow in symbiosis with its milieu.

In a study carried out by Carino and Valisno (1992), in Philippines, the achievement of students increased after a closer relationship was established between parents through the Parent Learning Support System (PLSS). The PLSS recognizes parents as teachers of children and facilitates their collaboration with professional teachers. There are shared decision-making forums for which teachers and headmasters are trained to practice effective collaboration for the teacher-parent and teacher -pupil dialogue. In the parent-education seminars, parents are counseled on how to contribute to the education of their children. The programme is monitored by a joint teacher-parent school support system.

In general, many educationists value the involvement of parents in the teaching activities in collaboration with trained teachers in a bid to improve school attendance, the quality of teaching and social cohesion in school (Delors et al., p. 151). According to the scholars, findings in many studies indicate that high expectation of parents and teachers has a positive correlation with high curriculum standards, more student hours in learning tasks, and closer teacher- pupil relations at school. Such conscious collaboration between the school and the community is useful in enhancing learning achievement especially in the intellectually demanding subjects such as mathematics (ibid**,** pp. 240-241).

UNICEF lists four broad categories of variables that contribute to better school outcomes or academic achievement in school as given below. However, also noted that most inputs in themselves are unlikely to constitute a set of actions that is sufficiently comprehensive to truly improve school performance.

Table 1. Variables that contribute to better school outcomes

Supporting Inputs	Enabling Conditions	School Climate	Teaching Learning Processes
Parent and community support	Effective leadership	High expectations of students	Variety of teaching strategies
Healthy learning environment	Capable teaching force	Positive teacher attitudes	Frequent homework
Effective support from the education system	Flexibility and autonomy	Order and discipline	Frequent student assessment and feedback
Adequate supplies of books and materials	High time (days and hours) in school	Organized curriculum	Participation (attendance, continuation, and completion), especially for girls
		Rewards and incentives	
		High learning time (time on task)	

Source: UNICEF Curriculum Report Card (2000: 43)

Finally, it is important in this regard to note that the Parent-Teacher Association (PTA) was established in our school system since 2002 to serve the aforementioned purposes in Ethiopia. Its role of bridging the relations between schools and the parents or the community is to improve learning effectiveness besides its leadership support to the school. The association is also mandated to monitor the quality of learning process and teachers' performance. However, the capacity of the members of the association has to continuously be upgraded in order that they discharge their duties and responsibilities as related to school effectiveness.

2.9 Overview of Learning Assessments in Ethiopia

Though official educational assessment in its strict and modern sense may not be considered as an integral part of the country's education system, the first need for educational review in Ethiopia could be considered to have taken place in the early 1960s. Such pioneering effort was prompted by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The underlying cause was that UNESCO wanted to find out whether the then popular studies of Schultz Harbison and others on human capital theory hold true in countries like Ethiopia in order to expand their education system (Tekeste, 2006: 16).

This was followed by the Addis Ababa Conference on African Education that was convened in 1961, where all African States took part. One of the resolutions passed by the Conference was the commitment of African States to achieving universal primary education by 1980. On the other hand, by the end of 1960s, the Ethiopian government and many of the educational partners (especially the World Bank) realized that the sector was experiencing a critical crisis. The paradox was that the education system was producing far too many secondary school graduates who could not be easily absorbed by the modern economy, while at the same time the great majority of Ethiopian school-age children had no access to primary education. As a result, winning universal primary education by 1980 was a goal that proved unrealistic in the then Ethiopian context.

The problem of widespread illiteracy and the anomalous situation of secondary school graduates becoming "unemployed educated" and the growing dissatisfaction at the country's lagging performance to achieve UPE, instigated the first Ethiopian Education Sector Review (ESR) between 1971 and 1972. According to Tekeste (1990, 2006), the study took place at a time when only four percent (4%) of the appropriate age group attended secondary education and between 10-12% of the primary school-age group was estimated to attend school. The primary task of the Education Sector Review was to make the rural population the main target of the reform system as the slow pace in spreading education into the rural area (where an estimated 90% of the population then resides) was deplored both by the Ethiopian government and its development partners. However, when the ESR was made public, the Imperial system was on the verge of political crisis due to famine that claimed millions of the country's citizens. Moreover, other social and economic factors contributed to the abolition of the system in 1974. The ESR also remained simply a memory of the mid 1970s educational review event.

The military era's education system which attempted to cultivate the young generation with the Marxist-Leninist ideology had shown a relative progress in the area of enrolment and expansion. According to Tekeste, though enrolment at primary and secondary schools during the years between 1975 and 1989 grew at a rate of 12 percent of the 7-16 year-old school age cohort, the deterioration of pedagogical conditions affected the over-all quality of learning. Clapham in Tekeste (1990) quoted Poluha (2004: 182) and commented that though the Imperial education system might have lacked relevance, "a fairly good education for a relatively small number of children had under the socialist regime been transformed into quite a poor education for a much larger number of children".

As a result, the military government in 1983 commissioned an evaluation of the education system with a view to devising strategies for the "implementation without delay

the objectives of education" (Tekeste, 1990: 18-20). Financed by UNICEF, World Bank, and the Swedish International Development Authority (SIDA), it was possible to conduct of a nation-wide Evaluative Research of the General Education System in Ethiopia (ERGESE), where the final report of the study was published in 1986. Tekeste, however, noted that the government then in power hardly benefited from the study. In general, very few resources were made available to bring about the quality of the education system in the recruitment of teachers, educational materials supply, etc. While education is considered as one of the areas of priority, throughout the 1980s, the system, however, could not get sufficient resource shares nor the recommendations from the ERGESE study used to intervene in the quality problems of the system.

After the fall of the military rule, the Education and Training Policy (ETP 1994) came to replace the prior educational systems in a much different form and content. The policy, which capitalizes on the achievement of universal primary education, also pays considerable attention to quality learning. For example, the first objective states: "develop the physical and mental potential and the problem-solving capacity of individuals by expanding education and in particular by providing basic education for all". Moreover, the cultivation of cognitive, creative, productive and appreciative potential of citizens by relating education to environment and social needs calls for quality of education and training (ETP 1994: 7-8). The assessment section of the policy document also envisages that there is a continuous assessment procedure in academic as well as practical learning including the use of aptitude tests in order to ascertain the formation of learning profiles at each level (p. 18). Similarly, in the Education Sector Strategy section, the need for educational assessment reads: "An evaluative system which, is designed to test the achievement of the students' profile constituting of academic, practical and aptitude will be instituted…" (p. 16).

In a bid to achieve universal primary education and also intervene with quality needs, Ethiopia launched the first five-year Education Sector Development Programme (ESDP I) in 1997. ESDP has passed through a two-five-year period thus far. Currently, the country is implementing the third ESDP that runs from 2005/06- 2010/11. Quality assurance in this sector-wide approach is envisaged to be attained using a variety of measures, but national learning assessment is emphasized as a mechanism to monitor student learning progress for policy intervention. So far, Ethiopia has gone through two national learning assessments.

2.9.1 Ethiopian First National Learning Assessment

The Ethiopian First National Learning Assessment was launched in 1999/2000 (1992 E.C.) by the Ministry of Education (MOE) in collaboration with the Basic Education System Overhaul (BESO) I project.

The main objective of this National Learning Baseline Assessment was to determine the various levels of students' performances at both Grades 4 and 8 in four key academic subject areas. Grade 4 pupils were tested in English, basic reading, mathematics and environmental science subjects all prepared in the different instructional languages; and Grade 8 students were assessed in English, mathematics, chemistry, and biology subjects. Moreover, teachers and head teachers and the overall conditions of school compounds, in addition to students, were considered as major sources of data collected for the study (MOE, 2000).

A three stage stratified random sampling design was used to select sample regions, schools and students at both grade levels (4 and 8). Accordingly, 256 schools for Grade 4, and 136 schools for Grade 8 were sampled. About 10,506 students for Grade 4, and 5099 for Grade 8 studies were tested across ten regions of the nation (NOE, 2000). Information on the background characteristics of students and teachers were also collected and analyzed.

The implications of the findings for participating regions were indicated. According to the findings of the study, all participating regions have room for improvement in all key subject areas since no one region scored above the acceptable minimum level of 50% achievement (NOE, 2002).

The results also indicated that schools with high achievement at Grade 4 level also tended to obtain high achievement at Grade 8. The results of the study were also discussed in a workshop and constructive recommendations were provided for the improvement of the quality of students' learning in the nation. The reports were disseminated to regions and other stakeholders.

2.9.2 Ethiopian Second National Learning Assessment

The Ethiopian Second National Learning Assessment was the continuation of the First National learning Assessment, and it was aimed to collect information on the level of student achievement, to identify factors that enhance or retard student learning and to recommend appropriate remedial actions to improve performance in the primary educational system. The Second National Learning Assessment was started and carried out in Grades 4 and 8 in 2003/04 (1996 E.C). The National Organization for

Examinations (NOE) initiated the assessment and AED/BESOII provided the necessary financial and technical assistance.

The target populations for the study were Grade 4 and 8 students in the country in the year 2003/2004. they were selected from government schools in eight regions and two administrative cities. Gambella region was not included.

For Grade 4, the actual data collection took place in 363 schools and for Grade 8 it was conducted in 213 full cycle primary schools. The total number of schools included in the study was 377. Instruments of data collection included Achievement tests on basic reading, English, mathematics and environmental science for Grade 4 students; and English, mathematics, biology, chemistry and physics for Grade 8 students. Moreover, there were background questionnaires and attitude scales for students of both levels, questionnaires for directors and teachers, school observation checklists, school roster/ the results of classroom assessment by teachers and interview guides for initiating discussion to gather qualitative data.

Results from the study showed that the composite achievement results at national level for both Grades 4 and 8 were less than the expected minimum standards by the Ministry of Education. Moreover, in both grades male students performed better than female students. The percentage score of all subjects and the composite score of all regions showed that there was disparity in student achievement in all regions. In both grades, the study showed that student background factors, teacher variables, school structure and curricular materials, language of instruction, school management and instructional support services play a significant role in the variability of student achievement scores. The study concluded that student achievements need to significantly be improved if the country has to benefit from its educational system.

Chapter 3. METHODOLOGY

3.1 Frame of Analysis

The main purpose of the study was to find out the extent to which learning takes place in the first cycle of primary education, and determine the main factors that influence the learning outcomes of students. It was also to gather information on school improvement since the first and second national learning assessments conducted in 1999/2000 and 2003/2004 respectively.

The dependent variable, student learning, was measured by achievement tests. Another dependent variable, student's attitude towards socially relevant issues, was measured using questionnaires. The independent variables that refer to factors which affect the achievement of student learning in this study included school condition/environment, teachers behavior, school management, school structure and supply, instructional support, language of instruction, students' background, and community opinions. The following table shows their relations and descriptions.

Table 2. Description of variables

Variables		Description
Dependent variables	Students' achievement	Mean score of English, mathematics, mother tongue, and environmental science
	Students' attitude	Attitude of the students towards socially relevant issues related to health, environment, civics and ethics, and education.
Independent variables	Students' home background Students' personal characteristics	Family size, parents' education and occupation, language at home, distance from school, attendance, learning support, presence of radio, TV, study table, electric light … Students' gender, leisure, interests in English, mathematics, mother tongue, and environmental science
	School structure and curriculum materials	Location (urban-rural), school program, level, instructional language, class size, program, classroom condition, supplies, facilities and equipment, provision of instructional materials, period allotment, school construction,
	Instructional inputs	Textbooks - pupil ratio, availability of basic instructional materials (other than textbooks), availability and use of pedagogical center, lab., library
	Teacher variables	Teacher's qualifications, years of experience, knowledge of subject matter, distance, from school, teaching load, attendance or absenteeism
	School management	School directors' qualifications, organization, evaluation of teachers, meetings conducted with staff and community
	Parent/community views	Attitude towards students' behavior, learning and schools, collaboration with the school to solve problems, parents' involvement in school affairs

3.2 Design

In order to obtain the required information both quantitative and qualitative research approaches were used. In the quantitative approach, a cross-sectional data using achievement tests were collected to determine the extent to which learning takes place in primary schools. A qualitative study design was used to supplement the quantitative study. It mainly involved a collection of cross-sectional data on similar issues addressed by the quantitative study.

The study was carried out in three phases. Phase 1 involved institutional arrangement; Phase 2 involved planning, development and field testing of the activities and the instruments and Phase 3 involved field work, data analysis and interpretation.

3.2.1 Institutional arrangement

In addition to mapping out the mission of the entire study, this task led to the formation of the National Advisory Council and the Technical Working Group. Terms of Reference for each of these structures were prepared. Accordingly, the National Advisory Council (NAC) was responsible for providing overall leadership to the study. The chairman of the NAC was the State Minister for General Education and the Manager of GEQAEA was the secretary. The members of NAC included leaders of central institutions of the Ministry of Education (MOE) and the Heads of Regional Education Bureaus, USAID/BEP. The Technical Working Group (TWG) was established to provide leadership and direction on everyday basis to the development and implementation of the Third National Learning Assessment. The day to day activities were carried out by the staffs in charge of learning assessment at GEQAEA who are also members of the TWG.

3.2.2 Instrument development and piloting

This stage involved planning, development and field testing of the activities and the instruments. Planning the study included the identification of preparatory activities, making decisions about the design of the main study, fieldwork as well as dissemination. Development activities included reviewing the literature and the previous assessment documents, review of curricular profiles, initial revision of instruments, pilot testing of instruments, translation, printing and packaging of instruments.

Prior to the actual study a pilot study was conducted in May 2006. The primary focus of the pilot study was to pretest the achievement tests and modify or replace items as necessary. To meet this goal Item and Test Analysis on the Ethiopian Second National Learning Assessment achievement tests were carried out in order to look at the nature of the items and pick items for future use. Test and Item Analysis was necessary in order

to improve or modify an item in particular and a test in general. In addition any change in the curriculum may entail the inclusion of new items or the exclusion of the old ones.

In order to address this issue, test and item statistics were produced for subject and curriculum experts. Prior to that, curriculum analysis was conducted by hiring a local consultant. Furthermore, the modification and substitution followed strict guideline and supervision by a specialist in the area. As it is common in most achievement tests few items did not work as expected, hence there was a need to modify them based on the available statistical information and expert judgment. The modification of the items took into consideration the following variables in their integrated form: Difficulty Level; Discrimination Index; Matrix of DL and DI; Distracter Analysis and Item Characteristic Curve.

The item reviewers involved were subject specialists and experienced item writers. They were provided with the items to be reviewed and the item analysis result. After reviewing the items the modified items were written legibly in the space provided next to the original item followed by a brief account of why the item was modified. Items found totally defective were replaced with others.

Following this development, a workshop on the validation of the test instruments for the Third National Learning Assessment pilot study was held on April 1, 2006 at the auditorium of the GEQAEA. The participants of the validation workshop were curriculum experts from the Institute of Curriculum Development and Research (ICDR), assessment experts from the GEQAEA, and teachers of the subjects included in the test from various schools in Addis Ababa. The validating team for each of the subjects consisted of one curriculum expert, one assessment expert and two teachers of the subject. Therefore, there were five validating teams. The test instruments validated by the workshop were English, mathematics, mother tongue, and environmental science.

The procedure followed in validating was that the teachers and the curriculum experts were provided with the test booklet in their respective areas to read and give their comments independently on a form prepared by the assessment coordinating committee. Then the three people came together with the assessment experts to discuss the comments given. When they reached an understanding regarding a certain comment, they recorded it so that the correction or the amendment could be incorporated in the final draft of the test booklet.

The curriculum experts checked each of the test items for conformity with the syllabus contents and the Minimum Learning Competency (MLC) set for each subject, categorized them based on their level of difficulty as well as level of cognitive domain.

They also reviewed them for fairness or being free from biases. The assessment experts and the two teachers evaluated each item for relevance, clarity and appropriateness for the purpose intended.

3.2.3 Field work and data management

The final stage involved field work, data analysis and interpretation. The field work, which began by selecting and training of data collectors, focused on the collection of both quantitative and qualitative data. This was followed by data capturing, cleaning, analysis and interpreting.

3.3 Sampling Procedures

In order to provide national and regional estimates of student achievement, results and attitudes on selected curriculum based topics with group comparisons across gender, location of school (i.e., urban/rural), and language of instruction, all students of Grade 4 in the Ethiopian primary schools were taken as the target population. To be able to obtain data on independent variables using quantitative methods, teachers and head teachers were also targeted. The target population for the qualitative study included the purposefully sampled schools focusing on students, teachers, head teachers and community representatives.

The general sample design framework used was a stratified two-stage cluster sample design. This permitted the use of sample design tables to provide estimates of the number of schools and students required to obtain a sample with an effective sample size of 400. In order to use the sample design tables, it was necessary to know: the minimum cluster size (the minimum number of students within a school that will be selected for participation in the data collection), and the coefficient of intra-class correlation commonly known as *roh* (a measure of the tendency of student characteristics to be more homogeneous within schools than would be the case if students were assigned to schools at random).

In this study the value selected for the minimum cluster size was 40, and the estimated value of the co-efficient of intra-class correlation was 0.30. From the sample design tables, in order to obtain a two-stage cluster sample with an effective sample size of 400, it was necessary to select a sample of 127 schools – which resulted in an expected total 5,080 sample students. In order to have optimal sample, the minimum number of schools at the stratum was decided to be 25 which resulted in a total of 12,000 sample students. The summary of the sampling process is given in Table 3.

Table 3. Description of the sampling processes

Desired target population	Grade 4 students in Ethiopia in the 2006/2007 Academic Year
Defined target population	Grade 4 students in April/May 2007 who were attending Government or Public schools with at least 40 students
Excluded Population	Grade 4 students in April/May 2007 who were attending Mission or Private schools as well as those attending Public schools with less than 40 students.
Stratification variable	Region
Minimum cluster size	Fixed number of 40 students per school.
Allocation of samples to the strata	Proportionate allocation across stratum
Optimization	A minimum of 25 schools in a region resulting in a total of 305 schools.

3.3.1 Sampling of schools and students

After using a simulation procedure to find out the acceptable minimum number of samples to make strong estimation of achievement results from the national sampling frame, and the representation of regions considered, the number of sample schools was determined at 305. The selection of samples was done for all regions.

To meet the goal of sound statistical estimates of performance for the nation, a two stage stratified cluster sampling technique was used. The number of sample schools in each region was determined based on the relative proportion of its school population. Prior to selection, the sampling frame comprising the number of schools by regions, levels and location was collected from EMIS 1998 E.C. statistical data. Following this, schools were stratified based on region. The decision to use a stratified sampling procedure was mainly to accurately represent individual regions and the various linguistic groups.

A minimum of 25 primary schools were randomly selected from each region. This sample size was determined from confidence intervals estimated using population statistics from baseline data. Using simulation procedures, a 90% confidence interval of +/- 5% from the mean was calculated for a minimum regional sample of 25 schools. When stratifying the minimum number of schools, regions with less than 25 schools were “topped up” in order to meet the minimum representation of regions by a sample of 25 schools.

The sampling of schools was followed by another decision to select students. It was decided to randomly select one section followed by randomly selecting 40 students. The decision to include a maximum of 40 students was made by the study team assuming this to be an average number that can be managed during the test administration.

Table 4. Selected and achieved sample schools by region

	Schools		Students	
Region	**Selected**	**Achieved**	**Selected**	**Achieved**
Addis Ababa	25	25	1000	1000
Afar	25	25	1000	839
Amhara	33	33	1320	1274
Ben-Gumuz	25	24	1000	861
Dire Dawa	25	18	1000	792
Gambela	25	25	1000	831
Harari	25	22	1000	799
Oromia	55	55	2200	2013
SNPPR	30	30	1200	1196
Somali	25	25	1000	788
Tigray	25	24	1000	1000
Total	**318**	**305**	**12220**	**11493**

Table 4 shows that it was intended to cover 318 schools and 12720 students from all regions. However, the actual number of schools from which data were collected in the field was 305 with 11,393 students. This is a response rate of 95.3% at school level and 90.4% at students' level.

The selection of schools for the qualitative study was accomplished on the filed. Prior to this, however, a decision was made to include up to 40 schools overall. It was managed to cover 38 schools nationally.

3.3.2 Sampling of school directors and teachers

The school director and teachers of the sampled schools were selected to fill in the questionnaires. The national samples who took part in the study were 832 teachers and 305 school directors. Two to three subject teachers filled in the questionnaires

For the qualitative study, it was decided to include school directors, teachers, and students from grade 8 (as grade 4 students are not old enough), parents and community representatives in focus group discussions and/or interviews. For focus groups, it was decided to form different groups comprising 5-10 individuals at least in two school areas from each data collection route.

3.4 Data Collection Instruments

In this study, all the previous instruments used for the Ethiopian Second National Learning Assessment were used with modification based on the result of the pilot study. The pilot study was conducted in 2006 and a detailed separate report was produced. The various types of instruments used for data collection are described in Table 5.

Table 5. Description of data collecting instruments

Instruments	Respondents	Description
Achievement tests	Sampled Grade 4 students	The achievement tests contain 40 items each covering different content areas of the respective subject. The tests include English, mathematics, mother tongue and environmental science.
Attitude survey	Sampled Grade 4 students	This instrument contained two parts meant to find out background information and attitude of students towards some socially relevant issues. The background information deals with students' personal characteristics, family size and education, provision of textbooks, learning support provided, learning and assignments at school, distance walked to school and interests in subject areas among others.
Teacher's Questionnaire	Teachers of sampled students	This instrument focused on general background information of teachers; sex, qualification, experiences, their opinions towards the teaching profession, school management, curriculum materials and students, teachers' load and provision of instructional materials, and meetings made with parents and others.
Director's Questionnaire	Director School	This questionnaire is similar to that of the teachers' and seeks data on background of the directors, manpower in the school, and evaluation of teachers' performances, conducting meetings with the staff and parents and provision of curricular materials.
School Semester Result	School Director	This is a form used to collect the first semester result of sample students from each sample school on the selected subject areas for comparing school results and results from the Third National Learning Assessment.
Group Discussion Guide	Parents, Community Representatives, Teachers and Students	This instrument was used to conduct focus group discussion with parents, school teachers and students about the strength and weakness of the school on various issues: characteristics of students and teachers, availability of facilities and instructional materials, the school's program and period allocation, organization and administration of the school, and involvement of different groups in supporting the school and other environmental constraints that affect the teaching learning process.

3.5 Validity and Reliability of Instruments

Taking into account the decentralization of the curricula, one of the methods used for the validation of instruments involved a national workshop which brought together regional curriculum experts, specialists from ICDR and GEQAEA to review the extent to which the instruments measure student learning in each region. Prior to this, all the instruments mentioned above were critically reviewed by the TWG members and test developers. In order to ensure the representativeness of the contents of the instruments, a national validation workshop was held and validated the items that were prepared on the basis of the table of specification following the syllabi of primary education. In other words, the national workshop ensured the content validity and relevance of the test items by relating them to the curriculum objectives.

Another measure used to check the predictive validity of the Third National Learning Assessment was collection of teacher evaluation of students from rosters. A comparison

between the composite achievement tests from the Third National Learning Assessment and school teachers' evaluation had shown strong correlation. Since samples were randomly selected and were representative of the Ethiopian student population, the internal and external validity of the assessment was ensured.

The study was conducted in 19 languages. The instruments were first developed in English and then translated into the instructional languages. The translation of instruments was made by subject teachers and curriculum experts who have experience in dealing with the languages in the respective places. In the translation, two persons were assigned for different tasks, one to translate the tests from the original version to the respective language and the other to do backward translation. The camera-ready copies of translated instruments were sent for printing in booklet forms. Two subjects were arranged in one booklet and packaged for the sample schools and the field routes.

Prior to adopting instruments from the Second National Learning Assessment, thorough item and test analyses were carried out for item difficulty and discrimination power. Based on the analyses, certain items were modified or totally replaced by new ones and more new sets of items were prepared for each subject area. Detailed curriculum analysis was conducted by a local consultant in order to see changes

Similarly, the study team assisted by international consultants revised the instruments for background information which included the previous attitude survey instruments. The questionnaires for directors and teachers used in the previous studies were also improved in line with the identified variables.

3.6 Data Collection and Administration of Instruments

For the field work a highly systematic and planned approach was used. The collection of data was organized to take place in 19 routes. Each route except Gambella had two selected training centers in which the training of data collectors was carried out. One route leader or trainer was assigned from the center to manage the activities of each route. Prior to data collection or field work, a consultative workshop was held with regional educational representatives to discuss the program of data collection, the sample schools and training centers, the assignment of centre coordinators, and recruiting data collectors in each region. In line with this, data collectors were selected by regions from the respective *Woreda* Education Offices and from non-sampled schools. One data collector was assigned to each sample school per grade. Based on the prepared guideline by the study team, a two day intensive training was given for data collectors by the route leader/trainer in each center. After the training, the data collectors were provided with the list of sample schools, instruments and working schedule at each

school. The data collection was conducted at the same time in all sample schools from April 20 - May 15/2007.

Before students sat for the examinations, they were given a short-training on how to write or fill in the answers. They were also sensitized on the goal of the Ethiopian Third National Learning Assessment and how significant their participations could be for the successful accomplishment of the task. At the end or return from the field, reports were made by various groups: the field workers to the route leaders, the centre coordinator to the respective region, and the route leader to the centre or the study team. Data for the qualitative analysis were collected by center coordinators. There were center representatives from Region and Zone Education Bureaus who assisted in discussions, selecting participants and in translations.

3.7 Methods of Data Analysis

3.7.1 Data organization

The main data sources for the study were the achievement test item responses and test scores. Student and school level variables were obtained from the different questionnaires administered to students, teachers and directors. Furthermore, additional pieces of information were obtained from EMIS 98 E.C. data set. The data base was organized at school and student levels. Before encoding the collected data into the computer, the instruments were first organized by region, type, subject area, school and respondent's code number. The data were first entered into MS Access and then transformed into SPSS. Eighty data encoders recruited from vocational schools were involved in entering the data into the computer and the data capturing process was accomplished in three weeks. The master data set for the study was organized based on the available information from different sources mentioned above. The data encoding was followed by a rigorous data cleaning process, analysis and interpretation of the findings.

3.7.2 Data analysis

In this report, reference is made to achievement differences between different groups of students. In interpreting these score differences both raw and scaled scores were used. Table 6 below summarizes the methodology used. The statistical procedures applied for data analysis included summary descriptive statistics, tests of statistical significances such as t-test, analysis of variance followed by post-hoc tests and homogenous sub-groupings, correlation, multiple regression analyses and multi-level modeling among others.

Table 6. Summary of data analysis methods

Method	Level of Analysis	Statistical Packages	Purpose
Item and Test Analysis • Classical Test Theory (CTT) • Item Response Theory (IRT)	• Student	Specialized Item and Test Analysis Statistical Packages	• Further improvement of the test items during the pilot study • Generating ability and scaled scores
Descriptive statistics (Measures of central tendency and Dispersion) • Raw Scores • Scaled Scores	• Nation • Region • Sex • Age • Location • Language	Latest versions of Regular and Survey Data Analysis Statistical Packages	• Generating summary statistics • Making comparisons based on subgroup analyses
Inferential Statistics • Tests of significance • Correlation • Regression • Multilevel Modeling	• Region • School • Sex • Location • Language • Background variables	latest versions of regular and Survey data analysis statistical packages	• Identifying effects

Chapter 4. FINDINGS OF THE STUDY

For any educational system that strives for quality education, probably the most important things is the extent to which the students have learned what they were meant to learn. In this report an examination has been made of the home backgrounds of students, the teachers they had, and the conditions of the schools they attended. Moreover, students' academic achievement towards the end of Grade 4 has been examined as proxy measure for learning. Since Grade 4 is the culmination of the first cycle of primary education, it can be taken as an indication of the state of learning at the primary education in Ethiopia.

4.1 Achievement Outcomes

This part deals with the performance of students on the achievement tests. The subjects were English, mathematics, reading comprehension, and environmental science. In addition a composite average score of the four subjects is also reported. The reading comprehension test consisted of 20 items while each of the others comprised 40 multiple choice items from Grades 3 and 4 contents. The raw scores of each subject were converted into percentages. Analyses were based on percentage scores though scaled scores are also reported as appropriate. The scaling of achievement data uses Item Response Theory (IRT), which has the advantage of placing both student achievement and item difficulty on the same metric. Each achievement test score was set to have a mean of 250 and a standard deviation of 50.

Each test was analyzed primarily at national level using student or school level data. The disaggregating variables are gender and location. In addition further analysis was conducted at region level sticking to the statistical assumption we made in relation to the optimal sampling procedure followed in the study. The common statistical procedure followed here are summary descriptive statistics, correlation, independent sample t-test and one way analysis of variance.

4.1.1 Summary descriptive statistics

The summary descriptive statistics shows that the mean score for each subject and consequently their composite score were below the minimum expected score. The minimum passing mark set by the Education and Training Policy is (50%). The median score which is less than the mean score (40.9%) shows that 50% of the students in the composite score obtained only 40.0% and below (Table 7). The mean score for English (36.5%) was the least and much lower than the composite score. The median scores were found less than the mean scores in most cases which mean the

distribution of the scores were positively skewed indicating that only very few pupils achieved the highest scores.

Table 7. Summary descriptive statistics (%)

Subject	N	Minimum	Maximum	Mean	SD	Median
Mathematics	11232	2.5	92.5	40.3	16.98	37.5
Reading	11192	5.0	100.0	43.9	20.39	40.0
English	11148	2.5	90.0	36.5	15.73	35.0
Env. Science	11107	2.5	90.0	42.6	16.35	42.5
Composite	10987	11.9	85.0	40.9	11.77	40.0

There exists a positive relationship the English, reading and environmental science and the correlations were statistically significant in all cases at $p < .01$ (Table 8). This shows that students performing well in one subject did the same in the others. However, there was no statistically significant relationship between mathematics and the other subjects

Table 8. Pearson product moment correlations among the four subjects

Subject	Reading (%)	English (%)	Env. Science (%)
Mathematics (%)	-.014	.001	.000
Reading (%)		.509(**)	.588(**)
English (%)			.589(**)

** Correlation is significant at the 0.01 level (2-tailed).

The achievement scores of the tested subjects and the first semester score of the academic year obtained from the school rosters were also compared to see relationship. The scores correlated positively in all cases and the relationships except mathematics were statistically significant at $p < .01$ (Table 9). The test development and mode of administration of the school based tests obviously differ from school to school; hence direct comparisons are not possible. Nevertheless the existing relationship shows that those who did well at their school also did the same in our tests.

Table 9. Pearson product moment correlation between school based and national assessment scores

National Assessment	School Based Scores			
	Mathematics	Mother Tongue	English	Env. Science
Mathematics (%)	.005			
Reading (%)		.119(**)	.	
English (%)			.386(**)	
Env. Science (%)				.336(**)

** Correlation is significant at the 0.01 level (2-tailed).

Table 10 below illustrates the range of achievement in the four subjects and the composite scores. The table indicates scores achieved at five key marker points: 10th, 25th, 50th, 75th and 90th percentiles. Pupils at the 90th percentile only achieved scores of 57.5.0% in the composite average. This means only 10% of the candidates were able to achieve a score of 57.5% and above. On the other hand pupils at the 10th percentile scored only 26.3% and this means 10% of the examinees scored at or below chance level in all subjects. On the other hand, 50% of the candidates scored between 31.9% and 48.8% in the composite (Table 10).

Table 10. Range of achievement scores (%) at five key marker points

Percentiles	Mathematics (%)	Reading (%)	English (%)	Env. Science (%)	Composite (%)
10th	20.0	20.0	17.5	22.5	26.3
25th	27.5	30.0	25.0	30.0	31.9
50th	37.5	40.0	35.0	42.5	40.0
75th	52.5	60.0	47.5	55.0	48.8
90th	65.0	75.0	60.0	65.0	57.5

Table 11 presents the range of achievements based on the scaled scores; for all subjects the mean score is set to 250 and the standard deviation at 50. Pupils who scored at the 10th percentile achieved a score of 187.9 in the composite score, which is 1.24 standard deviation less than the mean. The corresponding score for pupils at the 90th percentile was 320.6 which is 1.4 standard deviation higher than the mean.

Table 11. Range of achievement scaled scores (%) at five key marker points

Percentiles	Mathematics	Reading	English	Env. Science	Composite
10th	190.3	191.4	189.6	188.6	187.9
25th	212.4	215.9	213.5	211.5	211.8
50th	241.9	240.4	245.3	249.8	246.3
75th	286.0	289.5	285.0	288.0	283.4
90th	322.8	326.3	324.7	318.6	320.6

4.1.2 Performance at Varying Levels of 'Performance Standards'

In this part the continuum of students' achievement is divided into three levels (*Below Basic, Basic and Proficient*) and the proportion achieving at each level is reported at national level. This is an attractive way of presenting results not only for educational planners and policy makers but also for the general public. For the sake of simplicity, a chart is also included (Figure 1). Based on the composite score only 14.7% of pupils were categorized at the proficient level and 37.8% were at the basic level. The remaining 47.4% were below the basic level (Table 12). The classification was based on scaled score where *Proficient* is greater than 1 standard deviation above the mean,

Basic is within 1 standard deviation above the mean, and *Below Basic* is below the mean score.

Table 12. Achieved performance level for each subject

Subject	Proficient	Basic	Below Basic
Reading	14.6	33.7	51.7
English	16.9	31.5	51.6
Mathematics	17.1	29.0	53.9
Env. Science	16.3	38.5	45.1
Composite	**14.7**	**37.8**	**47.4**

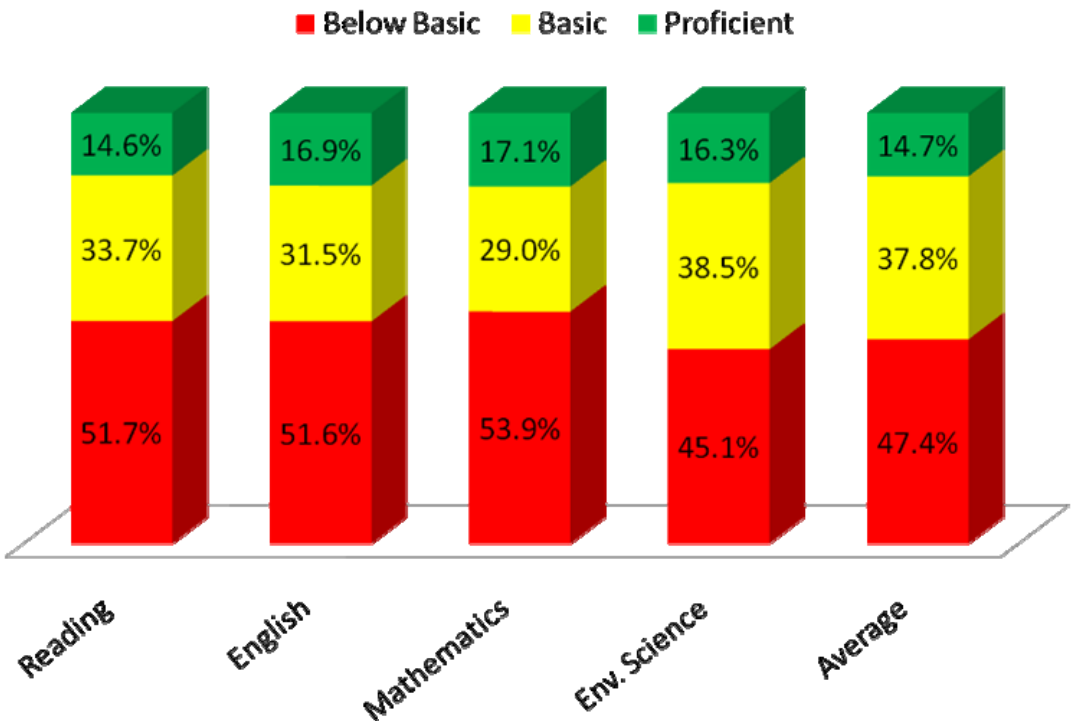

Figure 1. Achieved performance level for each subject at national level

4.1.3 Gender and Achievement

Boys achieved mean scores that were higher by 1.12 % in the composite score and .23% to 2.36% in the four subjects (Table 13) than girls. In English and environmental science the differences were statistically significant at $p < .001$. The gender gap in mathematics and reading was narrow.

Table 13. Independent sample t-tests for boys and girls

Subject	Sex	N	Mean	SD	SE	t	Sig.	MD
Mathematics	Male	6029	40.4	16.94	.22	.701	.484	.23
	Female	5148	40.2	17.06	.24			
Reading	Male	6003	44.1	20.56	.27	.745	.456	.29
	Female	5135	43.8	20.17	.28			
English	Male	5984	37.6	16.19	.21	7.909	.000	2.36
	Female	5118	35.2	15.03	.21			
Env. Science	Male	5965	43.3	16.59	.21	5.087	.000	1.58
	Female	5096	41.8	15.97	.22			
Composite	Male	5898	41.4	12.04	.16	4.979	.000	1.12
	Female	5044	40.3	11.40	.16			

4.1.4 Location and achievement

Students from rural schools performed better than those from urban ones in all subjects. The mean differences were statistically significant at $p < .001$ in all cases except in mathematics (Table 14).

Table 14. Independent sample t-tests for urban and rural pupils

Subject	Location	N	Mean	SD	SE	t	Sig.	MD
Mathematics	Rural	6442	40.3	17.00	.21	.119	.905	.04
	Urban	4782	40.2	16.97	.25			
Reading	Rural	6418	45.1	20.39	.25	7.296	.000	2.84
	Urban	4766	42.3	20.27	.29			
English	Rural	6368	37.3	16.23	.20	5.992	.000	1.80
	Urban	4774	35.5	14.97	.22			
Env. Science	Rural	6344	43.3	16.69	.21	5.020	.000	1.57
	Urban	4757	41.7	15.84	.23			
Composite	Rural	6260	41.6	11.95	.15	7.060	.000	1.59
	Urban	4721	40.0	11.48	.17			

4.1.5 Progress in academic achievement

Comparison of the mean scores of the subjects in the previous national assessments and the current study is presented below in Table 15. The mean composite score of the current study (40.9 %) was found to be lower than those of the ESNLA (48.5 %) and EBNLA (48.1%).

Table 15. Comparison of mean scores among the three national assessments

Subjects	EBNLA (2000)	ESNLA (2004)	ETNLA (2007)
Mathematics	39.3	39.7	40.3
Reading	64.3	64.5	43.9
English	40.5	38.7	36.5
Env. Science	48.1	51.7	42.6
Composite	**47.9**	**48.48**	**40.9**

Since the reading comprehension test was changed considerably, further investigation was conducted by excluding it. The result showed that there still exist difference in the scores but the gap is narrower (Table 16).

Table 16. Comparison of mean scores among the three national assessments

Subjects	EBNLA (2000)	ESNLA (2004)	ETNLA (2007)
Mathematics	39.3	39.7	40.3
English	40.5	38.7	36.5
Env. Science	48.1	51.7	42.6
Composite	**42.6**	**43.4**	**39.8**

4.2 Region Level Analysis

4.2.1 Achievement across regions

One way analysis of variance taking the regions as factor and the composite score as dependent variable was carried out in order to detect the existence of statistically significant differences statistically significant mean difference was observed on the composite score ($F_{(10, 10976)} = 91.418$, $p < .001$) and also in all the subjects which will be presented in subsequent sub topics. Amhara (45.2%) scored highest with a mean difference of 12.6 % from Somali (33.8%) which achieved the least score. The mean scores of Addis Ababa (44.0%), SNNPR (42.5 %), Oromia (42.3%), and Tigray (41.8%) were found to be higher than the national mean (40.9%). All other regions achieved mean scores equal to or less than the national mean (Table 17).

Table 17. Mean composite score (%) by region

Region	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
Amhara	1281	45.2	11.76	.33	44.5	45.8	15.6	78.8
Addis Ababa	981	44.0	11.38	.36	43.3	44.8	20.0	85.0
SNNPR	1144	42.5	11.32	.33	41.8	43.1	15.6	76.9
Oromia	1932	42.3	12.04	.27	41.8	42.9	12.5	80.0
Tigray	941	41.8	12.03	.39	41.1	42.6	16.9	78.8
Dire Dawa	731	40.9	10.97	.41	40.1	41.7	13.1	75.6
Benishangul	872	39.5	11.89	.40	38.7	40.3	11.9	78.1
Afar	807	39.3	11.59	.41	38.5	40.1	12.5	78.1
Harari	818	38.9	10.61	.37	38.2	39.6	15.6	74.4
Gambella	756	34.3	8.89	.32	33.7	35.0	14.4	63.8
Somali	724	33.8	9.77	.36	33.1	34.5	12.5	71.9
National	**10987**	**40.9**	**11.77**	**.11**	**40.7**	**41.1**	**11.9**	**85.0**

Scheffe Post Hoc procedure was followed in order to identify homogenous subset groups. In making multiple comparisons where it is necessary to compare more than two mean scores at the same time, there is an increased probability that a Type I error will be made. In order to control for this possibility, it was necessary to adopt a more conservative significance level than the traditional .05 level that would suffice for a single comparison. In this case .05 is divided by the number of comparisons and .005 is used. The homogenous subset grouping (Table 18) shows that there are six groups. Amhara uniquely identified itself by taking its own group shared only by Addis Ababa. Among the other regions there exists a great deal of overlap. Somali and Gambella under Group 1 performed least and the mean differences with the other regions were statistically significant.

Table 18. Homogenous subset groupings of mean composite score (%) by region

		Subset for alpha = .005					
Region	**N**	**1**	**2**	**3**	**4**	**5**	**6**
Somali	724	33.8					
Gambella	756	34.3					
Harari	818		38.9				
Afar	807		39.3	39.3			
Benishangul	872		39.5	39.5			
Dire Dawa	731		40.9	40.9	40.9		
Tigray	941			41.8	41.8	41.8	
Oromia	1932				42.3	42.3	
SNNP	1144				42.5	42.5	
Addis Ababa	981					44.0	44.0
Amhara	1281						45.2
Sig.		**1.000**	**.173**	**.010**	**.527**	**.064**	**.905**

4.2.2 Achievement at varying levels of 'Performance Standards' across Regions

In this part the continuum of students' achievement is divided into three levels as mentioned earlier and reported by region based on the composite score. Each subject was separately dealt with elsewhere. In terms of those achieved mastery level (*Proficient*), Amhara had the highest (27.0%) followed by Addis Ababa (19.7%) and Tigray (18.4%). Gambella (2.5%) and Somali (2.7%) were the least. Based on those who fell in the *Basic* category, Dire Dawa (50.5%) was the highest followed by SNNPR (42.4%). On the other hand Amhara with 36.3% had the least in terms of those who fell under the *Below Basic* category while the other regions had 41.3% (Dire Dawa) to 60.6% (Somali) in the *Below Basic* category (Figure 2).

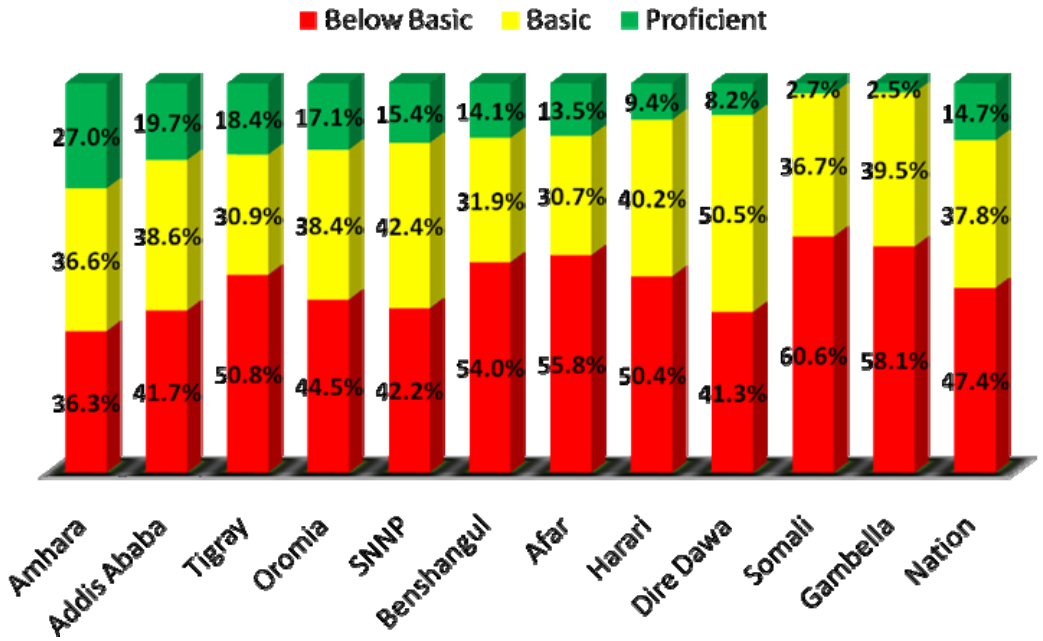

Figure 2. Performance level across regions

4.3 Subject wise Multiple Comparisons at Region Level

This part deals with each subject separately taking region as a grouping factor. Further disaggregating was also conducted using the key variables namely gender and location within each region. In each case one way analysis of variance was a carried out to detect the presence of statistically significant mean differences between regions followed by Sheffe Post Hoc test to produce homogenous subset groupings.

4.3.1 English

The mean score for English ranges from 32.5 % (Gambella) to 40.5% (Amhara). A one way analysis of variance showed a statistically significant difference between regions ($F_{(10, 10796)} = 11.61$, $p < .001$). Scheffe Post Hoc procedure resulted in 3 homogenous subset groups with great deal of overlap (Table 19).

Table 19. Homogenous subset groupings of mean English score (%) by region

Region	N	Subset for alpha = .005		
		1	2	3
Gambella	775	32.5		
Benishangul	886	34.1	34.1	
Somali	750	34.3	34.3	
Harari	824	34.8	34.8	
Afar	818	35.0	35.0	
Tigray	951	35.2	35.2	
Dire Dawa	737	35.8	35.8	
Addis Ababa	987		36.9	36.9
Oromia	1968		37.5	37.5
SNNPR	1156			39.6
Amhara	1296			40.5
Sig.		**.021**	**.012**	**.007**

4.3.2 Mathematics

The mean score for mathematics ranges from 34.9 % (Amhara) to 44.6% (Oromia). A one way analysis of variance showed a statistically significant difference between regions ($F_{(10, 11221)} = 40.63$, $p < .001$). Scheffe Post Hoc procedure resulted in 5 homogenous subset groups with a great deal of overlap in all the groups (Table 20).

Table 20. Homogenous subset groupings of mean mathematics score (%) by region

Region	N	Subset for alpha = .005				
		1	2	3	4	5
Amhara	1297	34.9				
Somali	755	35.2				
Afar	819	37.6	37.6			
Benishangul	887	38.4	38.4	38.4		
Gambella	782		40.0	40.0	40.0	
Harari	830		40.7	40.7	40.7	
Tigray	947		41.4	41.4	41.4	41.4
Addis Ababa	983		41.4	41.4	41.4	41.4
SNNPR	1171			41.9	41.9	41.9
Dire Dawa	741				42.4	42.4
Oromia	2020					44.6
Sig.		**.027**	**.008**	**.019**	**.441**	**.069**

4.3.3 Reading

The mean score for reading ranges from 32.5 % (Gambella) to 56.7% (Amhara). A one way analysis of variance showed statistically significant difference between regions ($F_{(10, 11181)} = 127.07$, $p < .001$). Scheffe Post Hoc procedure resulted in 6 homogenous subset groups with overlaps except at Group 5 and 6 (Table 21).

Table 21. Homogenous subset groupings of mean reading score (%) by region

Region	N	Subset for alpha = .005					
		1	2	3	4	5	6
Gambella	769	32.5					
Somali	748	33.7	33.7				
Harari	830		38.0	38.0			
Afar	822			41.3	41.3		
Dire Dawa	736			41.3	41.3		
Benishangul	878				43.2		
SNNPR	1172				43.8		
Oromia	2008				44.7		
Tigray	950				45.4		
Addis Ababa	987					50.4	
Amhara	1292						56.7
Sig.		**.997**	**.010**	**.192**	**.021**	**1.000**	**1.000**

4.3.4 Environmental Science

The mean score for environmental science ranges from 31.1 % (Somali) to 48.1% (Amhara). A one way analysis of variance showed statistically significant difference between regions ($F_{(10, 11096)} = 106.97$, $p < .001$). Scheffe Post Hoc procedure resulted in 4 homogenous subset groups with overlaps at Group 1 and 2 (Table 22).

Table 22. Homogenous subset groupings of mean environmental science score (%) by region

Region	N	Subset for alpha = .005			
		1	2	3	4
Somali	743	31.1			
Gambella	773	31.8			
Benishangul	885		41.8		
Harari	822		42.2		
Oromia	1948		42.8		
Afar	817		42.9		
Dire Dawa	738		43.9	43.9	
SNNP	1151		44.2	44.2	
Tigray	950		45.2	45.2	45.2
Addis Ababa	987			47.3	47.3
Amhara	1293				48.1
Sig.		**1.000**	**.011**	**.018**	**.101**

4.4 Academic Performance between Boys and Girls across Regions

This part looks at the four achievement scores across the regions by taking sex as a disaggregating variable. In Addis Ababa girls performed better than boys, in Harari and Somali no major difference between boys and girls was observed. In all the other regions boys performed better than girls and the differences were statistically significant in most cases (Table 23).

Table 23. Mean scores (%) of the four subjects by sex across regions

Region	Sex	Mathematics	Reading	English	Env. Science	Composite
Addis Ababa	Female	41.0	52.2	37.5	48.0	44.7
	Male	42.0	48.0	36.1	46.3	43.1
Afar	Female	38.2	38.9	33.7	40.8	38.0
	Male	37.3	43.0	36.0	44.4	40.3
Amhara	Female	34.8	54.5	37.4	45.7	43.3
	Male	35.0	59.2	43.9	50.8	47.3
Benishangul	Female	37.6	43.2	33.1	40.6	38.7
	Male	39.0	43.1	34.9	42.7	40.1
Dire Dawa	Female	42.3	41.5	34.5	42.9	40.4
	Male	42.4	41.2	36.9	44.8	41.3
Gambella	Female	39.6	31.7	30.4	30.8	33.2
	Male	40.2	33.1	33.9	32.5	35.1
Harari	Female	40.0	39.4	34.5	42.6	39.1
	Male	41.3	36.9	35.0	41.9	38.8
Oromia	Female	44.0	42.0	35.4	39.9	40.3
	Male	45.1	46.8	39.3	45.1	43.9
SNNPR	Female	42.6	42.7	37.9	42.5	41.5
	Male	41.3	44.7	41.0	45.6	43.3
Somali	Female	34.6	35.3	33.8	30.3	33.6
	Male	35.3	33.0	34.5	31.4	33.8
Tigray	Female	42.0	44.3	33.9	44.5	41.2
	Male	40.8	46.4	36.3	46.0	42.5

4.5 Academic Performance between Pupils from Rural and Urban Schools across Regions

This part looks at the four achievement scores across the regions by taking location as a disaggregating variable. Looking at the composite score in Afar, Amhara, Oromia and Tigray, pupils from rural schools performed better than the urban ones and the differences were statistically significant. In Benishangul Gumuz and Harari, pupils from urban schools performed better than those from the rural ones and the differences were statistically significant. In the other regions no major differences were observed (Table 24).

Table 24. Mean scores (%) of the four subjects by location across regions

Region	Location	Mathematics	Reading	English	Env. Science	Composite
Afar	Rural	34.8	46.1	38.2	45.7	41.4
	Urban	39.0	39.0	33.5	41.5	38.3
Amhara	Rural	35.5	57.5	41.6	49.3	46.1
	Urban	31.4	52.3	34.5	41.9	40.2
Benishangul	Rural	38.6	42.6	31.6	41.1	38.7
	Urban	38.1	43.8	37.0	42.6	40.5
Dire Dawa	Rural	43.1	39.6	36.5	44.9	41.0
	Urban	42.0	42.3	35.3	43.4	40.8
Gambella	Rural	37.0	32.4	32.9	33.1	34.0
	Urban	43.2	32.7	32.0	30.4	34.7
Harari	Rural	41.6	33.5	31.2	33.3	34.9
	Urban	40.2	40.5	36.8	47.1	41.1
Oromia	Rural	45.4	45.6	38.0	43.8	43.1
	Urban	42.0	41.7	36.3	39.5	39.8
SNNPR	Rural	42.5	44.1	38.0	44.2	42.3
	Urban	39.0	42.2	47.0	44.0	43.1
Somali	Rural	32.4	32.4	37.8	30.8	33.5
	Urban	37.9	35.1	31.0	31.4	34.0
Tigray	Rural	40.9	48.2	36.6	47.4	43.3
	Urban	43.4	34.8	29.6	37.0	36.3

4.6 Attitude Development towards Socially Relevant Issues

This part deals with students' views as related to the following sub scales: health care, environmental protection, civics and ethics, cultural conditions, and education. For analyzing mean differences, response to a favorable direction was assigned the highest value (3), the unfavorable one, the least (1) and neutral position (2). There were a total of 33 items with 3 choices each (*Disagree*, *Neutral*, and *Agree*). The maximum possible score was 99 and the minimum was 33.

Despite low academic achievement the overall attitudes tended to be in the favorable direction. This suggests that Ethiopia's social development curriculum is making a difference in shaping students' attitudes towards socially relevant issues. The mean score on the attitude scale, taking all the items into consideration, was 70.68 at the national level (Table 25). A one way analysis of variance showed a statistically significant mean difference across regions. The scores range from 57.06 (Oromia) to 79.75 (Addis Ababa).

Table 25. Summary descriptive statistics for the attitude survey by region

	AA	Afar	Amhara	B.G.	D.D.	Gambella	Harari	Oromia	SNNPR	Somali	Tigray	National
n	998	822	1,313	853	708	775	839	2,042	1,198	830	959	11337
Min	50.00	52.00	48.00	51.00	46.00	51.00	45.00	45.00	43.00	49.00	49.00	43.00
Median	80.00	77.00	76.00	75.00	71.00	70.00	69.00	55.50	75.00	74.00	74.00	73.00
Mean	**79.75**	**76.66**	**75.61**	**74.96**	**68.85**	**70.51**	**68.22**	**57.06**	**72.16**	**73.37**	**73.98**	70.68
Max	96.00	94.00	95.00	95.00	95.00	89.00	94.00	83.00	95.00	89.00	93.00	96.00
s.d.	6.83	6.85	8.07	6.85	13.29	7.52	13.38	6.51	10.54	7.27	6.92	11.12
Range	46.00	42.00	47.00	44.00	49.00	38.00	49.00	38.00	52.00	40.00	44.00	53.00
IQRange	9.00	9.00	10.00	9.00	26.00	12.00	26.00	8.00	14.00	11.00	10.00	18.00
Skewness	-0.58	-0.42	-0.60	-0.21	-0.11	-0.01	0.05	1.22	-0.58	-0.47	-0.05	-0.34

Tables 26 to 28 provide detailed item-level statistics of the attitude survey. Percentage response for each choice, direction of favored response (polarity), means scale, standard deviation and correlation were taken into account.

Table 26. Attitude towards issues related to health and environment

No	Item	Disagree	Undecided	Agree	pol.	mean	s.d.	cor.
1	I want to have many brothers and sisters.	43%	18%	37%	-	2.06	0.89	- 0.16
2	I will not catch HIV, just because I am attending class with students whose parents are HIV patients.	34%	21%	42%	+	2.08	0.87	0.39
3	Knowing the mode of transmission of HIV helps me not to catch by the virus.	32%	17%	48%	+	2.16	0.88	0.51
4	Defecating everywhere pollutes the environment.	35%	19%	43%	+	2.08	0.88	0.39
5	Sanitation is one means of controlling disease.	29%	13%	56%	+	2.27	0.88	0.65
6	I wash my hands after using latrine.	31%	11%	55%	+	2.24	0.90	0.66
7	Eating meat usually is a good feeding habit.	42%	16%	39%	-	2.03	0.90	- 0.27

Table 27. Attitude towards issues related to civics, ethics, and culture

No	Item	Disagree	Undecided	Agree	pol.	mean	s.d.	cor.
1	I prefer remaining poor to getting rich illegally.	40%	19%	38%	+	1.98	0.89	0.30
2	Girls are equally competent with boys in school.	32%	21%	45%	+	2.13	0.87	0.35
3	I can play a role in eradicating poverty.	31%	13%	53%	+	2.22	0.89	0.65
4	Tax paying is the responsibility of every body.	31%	13%	53%	+	2.22	0.89	0.63
5	It is not a good practice to pick any property which does not belong to one.	35%	17%	45%	+	2.10	0.89	0.44
6	I want to wear like my friends, even if my parents cannot afford.	47%	15%	36%	-	2.11	0.90	-0.25
7	Men and women are equally responsible to fight against bad practices against women.	35%	16%	46%	+	2.11	0.89	0.52
8	Priority should be given to boys in education.	48%	20%	28%	-	2.20	0.85	0.01

Table 28. Attitude towards issues related to education

No	Item	Disagree	Undecided	Agree	pol.	mean	s.d.	cor.
1	It does not matter, if I am late or absent at times.	52%	23%	22%	-	2.31	0.80	0.14
2	I am better of off compared to those who do not attend class.	33%	15%	49%	+	2.16	0.89	0.46
3	I like learning English.	28%	10%	60%	+	2.32	0.88	0.70
4	English is easy to me.	34%	18%	45%	+	2.11	0.89	0.42
5	I am happy when my teacher teaches English.	29%	9%	59%	+	2.30	0.89	0.74
6	I need more assistance when studying English.	31%	11%	56%	-	2.26	0.90	-0.58
7	I like learning mathematics.	28%	9%	61%	+	2.33	0.88	0.73
8	Math is easy to me.	32%	15%	50%	+	2.17	0.89	0.52
9	I am happy when my teacher teaches math.	29%	9%	60%	+	2.31	0.89	0.71
10	I need more assistance when studying math.	31%	11%	55%	-	1.76	0.90	-0.61
11	I like learning environmental science.	30%	13%	52%	+	2.22	0.88	0.64
12	Environmental science is easy to me.	29%	12%	56%	+	2.27	0.89	0.65
13	I am happy when my teacher teaches environmental science.	28%	8%	61%	+	2.33	0.89	0.73
14	I need more assistance when studying environmental science.	33%	13%	52%	-	1.81	0.90	-0.51
15	I like learning mother tongue.	28%	10%	60%	+	2.32	0.88	0.72
16	Mother tongue is easy to me.	33%	13%	51%	+	2.18	0.90	0.60
17	I am happy when my teacher teaches mother tongue.	28%	10%	59%	+	2.30	0.88	0.70
18	I need more assistance when studying mother tongue.	34%	13%	50%	-	1.83	0.90	-0.49

4.7 Students' Background Variables and Academic Achievement

Series of questions were posed to obtain background information from the students. These questions were related to background information about parents, home environment, socio-economic status, possession of educational materials, and students' characteristics among others. Here selected items which showed relationship with the composite mean achievement score of the students are presented with the percentage of respondents for each option.

Among the economic variables of parents, the ones positively related with students' academic performance are the capacity to provide instructional materials and availability of sufficient meals per day. Like in Grade 8, pupils in Grade 4 whose parents cannot afford clothes and school materials performed poorer than the others. Likewise, Pupils who reported that they usually eat once a day (10.3%) performed poorer than those who eat twice or three times a day.

Looking at issues related with pupil characteristics and schooling. 4.54% of the respondents said they do not like to go to school and they performed poorer than the others. Among those who like to go to school, those who said they want to learn (84%) performed better. In relation to school attendance, those who were never absent from school performed better followed by those who were absent only one or two days. Those who said they were absent for more than five days performed least.

Looking at possession of different materials students who have books other than text books, dictionary, and radio performed better than those who do not have them. Those who reported that they have television performed poorer than those who do not. The

Pupils who reported that they usually eat once day (10.3%) performed poorer than those who eat twice or three times a day. Availability of electric light did not affect performance as such. Students who do not have textbook performed less well than those who have one in each subject. Similarly those with books for their own also performed better than those who share with others.

Those who travel the longest distance performed poorer. On the other hand those who rate themselves highly competent in each subject performed better than those who rated their ability as low. Table 29 below shows correlations between the factors and the composite score.

Table 29. Correlations between the composite score and students' characteristics and home background variables

Item	Pearson Correlation	Sig. (2-tailed)
Parents' Educational Attainment & Economic Status		
Do your parents afford to buy your clothes?	.067(**)	.000
Do your parents afford to buy you school materials (exercise books & pen)?	.095(**)	.000
How long does it take you to travel from home to school?	-.023(*)	.021
How many times do you eat a day?	.144(**)	.000
Possession of Different Materials		
Do you have a study table at home?	.041(**)	.000
Do you have books other than text books at home?	.053(**)	.000
Do you have a dictionary at home?	.055(**)	.000
Do you have a radio at home?	.147(**)	.000
Do you have a television at home?	-.034(**)	.001
Do you have a computer at home?	-.093(**)	.000
Do you have electric light at home?	-.005	.651
Do you have English textbook?	.103(**)	.000
Do you have mathematics textbook?	.092(**)	.000
Do you have environmental science textbook?	.103(**)	.000
Do you have mother tongue textbook?	.015	.144
Self Concept		
What is your level of competency in mathematics?	.055(**)	.000
What is your level of competency in English?	.093(**)	.000
What is your level of competency in environmental science?	.076(**)	.000
What is your level of competency in mother tongue?	.067(**)	.000
Students' Characteristics		
Have you ever repeated any class?	-.200(**)	.000
Do you like to go to school?	.159(**)	.000
How many days were you absent from the school this semester?	-.096(**)	.000

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 29 shows that parents' economic strength to buy clothes, school materials, and adequate meals significantly influenced academic performance. Moreover possession of different materials at home including study tables, books other than textbooks, dictionary, and radio, were found to have significant positive influence. However possession of television at home was negatively associated with students' learning. Students' self-concept in Grade 4 in all subjects under study showed positive and significant relationship with academic performance. Students' characteristics including class repletion, and absence from school showed negative relationship while attitude towards positively correlated with academic performance. Overall multiple regression analysis based on students' background data resulted in a model which could explain 17% of the variation in the composite scores at student level (Table 30).

Table 30. Multiple regression analysis model summary based on students' variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.412	.170	.161	10.173

4.8 Teachers Variables and Academic Achievement

Teachers of sampled students responded to questionnaires related to themselves and their students. The result showed that 39.5% of the teachers are females, 23.4% taught for the subject they teach more than 5 years while 28.9% only for one year. 9.8% taught in the school for more than 5 years and 30.1% only for one year. In terms of qualification 58.8% were TTI certificate holders while 34.8% had diploma. Most of them (60.9%) lived close to school or traveled for less than 15 minutes. The main reason to be come a teacher for 67.1% of them was because they liked the profession and, 48.5% of them were happy with their career, and 42.0% of them would like to change their job. Those who said they did not like their job gave reasons like lack of attention and respect for the profession (26.3%), absence of training and promotion (11.3%), and students' disciplinary problem (5.1%).

Table 31 shows the correlation between different factors and the composite score. Most variables correlated with the outcome variable and the relationships were statistically significant. Furthermore, items related to support, training and perception of their students showed that 9.4% of the teachers were never supervised and the remaining ones were supervised from one to three times, 58.9% of the teachers met with at least 4 parents during the current academic year while from 7.9% to 18.8% met with 1 to 3 parents. Teachers attended different training programs related to teaching methods (57.1%), assessment (45.5%) and classroom management (34.4%).

Table 31. Correlations between the composite score and different teacher variables

Item	Pearson Correlation	Sig. (2-tailed)
Training and Supervisory support		
How many times were you supervised this semester?	.229(**)	.000
Have you attended any training on curriculum?	.210(**)	.001
Have you attended any training on teaching methods?	.149(*)	.019
Have you attended any training on assessment?	.195(**)	.002
Have you attended any training on students' discipline?	.181(**)	.005
Have you attended any training on classroom management?	.132(*)	.039
Perception about Students		
Students like their schools.	.180(*)	.015
Students are interested in their lessons.	.092	.202
Students are cooperative.	.122	.083
Students are hard working.	.115	.093
Students are punctual.	.166(*)	.015
Students are disciplined.	.168(*)	.018
Availability of Curriculum Materials		
Mother tongue Teacher's Guide	.205(**)	.001
Mother tongue Students Text	.132(*)	.043
English syllabus	-.056	.401
English Teacher's Guide	.102	.120
English Students' Text	.181(**)	.005
English Radio Guide	.167(*)	.010
Mathematics syllabus	-.001	.986
Mathematics Teacher's Guide	.225(**)	.000
Mathematics Students' Text	.176(**)	.006
Env Science Syllabus	.011	.867
Env Science Teacher's Guide	.219(**)	.001
Env Science Students' Text	.129(*)	.044
English Students text	.240(**)	.000
Mathematics Text to Students	.234(**)	.000
Env Science Text to Students	.252(**)	.000
Mother Tongue Text to Students	.211(**)	.001

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 31 above shows different teacher variables that positively related to and significantly affect students' academic performance. The most important ones are the number of times teachers were supervised, different in-service programs attended by teachers, teachers' perception of students' attitude towards school, student punctuality and discipline. With reference to curriculum the availability of Teacher's Guides and students' texts were found to have significant positive relationship with academic performance. Overall, multiple regression analysis based on teachers' variables resulted in a model which was able to explain 43% of the variation in the composite scores at school level (Table 32).

Table 32. Multiple regression model summary based on variables related to teachers

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.656	.430	.304	5.85049

4.9 School Variables and Academic Achievement

This part addresses school-level variables related to the teaching and learning processes. The data are based on the responses of school directors about the school, the students, and teachers. Series of questions were to the school directors and below is presented the relationship of the responses with the composite score (Table 33).

Table 33. Correlations between the composite score and different school level variables

Item	Pearson Correlation	Sig. (2-tailed)
Curriculum Materials		
Syllabus availability for mother tongue	.122	.054
Syllabus availability for English	-.033	.600
Syllabus availability for math	.041	.517
Syllabus availability for env. science	.055	.389
Teacher's guide availability for mother tongue	.170(**)	.007
Teacher's guide availability for English	.089	.159
Teacher's guide availability for math	.068	.280
Teacher's guide availability for env. science	.100	.112
Shortage of books	-.037	.566
Budget Source		
Budget form government	.078	.215
Parent's contribution	.029	.644
School income	.145(*)	.022
Book rent	.017	.793
Land lease	.182(**)	.004
Recreation Center	.130(*)	.039
Donation	.032	.619
Shortage of different materials	-.079	.215
Instructional Support		
Lesson planning preparation	.079	.210
Teaching methods varieties	.164(**)	.009
Teaching materials usage	.242(**)	.000
Varity of assessment techniques	.136(*)	.031
Time management in classroom	.041	.517
Motivating students	.079	.217
Use of laboratory	.047	.619
Supporting students	.047	.455
Use of pedagogical center	.191(**)	.002
Equipping the school	.007	.909
Supervision	.047	.462
Principal's Perception of Students		
Students like their school.	.005	.935
Students are disciplined.	.052	.420
Loose student-teacher relationship.	-.129(*)	.044
Class discipline problem exists.	-.127(*)	.047
Lack of respect for teachers prevails.	-.068	.284
Bad habits among students is prevalent.	-.229(**)	.000

Item	Pearson Correlation	Sig. (2-tailed)
Principal's Perception of Teachers		
Teachers are morally fit.	.095	.134
Teacher's are proud of their school.	.001	.989
They give emphasis to academic subjects.	.009	.882
Teachers' absenteeism is observed.	-.056	.380
Resistance to change among teachers exists.	-.071	.271
Shortage of teachers exists.	-.046	.474

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 33 above shows that variety of school level variables influence academic achievement. Among curriculum materials, the availability of Teacher's Guide and students' text were found to have positive relationship with students' academic performance. Another important variable which has significant positive relationship with students' academic achievement is the ability of schools to generate internal income using different methods such as land lease and recreation center. Although not statistically, significant government's budget, parent's contribution, and book rent collections have positive relation with students' academic performance. Under instructional support using varieties of teaching methods, teaching materials, assessment techniques, and use of pedagogical center showed significant positive relationship with academic performance. As far as the principals' perception of students is concerned, loose student teacher relationship, lack of classroom discipline, and bad habits among students were reported to have negative significant relationship with student learning. However students' positive attitude towards school and students' discipline were found to have positive relationship with achievement. Principals' perception, teachers' moral fitness, teachers' pride in their school, and emphasis on academic subject have positive relationship with achievement while teachers' absenteeism, resistance to change and shortage of teachers were negatively associated. Overall, multiple regression analysis based on the information obtained from directors' responses resulted in a model which was able to explain 30.3% of the variation observed in the composite scores at school level (Table 34).

Table 34. Multiple regression model summary based on variables related to school principals

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551	.303	.066	6.94020

4.10 Multiple Regression Analysis Models' Summary by Block and Hierarchical Linear Model

The variables selected to predict the academic achievement of Grade 4 students were derived from the questionnaires. The variables derived from the students' response were only those which give sense when aggregated to school level. The predictors were organized into blocks and initially each block was analyzed separately in order to explore its contribution to the final model (Table 35).

Table 35. Multiple regression results organized by separate blocks of variables

		Stand. Coefficients Beta	R^2	Adj. R^2	F	df
	Curriculum Materials		**.072**	**.064**	**8.409*** **	**2,216**
1	Mother tongue Teacher's Guide availability	.158				
2	Mathematics Teacher's Guide availability	.152				
	Home Background		**.231**	**.214**	**13.968*** **	**5,233**
1	Parents ability to afford school materials	.112				
2	Chore at home	.321				
3	Books other than textbooks at home	.098				
4	Radio at home	.180				
5	Television at home	-.250				
	Students Characteristics		**.184**	**.173**	**17.719*** **	**3,236**
1	Interest in school	.177				
2	Absenteeism	-.031				
3	Class repetition	-.336				
	School Management		**.064**	**.056**	**7.856** **	**2,231**
1	School income	.123				
2	Students disciplinary problems	-.205				
	Instructional Support and Teachers Variables		**.145**	**.129**	**9.366*** **	**4,221**
1	Pedagogical center use	.139				
2	Supervision	.198				
3	On job training	.159				
4	Distance from teacher's home to school	-.208				

Table 36 shows the hierarchical regression models summary which indicates the R^2 change when one block is added on the other. The number of variables in each model is indicated under the first column and the change statistics shows the R^2 change gained when one block is added on the other to build the final model.

Table 36. Hierarchical multiple regression models summary

Model	R	R Square	Adjusted R Square	Change Statistics				
				R Square Change	F Change	df1	df2	Sig.
1(2)	.302	.091	.082	.091	10.048	2	200	.000
2(7)	.541	.293	.267	.201	11.092	5	195	.000
3(10)	.586	.344	.310	.051	5.012	3	192	.002
4(12)	.599	.359	.319	.015	2.239	2	190	.109
5(16)	.652	.425	.376	.066	5.336	4	186	.000

Table 37 below shows that the regression was a fair fit (R^2 = 42.5%), and the overall relationship was statistically significant ($F_{16, 186}$ = 8.592, p < 0.000). However there is wide variation between the R^2 (.425) and adjusted R^2 (.376%) when the standard regression method (enter) is used.

Table 37. Multiple regression model summary based on standard method

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652	.425	.376	5.66150

The alternative was to use the backward deletion method which chooses the predictors for best fit model ($F_{8, 194}$ = 15.961, p < 0.000) and the difference between the R^2 (.397) and adjusted R^2 (.372) got narrower (Table 38). Students' absenteeism, supervision, class repetition, distance from teachers' home to school, chore at home, availability of Mathematics Teacher's Guide television at home, and radio at home were the variables which explained 39.7% of the observed variation in the achievement score (Table 38).

Table 38. Model summary based on backward deletion

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.630	.397	.372	5.677

Table 39 shows the contribution of each block to the final model when entered in different orders (first and last). It can be seen from the table that all the blocks significantly contributed to the variation in achievement of the mean composite score when they were entered first. Their contribution, except for school management block, was also statistically significant when entered last, however, the R^2 differences were very high.

Table 39. Contributions of each block to the final model when entered first and last

Block	Entered First R^2	Entered Last R^2	R^2 Difference
Curriculum Materials	**.072*** **	**.019***	**.053**
Availability of mother tongue Teacher's Guide			
Availability of Mathematics Teacher's Guide			
Home Background	**.231*** **	**.071** **	**.016**
Ability of parents to buy school materials			
Chore at home			
Books other than textbooks at home			
Radio at home			
Television at home			
Students Characteristics	**.184*** **	**.045** **	**.139**
Interest in school			
Absenteeism			
Class repetition			
School Management	**.064** **	**.006 (n.s.)**	**.058**
School income			
Students disciplinary problems			
Instructional Support and Teachers Variables	**.145*** **	**.066*** **	**.079**
Pedagogical center use			
Supervision			
On job training			
Distance from teacher's home to school			

Using student level data (Level 1) and school level data (Level 2), a fully unconditional model was specified to estimate the variance component for the composite score and for each achievement score. The model specifies no predictor at either level and is the simplest hierarchical linear model. Its primary purpose is to partition the variance of the dependent variable (achievement score) in between-group variance (variance between schools) and within-group variance (individual variance). The model also evaluates the reliability of the outcome variable. Mostly this statistics for the intercept will be greater than .7 though it is possible to get model outcomes with reliabilities less than this.

The intra-class correlation coefficient (*rho*) is the proportion of the between-group variance in the outcome variable. It is a measure of the importance of group membership in determining an individual value for an outcome and has a very great policy implication. In other words, it is a measure of how homogenous or heterogeneous our schools are and is a requirement of multistage sampling procedure in large scale educational researches such as national assessment. We used this coefficient for determining the sample size.

The variance components procedure, for mixed-effects models, was used to estimate the contribution of each random effect to the variance of the dependent variable. By calculating variance components, we can determine where to focus attention in order to reduce the variance. Taking the composite score as dependent variable and the

school as random factor the variance component analysis resulted in an intra-class correlation (*roh*) of 0.38. This means 38% of the variation in the mean composite score in Grade 4 was due to variations in our schools.

A similar procedure taking region as random factor resulted in an intra-class correlation of .084 which means the variation accounted for by being in different regions is 8.4%.

4.11 Major Findings of the Qualitative Study

Overview

This section presents the analysis and interpretation of results from the qualitative data. This additional study was conducted to complement the quantitative study as well as to reveal different aspects of student learning not accessed by the instruments developed for the quantitative study. It was also meant to explore the conditions that influence student learning basically by using similar questions with the quantitative study.

The collection of qualitative data was carried out in all regions where the quantitative data was undertaken**.** The modes for collecting data were focus group discussions. Participants were students, parents, and teachers of the respective schools. The data were organized in theoretical themes coined on the basis of the purpose of the study. The views from the participants under each theme are summarized in tables corresponding to the group of participants in each region. These themes are analyzed regionally and nationally. The findings of the qualitative data are juxtaposed with the findings of the quantitative data to elaborate the implications of the findings to the stakeholders.

4.11.1 Participants of the study

The types of participants in the qualitative study were in three categories. These were teachers including school principals, students and parents. Table 40 below presents the number of participants.

Table 40. Types and number of participants in the qualitative study

Region	Parents			Students			Teachers/ Principals			Total
	M	F	T	M	F	T	M	F	T	
Amhara	43	4	47	26	14	40	33	5	38	125
Addis Ababa	9	10	19	7	13	20	11	9	20	59
Afar	3	0	3	5	5	10	10	0	10	23
Benishangul	22	5	27	10	10	20	13	14	27	74
Dire Dawa	0	0	0	7	2	9	10	3	13	22
Gambella	15	6	21	11	11	22	12	11	23	66
Oromia	79	14	93	73	40	113	79	21	100	306
SNNPR	32	4	36	26	15	41	38	6	44	121
Somali	7	0	7	7	2	9	10	0	10	26
Tigray	26	7	33	17	11	28	12	14	26	87
Total	236	50	286	189	123	312	228	83	311	909

The table above shows that there were nine hundred and nine participants in all the focus group discussions in ten regions and city administrations. From these participants 32%, 34% and 34% were parents, students and teachers respectively. The proportion is nearly equal indicating proportional voice of the stakeholders. Members in each category of respondents also comprised both males and females.

4.11.2 Perceptions of students learning

Students' learning includes what students learn from school and the satisfactions from this learning, satisfaction in students' achievement and the resulting behavior, motivation and moral development, as well as motivational factors for learning. The following discussions deliberate on these issues as reflected by respondents.

4.11.3 Learning acquisitions and satisfactions with learning

The intention of any teaching learning process is to assist students acquire knowledge and skills. It is expected that parents, teachers and students themselves observe and feel the extent to which learning takes place, and express some level of satisfaction. It was in line with this that each of these categories of respondents was asked to express their opinions on learning acquisitions by students and their levels of satisfactions. Table 41 is the presentation of summary of responses from participants.

In the table it is shown that parents in most regions (Amhara, Addis Ababa, Benishangul Gumuz, Gambella, Somali, partly Oromia) have doubts about the quality and relevance of what students learn in primary schools. Even in regions where some quality and relevance of learning has been witnessed, there is clear dissatisfaction in that students lack either the interest to learn or the expected basic skills including reading and writing in lower grades. Teachers in most cases had the view that students learn useful materials for their life, but still expressed their lack of interest, motivation and attention to learning. Students expressed that they learned very little

from the curricula, and in many cases said that they had no satisfaction with what they learned. In Tigray, however, there was satisfaction in what students learned and the relevance of the curricula. In general, the impressions of parents, teachers and students in many of the regions are one of inadequacy, and lack of necessary skills in children's learning.

Table 41. Views on what students learn from the school and expressed satisfactions by region

Region	Views		
	Parents	Teachers/directors	Students
Amhara	• Students do not acquire relevant and sufficient knowledge and skills, especially from grades 1-4. • Parents are happy for sending children to school. • Children are also happy for being sent to school, but they think learning is difficult and not relevant.	• What students learn enables them to understand their environment and current situation like HIV/AIDS • Most of them learn with interest. • Some students have low interest to learn. They do not come to class on time, do not attend class regularly; they drop out.	• We learn about HIV/ AIDs & good citizenship from civics education. • We have interest to learn.
Addis Ababa	• Students do not gain appropriate knowledge and skills • Low interest in learning and grasping. • Parents are not satisfied at all, because children are promoted to the next grade without having sufficient knowledge.	• Most don't engage themselves actively in learning • Some students get asleep in the class; therefore dissatisfied.	• Though not satisfactory we feel we have learned something.
Afar	• Parents feel what students learn is appropriate and relevant • Students get the required competencies	• They learn with interest.	• We are satisfied with what we learn.
Ben. Gumuz	• There is low quality and also inadequacy in what children learn. • At least parents expect children to read letter for them, but they can't.	• They do not acquire adequate knowledge, because they do not cope follow curricula with attention. • There is lack of motivation.	• What we learn is not satisfactory. • Support from the school system is insufficient • Most of us lack interest to learn.
Dire Dawa	• Students are interested in learning.	• Students have interest, but no satisfaction in their learning	• Less relevance of learning with life • No satisfaction with learning
Gambella	• There is no appropriate knowledge and skills acquired at lower level. • There is high dropout due to inefficiency of the system.	• It helps them to improve/change their life. • Promoted to grades without sufficient knowledge.	_____
Oromia	• They learn with interest and happiness. • School has changed both the students & the community. • Parents see improvements in sanitation, awareness of harmful practices, etc. • There is less relevance of education around pastoralist areas. • Parents dissatisfaction is in students' failure to read and write in G.4 and in Grade 8 national examinations.	• They gain basic knowledge and skill that enables them to understand their environment. • They have interest to learn, especially those from rural. • Class attendance is satisfactory. • Some have no interest to learn because of the difficulty of some subjects.	• We are happy with what we learn with our mother tongue. • We are not satisfied because we do not get relevant knowledge and skills for our life.
SNNPR	• Students gain relevant knowledge and skills. • Parents are satisfied with what children learn. They are interested in learning. • Parents have dissatisfaction in students' failure to differentiate between good and bad..	• Students' interest to learn is improving. • They know why they learn. • Their interest is high at lower grades, but after Grade 5 it declines.	• We can describe our surrounding and are satisfied with what we learn.
Somali	• Students are not that much satisfied with what they learn.	• They can use computations and use English in communication	
Tigray	• Enthusiastic to learn. They want to liberate themselves from rural hardship.	• Students' interest to learn is high. They strive to improve their life through education.	

In few regions like Tigray or parts of regions like Oromia there are positive impressions of student learning. This finding is clearly related to the results of the quantitative study presented previously, In that report, it was indicated that student achievement in the nation is generally lower than the minimum expectation of the Ethiopian Education and Training Policy (50%) in both grades 4 and 8. The study also has shown that the curriculum is more effective in life skills area and students in their interviews reflected the same trend. What this part of the study shows are also the positive relations between the level of satisfaction and student learning. Where confidence and satisfaction were expressed, student learning has also been better than others like in Tigray. Thus, these findings suggest that the Ethiopian education is faced not only with the task of improving the relevance and quality of education, but also with creating satisfaction and confidence in what students learn from schools.

4.11.4 Students achievement and behavior

Students' achievement refers to the academic performance in their learning. This could be in terms of earning grades/marks, accomplishment of activities and desired behavioral qualities. The views and observations of these participants are summarized in Table 42.

The table shows the level of satisfaction and views of parents, teachers and students on the achievement and behavioral change of students. Except in Tigray where very little optimism is expressed, parents all over the country did not reflect encouraging views about the improvement of student academic performance as well as their behavioral qualities. The most common arguments include the following:

- Students do not get sufficient knowledge and skills.
- Many students of Grade 4 can't read and write properly.
- Student promotion is due to continuous assessment.
- They pass to grade 5 without sufficient knowledge.
- They do not obey teachers (Urban area).
- Students' achievement is decreasing.

Similarly, teachers reflected a situation where the teaching-learning process does not make effective contribution to students' academic achievement. In many of the regions concerns have been raised about low academic performance of students and issues related to lack of concentration on learning. Students also believe in what parents and teachers have reflected.

Table 42. Satisfactions on the achievement and behavior of students

Region	Views on students academic achievement and behavior		
	Parents	**Teachers/directors**	**Students**
Amhara	• No serious behavioral and disciplinary problems; but there are some misbehaving students as a result of misunderstanding others' right, and emphacizing t, their own. • Video shows are sources of misbehavior. Refraining teachers from punishment resulted this. • Students' academic achievement and social behavior is not good.	• Most of them have refrained from doing bad things. • Students are not good enough in achievement. • Few students achieved well and developed desirable behavior.	• Some students, especially after grade 5 do not bother about learning. • Students' achievement is not appreciated.
Addis Ababa	• Poor and undesirable behavior development. We do not observe desired behavioral change. • Low achievement, they pass to Grade 5 without sufficient knowledge and skill. Even lower than that of basic education.	• No satisfactory development in knowledge and behavior. Most of them achieved less than 50%.	_____
Afar	• They are competent and are interested in learning.	• Not satisfactory, they are interested in spending time on chewing “chat”.	_____
Ben. Gumuz	• They don't get sufficient knowledge	• Not satisfactory	_____
Dire dawa	_____	Good behavioral development	_____
Gambella	• Student promotion is due to continuous assessment. • There is a disciplinary problem. • Students have not developed desirable behavior, not matured in line with what they learn.	• Not satisfactory achievement and desirable behavior.	• We do not gain satisfactory knowledge at lower grades
Oromia	• Increasing of students' misbehavior and disciplinary problems. • They are not satisfied with what they learn, do not gain sufficient knowledge and skills • Their academic achievement is decreasing.	• The achievement is not satisfactory.	• Not satisfactory
SNNPR	• Since students do not give due attention to learning, many of them fail annually. • They do not obey teachers (Urban area). • Their thinking has transformed from selfishness to collective feelings	• It is satisfactory. But some are undisciplined.	_____
Somali	Not satisfactory	_____	_____
Tigray	• Students' discipline is not good. • What they learn is relevant. Change will come soon if things go the same. • Students do not have the necessary knowledge expected at their grade level.	• Many students of Grade 4 can't read and write properly. Poor in Mathematics and English.	• No adequate knowledge and skills particularly in mathematics, English and Tigrinya.

As depicted in Table 42, the respondents are dissatisfied with students' behavior. The parents from Addis Ababa and Gambella revealed this in the following expressions respectively. “Poor and undesirable behavior development... We do not observe desired behavioral change.” There is a disciplinary problem. Students have not

developed desirable behavior, not matured in line with what they learn." Some participants attribute this, for instance Amhara region, to students' regular attendance of video shows and loss of interest in learning and preferring chewing chat in Afar. This has brought undesirable acts of students in the schools.

Students' motivation and moral development

Students' motivation is the extent of their interest to go to school and learn. Moral development of students in this context includes those characters, beliefs and values developed as a result of learning. The family/community and the school are agents of moral development. As an organized social institution, the school undertakes curricular programs that develop accepted virtues and scientific knowledge. With this understanding, parents, teachers and student views were investigated on how student motivation to learn and their moral development are perceived.

Table 43. Assessment of students' motivation and moral development

Region	Views on student motivation and moral development		
	Parents	**Teachers**	**Students**
Amhara	• Students have difficulty in ethical moral development. • They have low interest to learn.	• Few students are motivated to learn.	• Due to poverty, students prefer to work than learn
Addis Ababa	• No initiation. There is no opportunity for jobs.	• Feel frustrated due to the difficulty of the subjects	• We are sent to school, but we do not like it. • We enjoy joining friends and gain something from sport, music, and club activities.
Ben. Gumuz	• Learning is taken as a difficult task due to the difficulty of the curriculum	• Coverage of subjects in the given time frightens learners.	• Students have very low interest in learning
Gambella	_____	They are more inclined to watching video and becoming disobedient and are not interested in learning.	____
Oromia	It is very low (Adola). Unethical moral development. They do not have respect ion for teachers.	They are more interested in films they watch and develop undesirable behavior. Students reveal delinquency and aggressive behavior.	They have interest to learn. Low achievement and poor interest to learn
SNNPR	They have low interest. Do not understand the value of education. Due to unemployment they observe from their predecessors they have low moral development. They are interested in learning. Particularly girls are performing better than boys.	____	Lack of interest
Tigray	They are interested more in video shows and external fashion.	____	Students have interest to learn

As shown Table 43, all participants, except some parents from SNNPR, perceive that students are not motivated to learn. According to them, they are more motivated to non-school activities including video shows. The reasons for not being motivated to learn could be many. The participants attributed students' lack of motivation to lack of employment, poverty, proliferation of non-school alternatives such as films, and the difficulty and length of the curriculum. Children are not born with the interest of learning. This develops during the early years of childhood. Parents, the school and teachers have the major role in helping children to develop this. Telling why they learn so that they can set their own learning goals at different stages is an important input. Assisting students to achieve these goals in learning is also expected from all stakeholders.

4.11.5 Factors that affect students' learning

Factors that affect students' learning may include very many conditions, but in this study the focus was on the support from parents (home), teachers and school leadership.

Support from home

The contribution of parents to either facilitate or obstruct student performance is very well recognized. Though this could be through multiple ways, giving students sufficient study time, releasing them from labor work, providing them with learning materials and helping them with homework are some of essential supports expected. Table 44 is a summary of support that students are provided in the primary school sector as expressed by respondents.

As described in Table 44, parents provide learning material support to the students. However, with exception of few, declare that parents' support does not surpass the provision of basic learning materials. At the same time they say that parents need them for labor at home and harvesting. This is more serious for girls. It is difficult to refrain students from assisting their family. However, this assistance should be reasonably propriate to their maturity level and engagement in learning tasks. As could be understood from the table above, most of the parents need children labor and engage them in domestic activities. At the same time there are students who attend school through self-help activities. Though the difficulty level of the task is not clear for the time being, it is obvious that labor at home takes more of their study time. This reduces their attention and interest to learn.

Table 44. Views on support from home

Region	Views		
	Parents	Teachers	Students
Amhara	• Children drop out during harvesting and labor work. • We send children to the school with learning materials and tools. • Most parents come to school and discuss with teachers on the issues related to children. • Most of the students are self-supporting.	• There is no follow up from the parents • Low support from parents due to labor needed at home.	• Obliged to work at home during harvest. • Parents provide learning materials • Parents support for homework is minimal
Addis Abeba	• Since most parents are poor their support is negligible • Some students come without meal.	• Since they are poor, they do not support them (Entoto Amba)	• Parental support for homework is minimal • Self-support is important
Afar	• We make our children free from labor work to learn.	• Most parents are not educated to provide support	_____
Ben. Gumuz	• There is no significant support	• Support is minimal in curriculum, and provision of materials	• Parents support is no more than provision of pen, exercise book and pencil
Gambella	• Poverty is a problem	• Mostly engage them with labor at home	• Cultural imposition for early marriage
Oromia	• Poor livelihood and low awareness. • They do not send their children to school for they need them for labor such as gold mining. • Girls are means of income through marriage. • Most parents do not support their children at home.	• Parents provide adequate materials. • No support from parents due to poverty.	• Workload at home. • There is material support
SNNPR	• Many students have no support from parents; they are engaged in activities to fulfill their needs of educational materials (self-help).	• The pressure is more on girls. Most parents do not take initiatives for their children's learning. Others are economically weak.	• Parents assist us in providing with learning materials.
Somali	• Parents support their children by providing learning materials.	• Parents help them in letting them to study at home.	_____
Tigray	• Not that much support, they do not have sufficient time to study.	• Most parents engage them with home labor	_____

Poverty at home seems to commonly impede students' learning. In urban areas like Addis Ababa, there are indications that learners lack proper nutrition. Similarly, it has been mentioned that parental support in doing homework is minimal given the low educational level of fathers and mothers.

Teachers support

In countries like Ethiopia, where educational facilities are scarce, teachers' support is of paramount importance. This includes provision of tutorial classes, homework/assignments, checking student progress, and academic guidance and

counseling services. Besides this, teachers' competence to support students' learning is the basis for all-round development of the learner and academic achievement. In this regard, participants were requested to express their views on the extent to which teachers provide support to students. Table 45 presents the views of the participants.

Table 44 reveals that teachers in Tigray, Somali, SNNPR, Oromia, Addis Ababa and Amhara regions give tutorial, homework/ assignments to support students' classroom learning. But in most cases except in Tigray teachers do not check or follow up the assignments. The participants attribute this deficiency to the large number of students in a classroom. There are also cases where students do not come to the tutorial class. The most serious issues here are teachers' incompetence and lack of preparation to teach. Students in Gambella and Benishangul Gumuz regions asserted that teachers, especially those who teach languages, have no competence, do not have preparation and do not go to class regularly. It is clear that these students do not receive extra support, and also get the basic requirements of teaching and learning, which affects learning.

Parents in Amhara indicated that they have no information about the extent to which teachers follow up students in their homework. This issue of providing information to parents and creating close relationship with community is an important challenge that schools need to resolve. In Gambella, the concern with local language teaching by parents is something which needs more attention. Almost all respondents recognize teacher support in terms of tutorials. The issue of guidance and counseling services has been rarely mentioned (in Amhara). Obviously, this part of teachers' responsibility in schools seems to be missing in all regions.

Table 45. Views on support from teachers

Region	Views on the level of teacher support to students		
	Parents	**Teachers**	**Students**
Amhara	• We see that our children do homework. But we do not know the extent of follow up. • Teachers support students by giving and correcting homework and advisig them.	• Teachers conduct make up and tutorial classes. But students do not come during the tutorial. • Teachers give homework. However due to large number of students in a class and teaching load (36), it is not satisfactory; teachers do not make corrections.	• Teachers give tutorials, but most of the students do not come. • Though teachers give homework and assignment they do not give feedback; especially pastGrade 5.
Addis Ababa	• Provision of tutorial class, advice. Teachers are not satisfied with their jobs due to low salary.	• Though we arrange tutorial classes students do not come.	• Teachers don't make corrections of homework & assignments
Ben. Gumuz	• Teachers do not assist students adequately. They are not enthusiastic	_____	• Teachers do not teach properly and do not give tutorials.
Dire Dawa	_____	• Provide tutorial class for girls.	• Teachers give tutorial and homework, but do not correct them.
Gambella	• Some teachers do not make sufficient preparation. • Teachers who teach the local language have no competence for they were assigned simply because they speak it.	• Some teachers are not ethical	• Teachers do not come to class regularly or do not come to class on time. There are misbehaving teachers.
Oromia	• Teachers do not correct assignments due to large number of students. • Some are not willing to support. • There are incompetent teachers. They provide tutorials, assignments and homework.	• Assign tasks and make corrections. Teachers also make discussions of misbehaving students and help them to avoid it. • Teachers do not provide satisfactory support in giving assignments and correcting them, advise and encourage them.	• Support by checking assignments & homework; provide tutorial class.
SNNPR	• Give tutorial and advice.	• Deficiency in competence and lowering of teachers' interest	• Teachers have low interest in their duty. • Teachers provide tutorial class and assignments.
Somali	• Give homework and corrections as well as tutorial and advice. • Teachers are inclined more to teaching in the private schools. • Do not give tutorial class.	• Teachers do not give tutorials, but homework. • They give assignments, but do not check them.	• There is no good relation with teachers, as they are not committed to their professional duties.
Tigray	_____	• Teachers correct assignments and tutor students.	• Teachers provide tutorial classes and give assignments and check them.

Support from school and leadership

Support from school and leadership includes provision of educational materials and facilities and strives to alleviate students' problems in learning. The materials include textbooks, reference books and classroom boards. Facilities comprise such components as libraries, laboratories and sports fields. Principals support children by providing orderly school environment, appropriate learning classroom schedules and attractive school campuses. Information regarding the extent to which these requirements are provided by the school leadership was obtained from focus group discussions. Table 46 summarizes the views of the participants secured from the interviews.

As described in Table 46, the school leadership in Addis Ababa and Oromia regions makes collaborations with non-governmental organizations to support helpless students. Of course, this indicates that the school is concerned with alleviating social problems and attract poor children to school .The table also shows that almost all participants reported that there is shortage of textbooks and classrooms, libraries and laboratories. These materials and facilities are requirements to implement the curriculum. In the situation like Ethiopia where there are no additional or optional materials, textbooks are students' companions both in the classroom and out of class. Laboratories have roles not less important than textbooks in curriculum implementation. Students' observation, demonstration and analytic capabilities emanate from such practices. Above all, laboratories are places where theoretical issues are animated and made practical. Learning through practice not only helps to recall the lesson, but also develops the investigative and analytic power of students.

Other problems that schools could not get rid of are shortage of qualified teachers and classrooms, and congestion due to large number of students in a class. Congestion of students could be as a consequence of shortage of teachers and classrooms where the school leadership is obliged to squeeze students in limited classroom.

These deficiencies significantly influence students' learning. Therefore, it is difficult to expect students to satisfy the minimum learning standards set at national level without providing them with the necessary curricular requirements.

Table 46. Views on the support from school leadership

Region	Views on support from school leadership		
	Parents	Teachers	Students
Amhara	• Shortage of textbooks (5-8). We know that there is laboratory and library but we do not see them used. • There is no separate latrine for girls and boys.	• No lab equipment, textbooks • Though the school makes effort to help students, nothing is available in the school.	• Shortage of textbook, laboratory equipment, library and football field. • No toilets, seats, sports field, mini-media. • Shortage of classroom resulted in hiring rooms
Addis Abeba	• Assist poor children by requesting help from NGOs.	• Support poor students by providing school uniform (Entoto Amba).	• In grades 1-4 students are more than hundred in each section. • There is no lab. Shortage of classroom.
Afar	• Shortage of textbook	• Shortage of textbook and congestion of students in a classroom.	• Textbooks, sports materials, library and toilet are available.
Ben. Gumuz	• Severe shortage of textbooks, no laboratory materials	_____	• No library, shortage of textbooks
Dire Dawa	• Lack of laboratory	• No library, laboratory and workshop	• No laboratory facilities
Gambella	• Shortage of textbook, • Large number of students in a class (100-120) , it is like a seminar. • Lack of proper use of money raised from parents.	• Shortage of textbook, teachers and classroom.	• Shortage of textbook, teachers and classroom
Oromia	• The school coordinates NGO to help the school and poor children. • Lack of potable water, sports and music materials, library and shortage of textbooks. Managerial problem.	• No library and laboratory, shortage of seats. • Shortage of qualified teachers, Large class size. • Support orphans, poor students by providing exercise books and school uniforms.	• No library and lab facility. • Shortage of Env. Sc. and Maths textbooks of Grade 4. • There is no counseling service.
SNNPR	• Schools strive to help students, the library is not functioning, • Shortage of textbooks, and congestion of students in a class.	• There are no facilities of library and sports.	• Teachers teaching language have no appropriate competence of teaching languages. Shortage of teachers, textbook, library, laboratory, large class size
Somali	• Lack of proper control. • Lack of textbooks for Env.Sc.Grades3, 4, 5 and 6. • No library	• Lack of textbook, so far Grade 4 and Eng., Grade 3 and 4 Maths and Grade 5 social studies are not available	• The school does not pay attention to teaching activities. Students do not come to school regularly as teachers are not punctual.
Tigray	___	• Lack of library facility	• Shortage of textbook, seats, sports field

4.11.5 Views on the education system

Education system involves various components. However, the issue addressed here is participants' views on the curriculum and its implementation. These include the opinion of participants on the difficulty level (simplicity/complexity) and relevance of the curriculum to the students' life.

Simplicity/complexity of the curriculum

As depicted in Table 47, the participants viewed the subjects as difficult for the students to understand. According to them, there are incidents where even teachers face difficulties to explain the concepts. In lower primary schools such subjects as Mathematics and Environmental Science were reported to have been difficult. At upper level Mathematics, Biology and Physics are viewed as difficult. In fact there are few cases where the curriculum has been considered appropriate to the level of students.

The other important issue participants raised was that the lower primary curriculum presupposes the entry behavior of those urban children who have the opportunity of attending pre-primary education. At preprimary, children are socialized and develop basic skills of reading alphabets and conversation. These students have little difficulty to read alphabets and short sentences. This in turn paves the way to learn other concepts. As a matter of reality, the current situation in Ethiopia shows that children in rural areas do not have such opportunities. Therefore, it is obvious that the entry behavior of students varies in terms of location and thus demands appropriateness.

Among other issues raised by parents and teachers are problems related to free promotion and self-contained classrooms. In Addis Ababa, for instance, free promotion has been mentioned as one impediment for student academic performance. Teachers in Amhara, Benishangul Gumuz, Gambella, and students in SNNPR all talked about the contribution of free promotion from grades 1-3 to poor academic performance. Although, the Ethiopian Education and Training Policy mentions continuous assessment as a means of ascertaining the formation of an all rounded personality, there is no reference to ‘free promotion”. Thus, it is very difficult to trace how free promotion has been implemented in the system. Similarly, self-contained classrooms were mentioned as undesirable strategies by parents in Benishagual Gumuz and by students in Gambella, Oromia, and SNNPR. Among the reasons that students gave is that they sit idle when the teacher is absent.

Table 47. Simplicity / complexity of the curriculum

Region	Views on the education system		
	Parents	**Teachers**	**Students**
Amhara	• Students tell us that subjects of Grades 7 and 8 are difficult to comprehend. They even tell that teachers face difficulty to understand it. It is too difficult for students to understand. Subjects at lower grades are difficult.	• Grade 7 and 8 textbooks are difficult. • The curriculum for Grade 1 seems to have considered children from KG, where this is missing in the rural areas. • Students are promoted from grades 1-3 freely; they do not bother about attending the class.	• Subjects are difficult to read and understand. Sometimes teachers face difficulty to explain. • They also lack coherence. The curriculum begins without treating the base.
Addis Ababa	• The subjects are difficult • Free promotion at lower grades contributed to low student achievement	• Grade 1 curriculum presumes KG as a basis for Grade 1 where most students do not get access to this. Hence it is difficult for such students.	• Volume of contents is too much to cover • Books are written in poor and difficult language and style.
Afar	• The subjects are difficult for the students and are too many.	• It is beyond students' capacity	• The subjects are many and difficult to cover within the given time.
Ben. Gumuz	• The curriculum is difficult for learners and even for teachers. • Self-contained system is the major cause for students' failure in the class.	• The subjects are difficult to students to understand. Too many subjects and (vast) coverage • If free promotion is exempted quality of education will be improve.	• The subjects are difficult to learn even for teachers to explain. It is difficult when leaning in English at Grades 7 and above
Dire dawa	• Lack of KG in rural areas.	_____	• Some subjects contain too vast portions.
Gambella	• The subjects are difficult in line with students' age.	• Does not consider entry behavior of children. Free promotion damages students learning and achievement.	• Self-contained system is not relevant. We always sit idle when the teacher is absent.
Oromia	• The curriculum is complex for the students. Not compatible to the students (e.g). Maths and Science Grades 2,3 and 4) . • The leadership focuses on reducing of dropout at the expense of quality. • The curriculum and textbooks are prepared appropriately.	• Grade 1 curriculum presumes KG. The curriculum has problems such as being bulky and difficult. e.g. Grades1-4 Maths and Env.sc.	• Grade 8 Afaan Oromo and biology are appropriate, but others are difficult. • Bulky textbooks (Gr. 4 Env.Sc.). • The curriculum is beyond our capacity. • Even teachers by pass difficult contents. Self-contained system is not good.
SNNPR	• Our children complain about the difficulty of textbooks and the methodology of some teachers.	• The curriculum is appropriate.	• Free promotion and self-contained system negatively affected quality of education.
Tigray	• It is related to their experience	• All Grade 1 subjects are difficult and too wide.	• The curriculum is appropriate.

Relevance of the curriculum to students' life

Relevance of curriculum included relationship of the subjects with students' interest, life and the teaching and learning process. Table 48 shows the views of the participants on relevance of curriculum to students' life. The table depicts that the participants perceive the curriculum as relevant to the students' daily life. Environmental science at the lower primary and Civics education at the upper primary school are perceived by students as relevant for their need. In connection to this the participants asserted that learning in mother tongue has enabled them to relate the subjects with their environment and understand them easily. However, there seems to exist a consensus among respondents in that the curriculum does not prepare students for work. It was underlined that the curriculum lacks practical subjects like Agriculture and Arts.

The other issue which came up repeatedly was "free promotion." This issue was highly stressed by the participants that it was damaging students' interest to learn. This is because it does not encourage students to study hard. Of course, it is clear that earlier habits influence latter ones and finally learning style of learners. That might be why participant teachers said, " Free Promotion" at lower grades contributed to low achievement of students at higher grades." There is no as such free promotion in any educational career. The assumption is that every one is promoted to the next grade after demonstrating the competencies set for the preceding grade level. The practice may be different or misunderstood. Therefore, unless this is made clear or action is taken, what the participants feel signals failure. Again the participants also viewed self-contained classroom organization as irrelevant and important at the same time. These competing views indicate that there are differences in facilitating and approaching this mode of classroom organization. Hence it would be helpful to adapt successful experiences. Student-centered approaches were looked upon as favorable practices. However, students referred to the volume of books as hindrance to effective learning. In Tigray, difficulties of textbooks and the unnecessary emphasis given to politics was not rated high. All in all the attempts made to relate learning with the immediate environment is in a very positive direction, but its utilitarian values for creating job opportunities is perceived at lower standard.

Table 48. Views on the relevance of the curriculum for students' life

Region	Views on the relevance of the curriculum for students life		
	Parents	**Teachers**	**Students**
Amhara	• Related to what students practice. • Students are promoted to the next grade without adequate knowledge		• It is good
Addis Ababa	• In fact it is related to students' life	• It is relevant to their life. e.g. Env. Science	• Learning ethical education has helped to know our right and responsibility. • The curriculum does not prepare for work.
Gambella/Afar	• The promotion policy at lower level is multiplying unemployment	____	• Civics and ethical education helped us to know ourselves.
Ben. Gumuz/ Dire Dawa	• Better relate the contents and approaches of the subject to the students' life. • The subjects have to consider the maturity of children.	• It is not related to daily life of the students.	• Not related to our daily life • Not relevant to our needs, it does not prepare us for job.
Oromia	• The curriculum and its delivery in self-contained approach is not appropriate. Does not prepare them for private and government job opportunity.	• Since it begins from things around it is related to their life.	• Does not prepare us for modern sector jobs, but related to our daily life.
SNNPR	• Free promotion and self-contained classroom teaching affected teaching-learning process. The curriculum is relevant.	• Frequent change of textbooks and free promotion has affected students' attention to learn.	• It is related to our life. • Learning in mother tongue helped to understand subjects easily.
Tigray	• Difficult textbooks and unnecessary emphasis on politics. Self- contained has developed parentship. • Writing, reading, and computing skills are not well developed.	• The curriculum is relevant. • Student- centered methods motivate learning and self-contained classroom encourages supporting individual students.	• Too many and voluminous subjects that make learning difficult. • Civics has improved student behavior. • Lacks practical subjects.

Parents and community participation in school

Parents are the major stakeholders in school system in Ethiopia. The school leadership guideline provides the areas parents and the community could part take in school affairs. Hence, the community has roles and responsibilities in different activities of the school. The area of involvement in school activities could vary, depending on the available local resource and capacity.

Table 49. Parents and community participation in school

Region	Views on parental and community participation		
	Parents	Teachers	Students
Amhara	• Construction of classrooms, pay for guards, contribute labor and raising fund. • Settle students' affairs with teachers when needed. • Few parents do not respect teachers' call. • Participate in co-curricular activities such as health, education and environmental sanitation	• Participate in expansion of classroom, pay salary for guards fencing and teachers' residence. • They evaluate school performance. • Community participation is very low, they are not interested to come to school. • Participate in attending co curricular activities of the school such as health education and environmental sanitation	• Participate in co-curricular activities. • Some parents do not come to school when called.
Addis Ababa	• Poor parents do not follow up their children in school.	• Since they are poor their participation is low. Rather NGOs support the school.	___
Afar	• Communicate with teachers in case of low achievement of children. • Construct classrooms.	• Participate in solving disciplinary problems, and • Construct additional classes.	___
Ben. Gumuz	• Provision of construction materials, fund raising and labor is high.	• Assist in fund, labor and materials. • Because of poor quality of education parents do not participate.	• Raise fund and labor.
Dire Dawa	• Most are poor and do not participate except in labor and administrative activities.	____	• Participate in clubs such as HIV/AIDS
Gambella	• Material provision and seeking support NGOs. • Evaluate performance of teachers, construct additional classes.	• Evaluate teachers and school performance, raise fund for orphan students, and construct additional classrooms. • Some parents have no follow up of their children and do not come to school when called.	• Parents help the school in every aspect
Oromia	• Participate in fund raising and school development, management, and students' affairs. • Parents do not participate due to poverty. Even they do not know their responsibility in the education of their children.	• They raise money for maintenance. • Construct additional class and maintain them, library, seats, latrine • Poor participation in constructing classroom.	• Low participation of the community.
SNNPR	• Parents/ community participates in school management, fund raising, provide local building materials and labor. • The participation of the community and teachers in school activity is low.	• They see the school as their own and assist in fund raising for school improvement projects. • Participate in school administration, fund, material and labor.	• Community participates in administration and maintaining schools.
Somali	• Contribute to school maintenance.	• Little participation in maintenance of school. They have no positive response to the school and no active participation.	____
Tigray	• Contribute in building additional classrooms.	• The community constructed the school. • Participate in fund raising.	• High participation

One of the issues during the focus group discussion was participation of parents and the community in school affairs. Table 49 shows the summary of responses of the participants in the regions. As could be understood from the table, the community participates in terms of providing construction material, raising fund, labor and involving in administrative issues. However, there are cases where the participation of parents is negligible, particularly in administrative areas. This is evident more in Amhara, Oromia and SNNPR. For instance, one of the extracts from the discussion made with teachers in Amhara region goes as;" Community participation is very low, they are not interested to come to school"(Gerardo). Another extract from the discussions made with parents in Oromia region says; "There is no proper parent and community participation in school activities. Even they do not know what their responsibility is in the education of their children." It seems that there is a gap between schools and parents. This gap could be bridged by the local administration and the school to make parents know what is expected of them when they send their children to school.

Major findings of the qualitative study

This section presents the views of parents, teachers and students perception of what they learn from school, the level of their satisfaction, factors affecting students' learning, views on the education system and the participation of parents and the community in school activities. Based on the data obtained through focus group discussion the following major findings are drawn.

- Although there are few variations, there is a clear expressed dissatisfaction with what students achieve and learn in primary schools. Even in areas where some quality has been witnessed, there is an expression that shows students do not acquire the expected knowledge, abilities and skills desired.
- The level of academic achievement has been rated as insufficient as it was commonly presented that students are promoted from lower grades to higher grades without sufficient knowledge; sometimes they fail to read and write letters.
- Few parents feel satisfied with the achievement of the students while most expressed dissatisfaction with the achievement and behavioral qualities of the students.
- Students demonstrate undesirable behavior in schools and the community.
- Students have low motivation to learn from schools. Non school alternatives like video shows are more attractive to the.

- Parents support students by providing basic learning materials. At the same time parents need children for labor at home and harvesting. This is more serious for girls.
- Teachers support students by giving tutorials, homework / assignments**.** But they do not check or carry out follow up activities due to large number of students in a classroom.
- Shortage of textbooks and classrooms, library and laboratory and lack of respective facilities affected students learning.
- There is shortage of qualified teachers with new methodologies, classroom seats and congestion of students in a class.
- Subjects in the curriculum are difficult for the students to understand.
- The curriculum is perceived as relevant for the students' daily life. Environmental science at the lower primary and Civics education at the upper primary school are perceived by students as relevant for their need. However, there is a consensus that the curriculum is not adequate for the world of work.
- Learning in the mother tongue has enabled students to relate what they learn with their environment and understand it easily.
- “Free promotion” at lower grades contributed to low achievement of students at higher grades and reduced students' interest to learn.
- There are situations where the community participates in school affairs in a form of constructing, maintaining and facilitating school. On the other hand there are cases where the participation is low, indicating low capacity of the community and gap between the school and community.

Chapter 5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The findings of the study show that:

- The achievement of the students as measured by the composite score at national level was by far less than the minimum expected by the Ethiopian Education and Training Policy.
- The achievement level in each subject was also very low.
- Boys performed better than girls in the composite score. The mean differences in mathematics and reading were not statistically significant.
- Pupils from rural school performed better than those from the urban ones.
- The achievement level of 47.4 % of the students was at 'below basic level' of performance.
- The achievement level of 37.8% of the students was only at 'basic level'.
- Only 14.7% of the students achieved 'proficient level'.
- Decline in achievement level was observed when compared with the First and Second National Learning Assessments.
- Keeping all the other factors constant, *38.0%* of the observed variation in achievement scores as measured by the mean composite score was due to differences in schools.
- Keeping all other factors constant 8.4 % of the observed variation in achievement scores as measured by the mean composite score was due to differences in regions.
- Most students have developed positive attitude in the towards socially relevant issues as measured by the attitude survey which was based on life skills.
- Multiple regression analysis based on the students' background questionnaires resulted in a model which was able to explain 17% of the variations observed in the composite scores at student level. Economic variables that include parents' economic strength to buy clothes, school materials and adequate meals significantly influenced academic performance. Moreover possession of different materials at home including study tables, books other than textbooks, dictionary, radio, and textbooks were found to have significant positive influence. However, possession of television at home was negatively associated with students' learning. Students self concept in Grade Four in all

subjects under study showed positive and significant relationship with academic performance. Students' characteristics including class repetition and absence from school showed negative relationship with academic performance while positive attitude towards school was found to relate positively with academic performance.

- Multiple regression analysis based on teachers' variables resulted in a model which was able to explain 43% of the variation observed in the composite scores at school level. Among the variables positively and significantly related to students' academic performance, the most important ones were the number of times teachers were supervised, different in-service programs attended by teachers, teachers' perception of students' attitude towards school, student punctuality, and discipline. With reference to curriculum the availability of teachers' guide and students' text were found to have significant positive relationship with academic performance.
- Multiple regression analysis based on the information obtained from directors' responses resulted in a model which was able to explain 30.3% of the variation in the composite scores at school level. A variety of school level variables influenced academic achievement. Those included curriculum materials such as the availability of teachers' guide and students' text which have positive relationship with students' academic performance. Another important variable which has significant positive relationship with students' academic achievement is the ability of schools to generate internal income using different methods such as land lease and recreation centers. Although not significant statistically, government's budget, parent's contribution, book rent and donations have positive relations with students' academic performance. Under instructional support using varieties of teaching methods, teaching materials, assessment techniques and use of pedagogical centers showed significant positive relationship with academic performance. As far as the principals perception of students is concerned, loose student teacher relationship, lack of classroom discipline and bad habits among students were reported to have negative significant relationship with student learning. However, students positive attitude towards school and students discipline were found to have positive relationship with achievement. Principals perception of teachers' moral fitness, pride in their school and emphasis on academic subjects have positive relationship with achievement while teacher absenteeism, resistance to change and shortage of teachers were negatively associated.

5.2 Recommendations

Based on the findings of the study the following recommendations are proposed:

1. **A comprehensive school reform has to be introduced to improve the academic performance of the school system taking each subject into account.**

Steps should be taken at all levels to improve the performance of the school system. The observed low academic achievement score calls for immediate action. These actions should involve all variables that influence student learning: home and parental situations, curricular issues, student personal characteristics, school management and instructional support as well as teacher variables.

- Home and parental conditions reform may focus on lowering cost of instructional materials or freely providing those necessities to parents who can not afford, and legislating children's right to education and to sufficient time to study so as to remove the impact of parental labor demands on children.
- Curriculum and instructional support reforms may focus on availing Teacher's Guides, student texts, strengthening pedagogical centers and their regular use. Libraries need to be strengthened to provide references, dictionaries and other reading support materials to students.
- Teacher reforms may need to focus on frequent supervisory support, on-job-training and availing homes close to schools.
- Reforms on school management may focus on supporting schools in the generation of their own incomes (budgetary support by government or non-government bodies) and the maintenance of orderly school environment.
- Reforms on student conditions may focus on training parents or parental committees on how they should encourage students to develop positive self-concept, support their children at home, develop positive attitude towards schooling. Moreover, legislations have to be put in place to minimize student absenteeism. Repetitions have to be reduced using continuous assessment methods, and teachers and schools have to be ready in this respect.

2. **Disparity between boys and girls still needs attention and there is a need to provide additional support to girls.**

All the three Ethiopian National Learning Assessments have demonstrated that girls are at a disadvantage compared to boys. This study has shown that parental conditions, student personal and social conditions, provision of textbooks and learning materials, teacher reforms, and school reforms all influence students learning. The Ministry of Education and Regional Education Bureaus have to develop a Girls Quality Education Assurance mechanism which makes sure that girls are availed additional support from the comprehensive school improvement proposed above.

3. **Pupils in urban schools need more support than what is provided at present.**

The Ethiopian Second and Third National Learning Assessments indicated that urban education has been at a disadvantage in relation to rural areas. Since the current findings suggest that the variables contributing to variations in learning are based on parental, student, teacher and school issues, it is recommended that these comprehensive school reforms are carried out fully in urban schools. Since problems in urban education might be different than what is commonly observed in all schools, there is a need to specially study problems in urban education and address those additional issues. As the constitution of the nation and the Ethiopian Education and Training Policy are based on the principle of equity, such inequality does not need to be tolerated in Ethiopia anymore

4. **Transfer of experience that contributed to the effectiveness of socially relevant issues is required for the improvement of student academic achievement in the various subjects.**

The high achievement in developing positive attitude towards socially relevant issues (life skills) is probably due to the priority given in the Education Sector Development Program. The Ministry of Education has to pay similar attention to raising the level of achievement in academic subjects as a strategy to the improvement of academic performance.

5. **There is a need to progress in academic achievement over time by making use of the recommendations given by the previous and the current national learning assessments**.

Although three National Learning Assessments have identified the main conditions determining student learning in Ethiopia, the extent to which these conditions have

been acted upon by regional offices is not clear. Some regions like Tigary, however, have taken clear actions to make learning assessment a tool for improvement. Others will have to emulate this example, and the Ministry of Education has to encourage and promote such actions.

6. **School feeding has to be encouraged**

The government, schools, community and non-governmental organizations should be encouraged to introduce school feeding for students who have inadequate resources to eat at least once a day. Those who can afford to bring meals should be encouraged to do to avert hunger while schooling is in progress.

7. **Parents should be sensitized to avail home materials that support academic achievement.**

School committees should encourage parents to make available to children materials that enhance academic achievements. Such materials may include study tables, radio, dictionaries, supplementary books and reading materials.

8. **Residences for teachers have to be built around schools.**

The government and community should take actions to avail teachers and principals with residences close to schools. It has been found out clearly that long distances would take the time energy of both teachers and principals.

9. **Teacher support systems have to be strengthened.**

In addition to parental support, students need teacher support. Since most pupils spend most of their time with teachers, this part of teachers' activity is vital to the development of positive self-concept of children, to improved academic performance and to reduced reduction of wastage. Students have to be supported to develop positive attitude towards themselves, and their lessons, and to exert maximum effort to learn.

10. **With in a comprehensive school reform, school leadership need to be reformed.**

Principalship needs to find new directions which emphasize:

- the use of variety of teaching methods, teaching materials, assessment techniques, and pedagogical centers.
- the development and ensuring of high morale of teachers and their emphasis on academic activities.

- the control of teachers' absenteeism, upholding of high level student-teacher relationships, and fostering of respect among the school community to:

11. **School, community and local governments have to work together**

- control the development of bad habits among students.
- support schools in areas of their needs including finance, curriculum, safeguarding school property, school and teacher supervision and labor.
- control situations that lead to student repetitions and dropouts, particularly girls.

12. **Differences within (government) schools have to be eliminated in order to maintain equity in student performance.**

Unexpectedly, the current findings have shown that the contribution of inter-school differences to differences in academic performance has been high (38%). It should be remembered that the samples of this study were selected from government schools. The implication is that there are wide variations among government schools in terms of quality of education. Thus, the government has to give priority to creating equal access for all schools in all regions to conditions that facilitate the improvement of quality education in general and students' academic performance in particular.

13. **Priorities for comprehensive school reform have to be holistic.**

Government reforms to improve the quality of primary education in general and that of students' learning in particular does not matter much unless otherwise all factors which have shown positive relationships with performance are focused. These factors include school level factors, teacher factors, student factors as well as parental and community factors. However, if these factors have to be prioritized, the most powerful areas for consideration were found to be frequent teacher supervision, reduction of distance from the teachers' home to the school, control or reduction of class repetition, control (reduction) of chore at home, control (reduction) of student absenteeism, availability of teachers' guide, and availability of support materials at home.

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