THE ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE, MATHEMATICS AND BIOLOGY

NATIONAL ASSESSMENT OF PROGRESS IN EDUCATION

UGANDA NATIONAL EXAMINATIONS BOARD

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ACRONYMS AND ABBREVIATIONS

BOG	Board of Governors
BTVET	Business, Technical and Vocational Education and Training
DCs	District Coordinators
DEO	District Education Officer
DES	Directorate of Education Standards
DIS	District Inspector of Schools
DTE	Diploma in Teacher Education
EFA	Education For All
EMIS	Education Management Information System
EPRC	Education Policy Review Commission
ESC	Education Service Commission
ESSP	Education Sector Strategic Plan
HOTs	Higher Order Thinking Skills
IMU	Instruction Materials Unit
INSET	In-Service Education and Training
LCM	Lowest Common Multiple
LOTS	Low Order Thinking Skills
MDG	Millennium Development Goals
MoES	Ministry of Education and Sports
NAPE	National Assessment of Progress in Education
NCDC	National Curriculum Development Centre
NTCs	National Teachers' Colleges.
PGDE	Post Graduate Diploma in Education
PLE	Primary Leaving Examination
PPP	Public Private Partnership
PTA	Parents Teachers Association
S 2	Senior Two
S.E	Standard Error
SESEMAT	Secondary Science and Mathematics Teachers' Program
TIE	Teacher Instructor Education
TLs	Team Leaders
UACE	Uganda Advanced Certificate of Education
UCE	Uganda Certificate of Education
UNEB	Uganda National Examinations Board
UPE	Universal Primary Education
UPPET	Universal Post Primary Education & Training
USE	Universal Secondary Education
ZCs	Zonal Coordinators

A WORD FROM THE MINISTER

Minister's Photo

The world over, education is considered a very critical aspect of national development. The government of Uganda, in its effort to improve access to equitable and quality education, launched the Universal Secondary Education (USE) programme in 2006. This led to increase in the number of students attending lower secondary education.

In a similar move, there has been extension of universal secondary education to cover the upper secondary education level. This has necessitated the construction of new seed secondary schools in each sub-county and hard-to-reach areas, expansion of facilities in the already existing secondary schools under the World Bank supported project, enhancement of Public Private Partnership, amongst others.

The duty of evaluating the impact of all such efforts on the teaching and learning process, as a whole, and the learning achievements of students in particular, lies with National Assessment of Progress in Education (NAPE) under UNEB. NAPE has been carrying out assessment of the performance of the education system at the secondary education level, since 2008, in the subject areas of English Language, Mathematics and Biology.

The government recognizes the critical importance of these subjects for the wider career development of students and development of the country as a whole. This is the reason for having national assessment in these three major subject areas on an annual basis.

The role of NAPE in determining the performance and progress of the education system, in order to make informed decisions about the progression in the educational process, needs not be over emphasized. The findings of NAPE, over the years, have proved vital in revealing to us the health status of our education system.

This volume is the fifth annual publication of NAPE at the secondary level. These results are made public so that all stakeholders, including parents, schools, communities and others can act positively on the information, well aware of the areas deserving their utmost attention in the education of their children.

I appeal to you all to take keen interest in this report, with the aim of improving the quality of teaching and learning in schools.

Hon. Major (Rtd) Alupo Jessica Rose Epel, (MP)
Minister of Education and Sports

FOREWORD

Many countries across the world are progressively taking more interest in the role of national assessment for monitoring and improving student learning and achievement levels. This is mainly because of the importance attached to the quality of teaching and learning that they expect for their students.

The government of Uganda, through the Uganda National Examinations Board (UNEB) started implementing national assessment in 1996 and named it National Assessment of Progress in Education (NAPE). NAPE started at the Primary Education level in Primary Three (P 3) and Six (P 6). The first NAPE assessment at the Secondary Education level was carried out in 2008 in Senior Two (2). NAPE provides information on what students know, understand and can do in order to determine the way forward in the education system.

The findings in the previous volumes have done exactly that, by enabling stakeholders see specific areas of their activities that needed their attention most.

This volume is the fifth annual publication of NAPE at the Secondary level, in which assessment has continued to target S 2 students in the subject areas of English Language, Mathematics and Biology.

The report is meant for all stakeholders in education. The reader will note that the report format differs from that of academic researchers, due to the wide range of intended users: from parents and students to politicians and academicians.

It is my hope, that all categories of stakeholders will find this report useful. We do welcome any feedback that you care to offer.

M B B Bukenya
EXECUTIVE SECRETARY

EXECUTIVE SUMMARY

The major purpose of the NAPE 2012 study was to determine the level of achievement of S 2 students in English Language, Mathematics and Biology and find out the factors that influence achievement.

The national sample consisted of 524 schools, which was 18.54% of the schools in Uganda and 19,776 S 2 students (54.40% boys and 46.60% girls), representing 7.22% of the S 2 students in the country. Of the 524 schools, 336 were government and 188 private. The total number of secondary schools in the urban and rural areas was 167 and 357, respectively.

Overall Level of Achievement

Students' achievement was slightly lower than average in English Language and Mathematics and far below average in Biology. This was not surprising because very few could ably respond to questions which required critical thinking.

Achievement by gender

In all the three subject areas, the boys' achievement was more than the girls with half of them rated proficient in English Language and Mathematics. In Biology, although the proportion of boys rated proficient more than doubled that of the girls, the achievement of the boys was also very low with only 2 in 10 attaining the desired achievement level.

Achievement by age

The proportions of students rated proficient decreased with increase in the age of the students. There were significant gender differences in performance at almost all ages and subjects, with more boys than girls rated proficient.

Achievement by school ownership and USE status

The highest proportion of students with the desired rating came from government non-USE schools, followed by those from the private non-USE schools. Low achievement levels were registered by students in both government USE and private USE. This trend of achievement could be due to better facilities and motivation in the former schools and inadequate such facilities in the later schools, hence a need for stakeholders to take action to remedy the situation.

Achievement by school program

Average performance of S 2 students was observed only in English Language in Single session schools, otherwise students in both single and double session schools performed at low levels in Mathematics and Biology.

Achievement by School Location

Performance of students in urban schools was significantly better than that of students in rural schools in all the three subjects. This could be a result of the better learning enrolment in urban compared to rural schools.

Achievement by zone

Performance was best in Kampala and South West zones. Zones in the eastern region had the lowest level of achievement. The level of consistent parental involvement and effort in the children's education could be one of the reasons accounting for such difference.

Chapter 1
INTRODUCTION

1.1   BACKGROUND

Uganda is one of the countries in East Africa, located between Latitudes 4^0 12'N and 1^0 29'S and Longitudes 29^0 34'E and 35^0 0' E; astride the equator. It has a total area of 241,550.7 square kilometers of which land accounts for 199,807.4 square kilometers and the rest, 41,743.2 square kilometers, is open water and swamps[1]. The climate is generally tropical in nature, although it differs from one region to another.

Uganda is a land locked country, bordered by Kenya in the East, the Democratic Republic of Congo in the West, Tanzania in the South, Rwanda in the South West and Southern Sudan in the North. The country is mostly a plateau, whose fringes are marked by mountains and valleys, which, together with other physical features affect the provision of social services like education, in some areas. For instance, access to schools in the island District of Kalangala, which is composed of many small islands on Lake Victoria, poses a challenge, not only to pupils and teachers, but also to education administrators and inspectors. The same applies to the rocky and mountainous districts of Bundibugyo and Kisoro in the West and Bukwo and Bududa in the East. The country is currently divided into 112 districts, from the figure of 87 in 2010; indicating 29% increase (see map on page 3). Owing to the decentralization policy, the districts are administered by the Local Governments, which are supervised by the Central Government's Ministry of Local Government.

Uganda's population has continued to grow over time. It increased from 9.5 million in 1969 to 24.2 million as at 13th September 2002 and it was projected at 34.1 million by mid-2012[2]. The population is increasingly becoming urban from less than 0.8 million persons in 1980 to 5.0 million persons in 2012[3]. This is good news in the struggle to provide quality education as urban areas tend to have better social amenities which attract better skilled manpower to work in the schools. On the other hand, about a half of the population is below 15 years of age, which creates a high level of child dependence. For instance, the number of primary school pupils is expected to increase from 8.4 million in 2010 to 18.4 million in 2037[4]. The high rate of population growth affects the country's effort to achieve and sustain quality education.

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[1] Uganda Bureau of Statistics, 2012 Statistical Abstract, Page 1
http://www.ubos.org
[2] Uganda Bureau of Statistics, 2012 Statistical Abstract, Page 9
http://www.ubos.org
[3] Uganda Bureau of Statistics, 2012 Statistical Abstract, Page 10
http://www.ubos.org
[4] Ministry of Finance and economic Development, Population Secretariat: *Uganda – Population Factors and   National Development, January 2010, Page 2*

The population comprises about fifty ethnic groups, each with a different local language. According to Uganda's language policy, the local language of an area is supposed to be used as the medium of instruction in lower primary in the rural areas while English is taught as a subject. On the other hand, English is the medium of instruction in upper primary and in institutions of higher learning. Kiswahili is also taught in some primary and secondary schools.

A list of the districts in Uganda showing the zones and regions as well as the major languages is given in Table 1.01

TABLE 1.01: REGIONS, ZONES AND DISTRICTS IN UGANDA AND THE MAJOR LANGUAGES SPOKEN

REGION	ZONE	DISTRICTS	MAJOR LANGUAGES
Central	Central I	Buikwe, Butambala, Buvuma, Gomba, Kayunga, Mpigi, Mukono, Wakiso.	Luganda
	Central II	Kiboga, Kyankwanzi, Luweero, Mityana, Mubende, Nakaseke, Nakasongola.	Luganda, Lululi, Runyoro
	Central III	Bukomansimbi, Kalangala, Kalungu, Lwengo, Lyantonde, Masaka, Rakai, Sembabule.	Luganda, Runyankore
East	Far East	Amuria, Bukedea, Kaberamaido, Katakwi, Kumi, Ngora, Soroti, Serere.	Ateso, Kumam
	Mid East I	Bududa, Bukwo, Bulambuli, Kapchorwa, Kween, Manafwa, Mbale, Sironko.	Kupsabiny, Lumasaba
	Mid East II	Budaka, Busia, Butaleja, Kibuku, Pallisa, Tororo.	Ateso, Dhopadhola, Kiswahili, Lugwere Lunyole, Lusamya
	Near East	Bugiri, Buyende, Iganga, Jinja, Kaliro, Kamuli, Luuka, Mayuge, Namayingo, Namutumba.	Lusoga, Lusamya
Kampala		Kampala.	English, Kiswahili, Luganda.
North	Mid North I	Alebtong, Amolatar, Apac, Dokolo, Kole, Lira, Otuke, Oyam.	Lango.
	Mid North II	Agago, Amuru, Gulu, Lamwo, Kitgum, Nwoya, Pader.	Acoli.
	North East	Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit, Napak.	Ngakarimojong, Thur.
	West Nile	Adjumani, Arua, Koboko, Maracha, Moyo, Nebbi, Yumbe, Zombo.	Alur, Kakwa, Lugbara, Madi.
West	Far West	Kabale, Kanungu, Kisoro, Rukungiri.	Rukiga, Kinyarwanda, Rufumbira.
	Mid West	Bundibugyo, Kabarole, Kamwenge Kasese, Kyegegwa, Kyenjojo, Ntoroko.	Kiswahili, Lukhonzo, Lwamba, Rutooro.
	North West	Buliisa, Hoima, Kibaale, Kiryandongo, Masindi.	Kiswahili, Runyoro, Lugungu.
	South West	Bushenyi, Buhweju, Ibanda, Isingiro, Kiruhura, Mbarara, Mitooma, Ntungamo, Rubirizi, Sheema.	Kinyarwanda, Runyankore.

MAP OF UGANDA: (showing the districts)

1.2   EDUCATION IN UGANDA

Uganda's formal system of education is four-tier: seven years of primary education, four years of lower secondary, two years of upper secondary and two to five years of tertiary education.

The Constitution of Uganda stipulates that education is a fundamental right for every citizen. It is therefore, essential for the country to provide quality and relevant education to all its citizens, irrespective of cultural, gender, regional or social differences. Because of this and in response to *the 1990 World Conference on Education for All* (EFA) and *The Millennium Development Goals* (MDGs), Government introduced Universal Primary Education (UPE) in 1997, and Universal Secondary Education (USE) in 2007. Accordingly, the total enrolment at secondary level increased by 10 % between 2008 and 2009.[5] Because of the high number of students, some schools are implementing the double-session system. This is a system where some students in a school attend class in the morning and others in the afternoon. In addition, Government has entered into a Public-Private-Partnership (PPP) with some private schools to make it possible for every qualifying student to access secondary education under USE.

Regarding equity, Government has improved the learning environment in schools to make it more conducive for both boys and girls. To reinforce the success in gender parity at the primary level and to roll out gender equity in the entire education sector, Government launched *The Gender Policy in Education* in 2010. The Ministry of Education and Sports (MoES) has also made effort in the area of special needs education, leading to an increase in the number of secondary school students with special needs by about 20% between 2008 and 2010.[6]

To improve the quality of education in schools, Government and its development partners have put in place a number of quality enhancement initiatives. Classrooms, libraries and laboratories are being constructed. The curriculum is also under review to make it more relevant to the country's needs. In addition, more resources have been provided to the Directorate of Education Standards (DES) for supervision and monitoring of the teaching-learning process. Recruitment of more teachers, training of Science and Mathematics teachers through the SESEMAT (Secondary Science and Mathematics Teachers) programme are some of the other quality improvement initiatives. Uganda National Examinations Board (UNEB) too, has been provided with resources to regularly assess and monitor the learning achievements of students.

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[5] Uganda Bureau of Statistics, 2010 Statistical Abstract , Pg 10
   http://www.ubos.org
[6] Uganda Bureau of Statistics, 2010 Statistical abstract, Page 9 – 12
http://www.ubos.org

1.3   NATIONAL ASSESSMENT OF PROGRESS IN EDUCATION

The Education Policy Review Commission (EPRC, 1989) reported lack of reliable and up-to-date data on educational indicators. Back then, the only assessment information used for monitoring and evaluation was based on the end-of-cycle examination results and reports by examiners on the examinations.   However, these examinations are designed to primarily serve as tools for certification and selection to higher institutions of learning.   National Assessment of Progress in Education (NAPE) was, therefore, established to supplement the information from the examinations.   NAPE is used to ascertain the level of students' learning achievement and to monitor changes in the achievement levels over time. It determines the skills that a cohort of students has acquired and is capable of acquiring in relation to the objectives of the curriculum.   The first national assessment in Uganda at the secondary level was conducted in S 2 in 2008, though at primary level, it started as early as 1996. Since then, it has been conducted annually in the same class.

1.3.1   Objectives of NAPE

The main objectives of NAPE are:

- Determine and monitor the level of achievement of students over time.
- Generate information on what students know and can do in different curricular areas.
- Evaluate the effectiveness of reforms in the education system.
- Provide information on variables which affect learning achievement.
- Suggest measures for the improvement of teaching and learning in schools.
- Provide data for planning and research.

1.4   THE 2012 NAPE STUDY

This volume presents the results of the 2012 NAPE survey. The objectives of the study are presented in the sequel. The description of the instruments and the procedures for selecting the sample and administering the instruments is contained in Chapter 2. Results of students' achievement in English Language are presented in Chapter 3. This is followed by the results of Mathematics in Chapter 4 and Biology in Chapter 5. Finally, the conclusions, discussion and recommendations are given in Chapter 6. The results are presented in terms of the mean scores and percentages of students achieving the defined levels of proficiency.   Statistics are also provided by student gender, age, school USE (Universal Secondary Education) status or not, programme (single or double session), ownership (government or private), school location (urban if situated within a municipality, or the major town of a district and rural if situated outside the main town) and zones of the country.

The objectives of the 2012 survey were to:

1. Determine students' level of achievement in English Language, Mathematics and Biology.
2. Examine students' patterns of performance in the competencies, skill areas and topical areas of English Language, Mathematics and Biology.
3. Examine the relationship between achievement and students' gender, age, school USE status, ownership, school location, program and zones of the country.
4. Compare achievement of students from 2008 to 2012.

Chapter 2

SURVEY PROCEDURES

2.1   INTRODUCTION

This chapter gives a description of the instruments, as well as the procedures that were used in selecting the sample, collecting, capturing and analyzing the data.

2.2   STUDENT TESTS

There were written tests of Mathematics, English Language and Biology. The tests were based on the Uganda Secondary School Curriculum and were developed at a central workshop by a team of experts comprising secondary school teachers, personnel from the National Curriculum Development Centre (NCDC), Universities and Uganda National Examinations Board (UNEB). The tests consisted of restricted and free response items. The compositions of the tests are given in Tables 2.01–2.03

TABLE 2.01:   RELATIVE WEIGHTS ALLOCATED TO EACH SKILL AND SUB-SKILL AREA OF THE ENGLISH   LANGUAGE TEST

SKILL AREA	SUB - SKILL AREA	SUB-TOTAL	(WEIGHT)
Reading	Passage	11	36
	Dialogue	8	
	Poetry	7	
	Report	10	
Writing	Advertisement	10	34
	Formal letter	12	
	Composition	12	
Grammar	Punctuation	4	30
	Structural patterns	7	
	Articles and words of quantity	4	
	Parts of speech.	15	
TOTAL			100

TABLE 2.02:   RELATIVE WEIGHTS ALLOCATED TO EACH TOPICAL AREA
             AND ABILITY LEVEL OF THE MATHEMATICS TEST

TOPICAL AREA	ABILITY LEVELS			Total (Weight)
	Basic	Adequate	Advanced	
Set theory, probability, relations and mappings.	4	3	3	10
Number concepts (including estimation and number patterns and sequences)	6	10	9	25
Cartesian coordinates and graphs.	1	5	4	10
Geometry	4	5	5	14
Measures	5	9	5	19
Transformations and functions.	5	3	4	12
Statistics	2	5	6	13
TOTAL	27	40	36	103

TABLE 2.03:   RELATIVE WEIGHTS ALLOCATED TO EACH TOPICAL AREA AND
             ABILITY LEVEL OF THE BIOLOGY TEST

TOPICAL AREA	ABILITY LEVEL			TOTAL (Weight)
	Basic	Adequate	Advanced	
Introduction to Biology.	3	3		6
Diversity of living things.	3	7	8	18
Microscopes and hand lenses.	2	8		10
Animal and plant cells.	5	2		7
External features and internal structures of flowering plants.	10	14	10	34
External features, life cycles and economic importance of insects.	6	5	5	16
Soil	9	13	7	29
TOTAL	38	52	30	120

2.3   SURVEY DESIGN

2.3.1   SURVEY POPULATION

The target population consisted of students in senior two (S 2) in all the secondary schools (both government and private) in Uganda in July 2012.

2.3.2   SAMPLING DESIGN

A two-stage stratified cluster sampling design was used. The first stage involved selecting a random sample of schools, stratified by zone. Within a zone, it was ensured that schools were selected from each of the districts in the zone. Hence, the sample consisted of schools from all the 112 districts of Uganda. In the second stage, a random sample of 30 students was

selected from among those who were present in the school on the day of the survey.

2.3.3 SELECTION OF SCHOOLS

A list of secondary schools from the Education Management Information System (EMIS), showing the total school enrolment and the number of S 2 students provided the sampling frame.

The number of schools selected from a particular zone was proportional to the S 2 enrolment in the zone. However, a minimum of three schools were sampled from each of the districts within the zone. The districts of Amudat, Buvuma, Kalangala and Kotido could not raise the required minimum number of schools, so all their schools were included in the sample.

As in the previous surveys, Kampala District was considered as a separate stratum because of its uniqueness. Being the capital city of the country, it is the most urbanized district with a population that has highly competitive socio-economic characteristics, which are likely to enhance the achievement of learners.

Schools for the Blind and the Deaf were included in the sample, but were not considered as part of the zonal quota.

2.3.4 SELECTION OF STUDENTS

A simple random sample of 30[7] students was selected from each school according to set out guidelines which guaranteed the random nature of the selection procedures. The sample size of 30 was maintained because increasing the number to more than 30 raises the accuracy level only by a negligible amount, and yet the cost of instrument production and administration gets much higher. Secondly, most secondary school classrooms in Uganda take up to about 30 test takers sitting in an appropriately spaced manner, and one test administrator can effectively supervise about 30 students.

2.3.5 SAMPLE SIZE

The national sample consisted of 524 schools, which was 18.54% of the schools in Uganda and 19,776 students, representing 7.22% of the S 2 students in the country.

Of the 524 schools, 336 were government and 188 private. The total number of schools in the urban and rural areas was 167 and 357, respectively.

The number of schools sampled as well as the number in the sample frame are shown in Table 2.04.

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[7] In schools for the Deaf and Blind all the S 2 students were included in the sample.

TABLE 2.04: NUMBER OF SCHOOLS IN THE SAMPLE AND IN THE REGION, ZONE AND DISTRICTS

REGION	ZONE	DISTRICTS
Central [132 ; 1011]	Central I (68; 470)	Buikwe (9; 56[+]), Butambala (5; 25) Buvuma (2; 2) Gomba (3; 18), Kayunga (6; 49), Mpigi (8; 42), Mukono (12; 88), Wakiso[*] (23; 190)
	Central II (35; 235)	Kiboga (3; 18), Kyankwanzi (3; 12), Luwero (10; 74), Mityana (6; 38) Mubende (5; 45), Nakaseke (4; 26), Nakasongola (4; 22)
	Central III (29; 165)	Bukomansimbi (3; 16), Kalangala (2; 2), Kalungu (3; 23), Lwengo (3; 17), Lyantonde (3; 7), Masaka (6; 34) ; Rakai (5; 45), Sembabule (4; 21)
East [146 ; 687]	Far East (27, 109)	Amuria (3; 12), Bukedea (3; 11), Kaberamaido (3; 16), Katakwi (3; 11), Kumi (3; 11), Ngora (3; 10), Serere (3; 13), Soroti[*] (6; 25)
	Mid East I (37; 160)	Bududa (3; 7), Bukwo (3; 10), Bulambuli (3; 13), Kapchorwa (4; 11), Kween (3; 11), Manafwa (6; 33), Mbale[*] (9; 54), Sironko (6; 21)
	Mid East II (29; 153)	Budaka (3; 14), Busia (6; 31), Butaleja (4; 18), Kibuku (3;11), Pallisa (4; 267), Tororo (9; 52)
	Near East (53; 265)	Bugiri (7; 36), Buyende (3; 12), Iganga (8; 34), Jinja (10; 57), Kaliro (3; 18), Kamuli (8; 39), Luuka (3; 18), Mayuge (4; 26), Namayingo (3; 9), Namutumba (4; 16),
North [99 ; 355]	Mid North I (27; 81)	Alebtong (3; 8), Amolatar (3; 6), Apac (3; 12), Dokolo (3; 7), Kole (3; 10), Lira[*] (6; 25), Otuke (3; 4), Oyam (3; 9)
	Mid North II (22; 79)	Agago (3; 8), Amuru (3; 7), Gulu (4; 24), Kitgum (3; 17), Lamwo (3; 5), Nwoya (3; 4), Pader (3; 14).
	North East (19; 22)	Abim (3; 4), Amudat (2; 2), Kaabong (3; 3), Kotido (2; 2), Moroto (3; 5), Nakapiripirit (3; 3), Napak (3; 3).
	West Nile (31; 174)	Adjumani (3; 15), Arua (8; 67), Koboko (3; 13), Maracha (3; 12), Moyo (3; 13), Nebbi (4; 23), Yumbe (4; 22), Zombo (3; 9)
West [130 ; 773]	Far West (28; 165)	Kabale (12; 74), Kanungu (5; 27), Kisoro (4; 27), Rukungiri (7; 37)
	Mid West (32; 192)	Bundibugyo (3; 14), Kabarole (7; 42), Kamwenge (3; 26), Kasese (10; 77), Kyegegwa (3; 10), Kyenjojo (4; 21), Ntoroko (2; 2)
	North West (25; 144)	Buliisa (3; 6), Hoima (6; 38), Kibaale (8; 59), Kiryandongo (3; 15) Masindi (5; 26)
	South West (45; 272)	Buhweju (3; 5), Bushenyi (6; 30), Ibanda (4; 15), Isingiro (3; 32), Kiruhura (3; 25), Mbarara (9; 55), Mitooma (4; 32), Ntungamo (7; 44), Rubirizi (3; 8), Sheema (3; 26)
Kampala		Kampala (17; 141)
Uganda		(524; 3,067)

[+] First figure in the brackets is the number of schools in the sample and the second is the number of schools in the zone or district.

[*] These Districts had schools for the Blind or Deaf.

2.3.6 DISTRIBUTION OF SAMPLED STUDENTS BY SELECTED FACTORS

In this section, the distribution of S 2 students who actually participated in the survey according to gender, age, school ownership, location and zone is presented.

The distribution of S 2 students in the achieved sample according to gender, age, school USE status, program, ownership, location and zone is given in Tables 2.05 to 2.11.

TABLE 2.05:   THE DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY AGE AND GENDER

AGE (years)	BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent)	
11 – 13	102	(0.95)	152	(1.69)	254	(1.28)
14	902	(8.38)	1,265	(14.03)	2,167	(10.96)
15	2,091	(19.43)	2,704	(29.99)	4,795	(24.25)
16	3,221	(29.94)	3,092	(34.29)	6,313	(31.92)
17	2,614	(24.30)	1,350	(14.97)	3,964	(20.04)
18	1,222	(11.36)	348	(3.86)	1,570	(7.94)
18+[β]	607	(5.64)	106	(1.18)	713	(3.61)
Total	10,759	(54.40)	9,017	(45.60)	19,776	(100.00)

TABLE 2.06:   DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY SCHOOL USE STATUS AND GENDER

SCHOOL USE STATUS	BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent)	
USE	8,920	(55.47)	7,160	(44.53)	16,080	(81.30)
Non – USE	1,839	(49.76)	1,857	(50.24)	3,696	(18.70)
Total	10,759	(54.40)	9,017	(45.60)	19,776	(100.00)

[β]Above 18 years old.

TABLE 2.07: DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY SCHOOL OWNERSHIP AND GENDER

SCHOOL OWNERSHIP	BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent)	
Government	7,966	(56.30)	6,184	(43.70)	14,150	(71.55)
Private	2,793	(49.64)	2,833	(50.36)	5,626	(28.45)
Total	10,759	(54.40)	9,017	(45.60)	19,776	(100.00)

TABLE 2.08: DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY SCHOOL OWNERSHIP, USE STATUS AND GENDER

SCHOOL OWNERSHIP AND USE STATUS		BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent	
GOVERNMENT	USE	7,453	(56.15)	5,821	(43.85)	13,274	(93.81)
	Non-USE	513	(58.56)	363	(41.44)	876	(6.19)
	TOTAL	7,966	(56.30)	6,184	(43.70)	14,150	(100.00)
PRIVATE	USE	1,467	(52.28)	1,339	(47.72)	2,806	(49.88)
	Non-USE	1,326	(47.02)	1,494	(52.98)	2,820	(50.12)
	TOTAL	2,793	(49.64)	2,833	(50.36)	5,626	(100.00)

TABLE 2.09: DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY SCHOOL PROGRAM AND GENDER

SCHOOL PROGRAM	BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent)	
Single – session	7,517	(53.73)	6,474	(46.27)	13,991	(70.75)
Double – session	3,242	(56.04)	2,543	(43.96)	5,785	(29.25)
Total	10,759	(54.40)	9,017	(45.60)	19,776	(100.00)

TABLE 2.10: *DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY SCHOOL LOCATION AND GENDER*

SCHOOL LOCATION	BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent)	
Urban	3,777	(54.60)	3,140	(45.40)	6,917	(35.00)
Rural	6,982	(54.30)	5,877	(45.70)	12,859	(65.00)
Total	10,759	(54.40)	9,017	(45.60)	19,776	(100.00)

TABLE 2.11: *DISTRIBUTION OF S 2 STUDENTS IN THE ACHIEVED SAMPLE BY ZONE AND GENDER*

REGION	ZONE	BOYS (N, Percent)		GIRLS (N, Percent)		ALL (N, Percent)	
Central	Central I	1,135	(10.55)	1,198	(13.29)	2,333	(11.80)
	Central II	647	(6.01)	676	(7.50)	1,323	(6.69)
	Central III	443	(4.12)	531	(5.89)	974	(4.93)
East	Far East	654	(6.08)	411	(4.56)	1,065	(5.39)
	Mid East I	695	(6.46)	651	(7.22)	1,346	(6.81)
	Mid East II	898	(8.35)	622	(6.90)	1,520	(7.69)
	Near East	1,219	(11.33)	1,101	(12.21)	2,320	(11.73)
Kampala	Kampala	335	(3.11)	385	(4.27)	720	(3.64)
North	Mid North I	545	(5.07)	310	(3.44)	855	(4.32)
	Mid North II	615	(5.72)	288	(3.19)	903	(4.57)
	North East	377	(3.50)	267	(2.96)	644	(3.26)
	West Nile	650	(6.04)	399	(4.42)	1,049	(5.30)
West	Far West	417	(3.88)	423	(4.69)	840	(4.25)
	Mid West	796	(7.40)	643	(7.13)	1,439	(7.28)
	North West	650	(6.04)	449	(4.98)	1,099	(5.56)
	South West	683	(6.35)	663	(7.35)	1,346	(6.81)
Uganda		10,759	(54.40)	9,017	(45.60)	19,776	(100.00)

2.3.7 SAMPLING WEIGHTS

Sampling weights were determined and applied to the data in order to be able to reflect the probability of being sampled, adjustments for non-response as well as post stratification adjustments. This would allow for un-biased and efficient estimates of the levels of proficiency and mean scores in English Language, Mathematics and Biology.

2.4 DATA COLLECTION

A total of 720 officers were appointed to work as Zonal Coordinators (ZC) and Team Leaders (TLs) of the data collection process in the schools. The officers included Secondary School teachers, retired senior educationists, personnel for UNE, DES< NCDC, Kyambogo University, Gulu University, Nkumba University the Headquarters of the Ministry of Education and Sports.

The ZCs and TLs had a one–day training in Kampala facilitated by senior NAPE officers. They used a pre–prepared Test Administrator's Manual which detailed the procedures. The officers discussed fully what was outlined in the Manual. This included, among others, how to obtain a random sample of 30 students and how to conduct the tests as well as the timetable for each day of assessment.

In a school, each TL worked with one test administrator, selected from among secondary school teachers. Double-session schools had two test administrators each. The test administrators had a one–day training in the zone, facilitated by the ZC. Thereafter, the two (or three in a double-session school) conducted assessments in one school for two consecutive days, following the timetable.

2.5 STATISTICAL DATA ANALYSIS

The tests were scored by secondary school teachers at a central venue in Kampala. The test scores were captured using EpiDATA (version 3.02), and analysis was done using the STATA (version 12.0) statistical package.

Data analysis was done at three levels. Firstly, the analysis involved determining the overall achievement level in each subject in terms of mean scores and the percentages of students reaching the desired levels of proficiency. Secondly, the proportion of students rated proficient in each competency of a subject was determined. Finally, performance was analyzed by students' gender and age, school USE status, program, ownership, location and zone.

Students' achievement in each of the tests was described using one of three levels: 'Advanced', 'Adequate' and 'Basic'. This criterion was set at the time of preparing the tests. Detailed description of the categorization of the competencies, by performance levels is given in Section 2 of Chapters 3 – 5. The performance levels were defined as follows:

Advanced level: Indicates superior performance. A student with this rating is considered to have demonstrated complete mastery of the subject matter.

Adequate level: Demonstrates competence in the subject matter. This is the minimum performance level that was desired of the students.

Basic level: Demonstrates the ability to understand only elementary concepts and skills. A student at this level is performing below his/her class level.

NOTE: *A student is rated proficient if he/she has reached 'Advanced' or 'Adequate' level of proficiency.*

Chapter 3

ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE

3.1   INTRODUCTION

The achievement of S 2 students in English Language is presented in this chapter.   First, the overall mean score and the proportions of students reaching different levels of proficiency are given.   This is followed by a description of the proportions of students rated proficient in the different sub-skill areas and competencies of the language.   Lastly, the mean scores and percentages of students rated proficient are given according to gender and age, school ownership, USE status, program, location and zone.   The competencies assessed in the test are described in the next section.

3.2   DESCRIPTION OF THE COMPETENCIES BY PROFICIENCY LEVELS

The description of the competencies assessed is given below:

NOTE: A student at any proficiency level is assumed to have mastered all the competencies at his/her own level and below.

Skill Area	Competencies by performance levels		
	BASIC LEVEL	ADEQUATE LEVEL	ADVANCED LEVEL
Reading Comprehension	A student is able to: • Read a text and answer direct questions about it.	A student is able to: • Read a text, derive meaning of words used and interpret the message in the text.	A student is able to: • Read a text and answer questions about it by making predictions, inferences and applying information in new situations.
Writing	• Write a composition, but makes errors in spellings, punctuation, sentence construction and tenses. • Write an advert, but make errors in content, format	• Write a well sequenced composition, but make a few errors in spellings, punctuation and tenses. • Write an advert, but with a few errors in format	• Write a coherent composition, relevant to the topic with correct spellings, punctuation and tenses. • Write an advert with the correct

Skill Area	Competencies by performance levels		
	BASIC LEVEL	ADEQUATE LEVEL	ADVANCED LEVEL
	and leaves out either time or date or both.	and leaves out either date or time.	persuasive language, content, format and other attributes.
	• Write a formal letter with some errors in the format, punctuation, spellings and sentence construction.	• Write a formal letter, but makes some errors in the format.	• Write a formal letter, with the correct format and sentence construction.
Grammar	• Identify the present and past simple tenses. • Use the present and past simple tenses. • Use a few parts of speech correctly. • Use a few punctuation marks and capital letters correctly. • Use a few familiar structures correctly. • Use a few words of quantity and articles correctly.	• Identify the past continuous tense. • Use most parts of speech correctly. • Use most punctuation marks and capital letters correctly. • Use most structures correctly. • Use words of quantity and articles correctly.	• Identify the future tense. • Use the past continuous and future tenses correctly. • Use parts of speech correctly. • Use punctuation marks and capital letters correctly. • Use given structures correctly.

NOTE: *A student is rated proficient if he/she has reached 'Advanced' or 'Adequate' level of proficiency.*

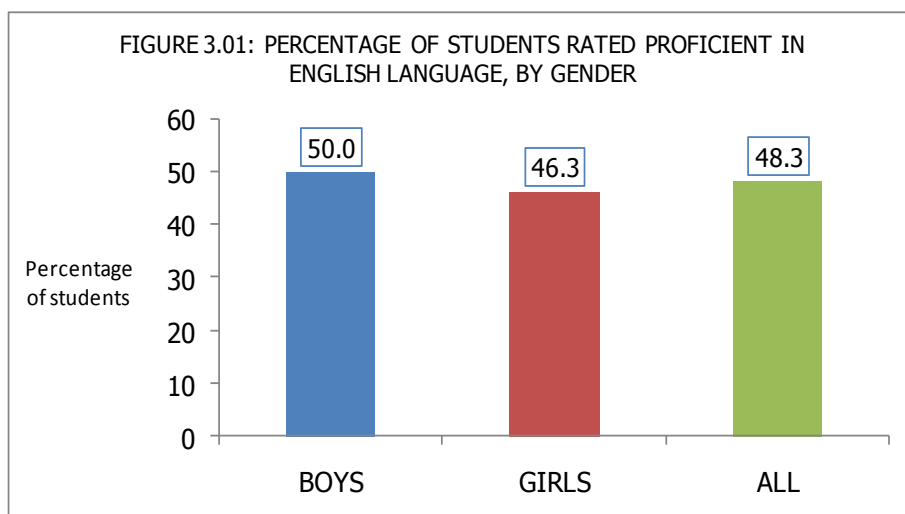## 3.3 OVERALL LEVEL OF ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE

S 2 students obtained an overall mean score of 48.8% (Standard Error - S.E: 0.66). The difference between the mean scores of 49.2% (S.E: 0.89) for the boys and 48.2% (S.E: 0.60) for the girls was not significant. The percentage of students who reached the various proficiency levels in English Language is given in Table 3.01.

PERCENTAGE OF S 2 STUDENTS REACHING VARIOUS LEVELS OF PROFICIENCY IN ENGLISH LANGUAGE, BY GENDER.

PROFICIENCY LEVELS	BOYS	GIRLS	ALL
Advanced	8.0	6.5	7.3
Adequate	41.9	39.8	41.0
Basic	50.1	53.7	51.7

A proportion of 7.3% of the S 2 students were rated 'Advanced'. These are students who had acquired the skills of English Language as specified in the S 2 level curriculum. Another group of 41% obtained the 'Adequate' level of proficiency. These are students who had acquired the minimum desired level of proficiency in English Language at this level. Finally, 51.7% of the students were categorized as 'Basic'. These students had acquired only the basic skills of the language.

Figure 3.01 shows the percentages of students rated proficient in English Language by Gender.

FIGURE 3.01: PERCENTAGE OF STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE, BY GENDER

Gender	Percentage of students
BOYS	50.0
GIRLS	46.3
ALL	48.3

Overall, 48.3% of the S 2 students were rated proficient in English Language. The proportions for the boys and girls were 50% and 46.3% respectively. So, the boys performed significantly better than the girls.
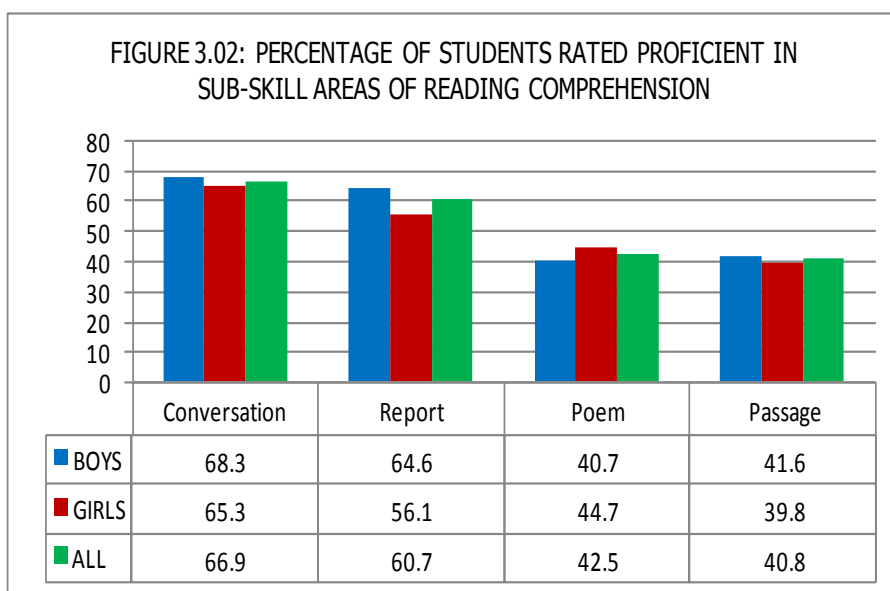
3.4 ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE BY SKILL AREA

3.4.1 Achievement of Students in the Sub-skill Areas and Competencies of Reading Comprehension.

The students' achievement in English Language by the sub-skill areas of Reading Comprehension is presented in this section. The flag on each

competency was assigned the colour: 'Green', 'Yellow' or 'Red'. Green represents a competency in which at least three quarters of the students were rated proficient. 'Yellow' indicates competencies in which at least a half, but less than three quarters of the students reached the desired proficiency. Finally, 'Red' shows the competencies in which less than a half of the students acquired the desired rating.

Figure 3.02 shows the percentage of students rated proficient in the sub-skill areas of Reading Comprehension.

FIGURE 3.02: PERCENTAGE OF STUDENTS RATED PROFICIENT IN SUB-SKILL AREAS OF READING COMPREHENSION

	Conversation	Report	Poem	Passage
BOYS	68.3	64.6	40.7	41.6
GIRLS	65.3	56.1	44.7	39.8
ALL	66.9	60.7	42.5	40.8

More than two-thirds of the students (66.9%) were rated proficient in 'reading and understanding a conversation. On the other hand, the lowest proportion of 40.8% was registered in 'reading a passage'. Significant gender differences were registered in 'reading a report and 'reading a poem'.

Table 3.02 shows the percentage of students rated proficient in selected competencies of Reading Comprehension.
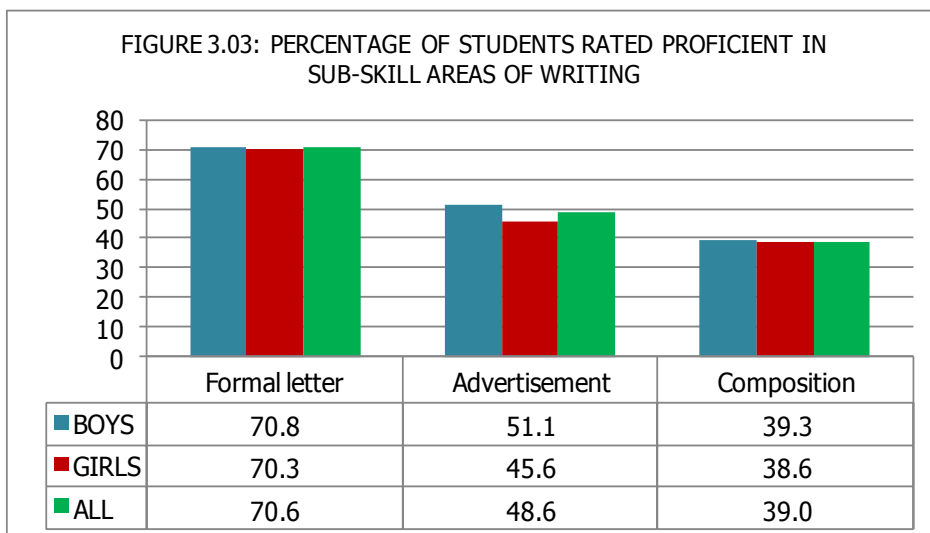
TABLE 3.02: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF READING COMPREHENSION

COMPETENCIES	BOYS	GIRLS	ALL
Poetry			
Reading a poem and answering questions which require direct responses from the text.	45.7	44.8	45.3
Reading a poem and making conclusions by reasoning based on the information in the text.	27.6	35.6	31.3
Reading a poem and giving it a suitable title.	19.5	20.1	19.8
Report			
Reading a report and answering questions which require direct responses from the text.	74.0	64.4	69.6
Reading a report and answering questions requiring one to form own opinion.	42.6	44.0	43.3
Reading a report and deriving the contextual meaning of a word.	31.9	25.2	28.9
Passage			
Reading a passage and answering questions which require direct response from the text.	63.3	59.0	61.3
Reading a passage and making conclusions by reasoning based on information in the text.	39.0	37.6	38.3

More students did well in competencies of recall nature, where they were required to get the responses directly from the text, than where there was need to use higher order thinking skills. For example, in poetry 45.3% of the students could answer direct response questions while only 19.8% could read a poem and give it a suitable title. Likewise, in reading a report, 69.6% of the students were able to answer questions of recall nature compared to 28.9% who were able to read a report and derive the contextual meaning of a word. The situation was not any different in the reading of a passage, where 61.3% exhibited ability to respond to questions requiring direct responses from the passage and only 38.3% showed ability to read a passage and make conclusions based on information in the text.

3.4.2 Achievement of Students in Sub-skill Areas and Competencies of Writing

This section is a presentation of the S 2 students' achievement in writing. Figure 3.03 shows the percentage of students rated proficient in the sub-skill areas of writing.

FIGURE 3.03: PERCENTAGE OF STUDENTS RATED PROFICIENT IN SUB-SKILL AREAS OF WRITING

	Formal letter	Advertisement	Composition
BOYS	70.8	51.1	39.3
GIRLS	70.3	45.6	38.6
ALL	70.6	48.6	39.0

More than two-thirds of the students were rated proficient in writing a formal letter applying for a job. However, a smaller proportion (48.6%) could ably write an advertisement, and only 39.0% were able to write a composition. There were significant gender differences in the performance of students in the sub-skill areas of writing an advertisement.

Table 3.03 shows the percentage of students rated proficient in the selected attributes of composition writing and writing of advertisements.

TABLE 3.03:   PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF WRITING

COMPETENCIES	BOYS	GIRLS	ALL
Composition			
Format	54.1	55.2	54.6
Sequence	45.2	44.6	44.9
Grammar	41.8	43.6	42.6
Content	32.1	32.0	32.1
Title	30.2	30.4	30.3
Impression	14.1	13.9	14.0
Advertisement			
Title	58.1	53.4	55.9
Target audience	54.3	51.2	52.9
Author	48.1	44.5	46.4
Venue	48.3	43.0	45.9
Persuasive language	43.1	40.1	41.7
Content	37.6	36.0	36.9
Format	33.9	30.8	32.5
Date and time	32.9	29.7	31.4

More than a half of the students (54.6%) wrote their compositions using the correct format. Only 32.1% had compositions with relevant content. No significant gender differences were recorded in any of the competencies.

On the other hand, a proportion of 55.9% of the students wrote advertisements bearing titles, while less than a third (31.4%) indicated the date and time related to the message in the advert. There were significant gender differences in three attributes, that is, title, author and venue with more boys than girls rated proficient.

3.4.3 Achievement of S 2 Students in Competencies of Grammar

This section shows the achievement of S 2 students in competencies of grammar.

Table 3.04 shows the percentage of students rated proficient in the competencies of grammar.

TABLE 3.04:   PERCENTAGE OF STUDENTS RATED PROFICIENT IN THE COMPETENCIES OF GRAMMAR

COMPETENCIES	BOYS	GIRLS	ALL
Using the correct tenses.	80.9	79.9	80.5
Using pronouns.	74.3	79.5	76.7
Using nouns.	75.2	74.4	74.8
Conjunctions	69.5	68.6	69.1
Using adverbs.	62.1	61.4	61.8
Conditional sentences	60.9	56.8	59.1
Using adjectives.	59.9	56.2	58.2
Using prepositions.	58.0	49.3	54.0
Applying the correct punctuation.	50.6	51.7	51.1
Using articles.	51.0	50.7	50.8
Using given sentence structures.	38.9	36.3	37.7

More than three quarters of the students (80.5%) exhibited understanding of the use of correct tenses. This was followed by those who could ably use nouns and pronouns. However, just slightly more than a half of the students, 50.8% and 51.1%, respectively, could use articles correctly and apply the correct punctuation.

3.5 ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE BY AGE

This section is a presentation of the students' achievement in English Language by age. The mean scores of students in English Language by age are shown in Table 3.05.

TABLE 3.05: MEAN SCORES (PERCENTAGE) OF S 2 STUDENTS IN ENGLISH LANGUAGE BY AGE AND GENDER.

AGE (years)	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
13	66.3	2.94	61.3	2.28	63.4	2.31
14	59.9	1.83	58.0	1.13	58.8	1.19
15	54.6	1.22	49.9	0.68	52.0	0.75
16	48.9	0.68	44.3	0.49	46.7	0.50
17	43.9	0.60	40.6	0.60	42.8	0.50
18	39.5	0.70	38.3	1.10	39.3	0.62
18+	39.8	0.90	39.7	1.50	39.8	0.84

The mean scores of students decreased with successive increase in age from 63.4% (S.E: 2.31) at age 13 years to (39.8%) (S.E: 0.84) for the 18 year olds and above. There were significant gender differences in performance at the ages: 13, 15 and 16 years old.

Figure 3.04 shows the proportion of S 2 students reaching the defined competency level by age.

FIGURE 3.04: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE, BY AGE AND GENDER

AGE (Years)	13	14	15	16	17	18	18+
BOYS	87.5	73.8	63.3	50.0	37.3	26.2	26.6
GIRLS	78.7	71.0	49.8	37.3	26.8	23.0	20.6
ALL	82.3	72.2	55.9	44.0	33.8	25.5	25.7
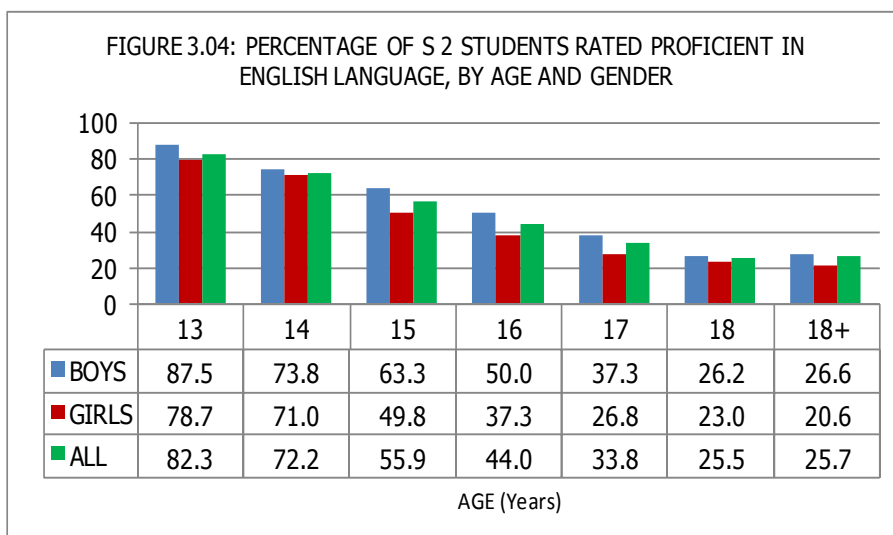
The proportions of students rated proficient were higher at age 13 and 14 years old with 82.3% and 72.2% rated proficient respectively. These percentages declined gradually to 25.7% rated proficient of the 18 year olds and above. There were significant gender differences in performance at almost all ages, except at age 14, with more boys than girls rated proficient.

3.6 ACHIEVEMENT OF STUDENTS IN ENGLISH LANGUAGE BY SCHOOL OWNERSHIP AND USE STATUS

The performance of students according to the ownership and USE status of their schools is presented in this section. First, achievement by school ownership is presented followed by a description of the students' achievement by school USE status. Finally, achievement of students according to both school ownership and USE status is given.

3.6.1 Achievement of Students in English Language by School Ownership

This section presents the students' achievement by school ownership. The mean scores of students in English Language by school ownership are shown in Table 3.06.

TABLE 3.06: MEAN SCORES (PERCENTAGES) OF S 2 STUDENTS IN ENGLISH LANGUAGE BY SCHOOL OWNERSHIP AND GENDER.

SCHOOL OWNERSHIP	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Government	49.2	1.19	47.3	0.78	48.4	0.91
Private	49.2	1.02	50.1	1.12	49.7	0.97

The mean scores of students in both government and private schools are nearly the same. Gender performance exhibited no significant difference between boys and girls.

Figure 3.05 shows the percentage of students reaching the desired level of proficiency.

FIGURE 3.05: PERCENTAGE OF STUDENTS RATED PROFICIENT IN ENGLISH LANGUGE, BY SCHOOL OWNERSHIP AND GENDER
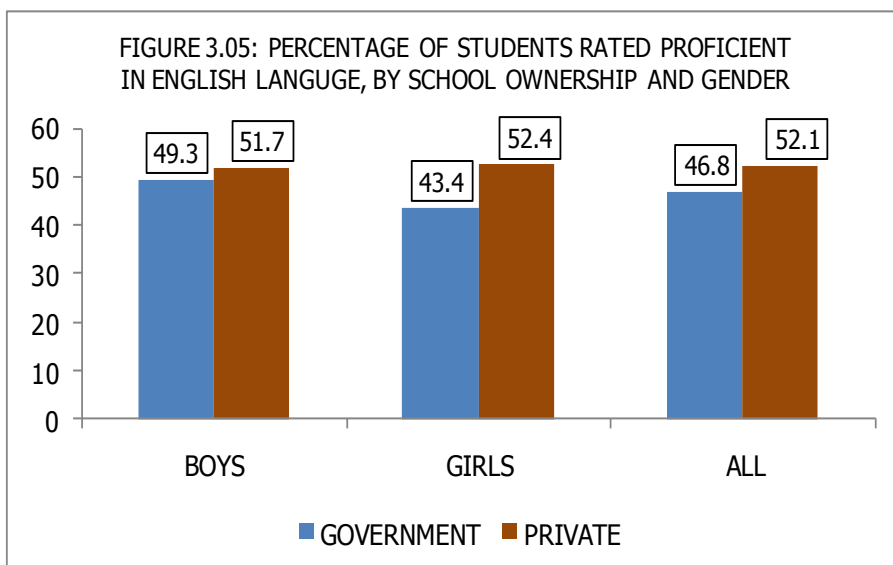
Private schools had significantly more students (52.1%) rated proficient compared to government schools with 46.8% rated proficient. Gender disparity was registered between boys and girls in government schools with 49.3% and 43.4% reaching the desired levels of proficiency, respectively.

3.6.2 Achievement of students in English Language by School USE Status

The achievement of students in English Language by school USE status is described in this section.

Table 3.07 shows the mean scores of students in English Language by school USE status and gender.

TABLE 3.07:   MEAN SCORES (PERCENTAGE) OF S 2 STUDENTS IN ENGLISH LANGUAGE BY SCHOOL USE STATUS

SCHOOL USE STATUS	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
USE	45.1	0.59	44.2	0.55	44.7	0.53
Non-USE	62.3	1.93	59.7	1.13	61.1	1.40

Students in non-USE schools scored a higher mean score of 61.1% compared to their counterparts in USE schools with a mean of 44.7%. There were no significant gender differences in mean scores.
Figure 3.06 shows the proportions of students who were rated proficient in English Language by school USE status.

FIGURE 3.06: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE, BY SCHOOL USE STATUS AND GENDER

More than three quarters of the students (77.8%) in non-USE schools were rated proficient in English Language while 38.6% reached the same level in USE schools. The gender differences were significant with 80.0% boys and 75.3% girls rated proficient in non-USE schools, while 40.5% boys and 36.3% girls were rated proficient in USE schools.

3.6.3 Achievement of S 2 Students in English Language by School Ownership and USE status

This section describes the achievement of students in English Language by school ownership and USE status.

Table 3.08 shows the mean scores of students in English Language by school ownership and USE status.

TABLE 3.08: MEAN SCORES (PERCENTAGE) OF STUDENTS IN ENGLISH LANGUAGE BY SCHOOL OWNERSHIP AND USE STATUS

SCHOOL OWNERSHIP AND USE STATUS	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Government USE	45.6	0.67	44.9	0.62	45.3	0.60
Government Non-USE	69.3	2.24	65.7	1.81	68.0	2.11
Private USE[α]	42.5	1.08	41.4	1.10	42.0	1.00
Private Non-USE	56.2	1.17	57.1	1.23	56.7	1.11

[α]Commonly referred to as PPP: public-private partnership.

Students from government non-USE schools obtained a higher mean of 68.0% followed by those from the private non-USE schools with a mean of 56.7%. On the other hand, the mean scores of students from both government USE and private USE schools were 45.3% and 42.0%, respectively. The government non-USE schools obtained a significantly higher mean score than the private non-USE. However, the government USE and private USE mean scores were not significantly different. There were significant gender differences in mean scores of students in government non-USE schools.

Figure 3.07 shows the proportion of S 2 students rated proficient in English Language by school ownership and USE status.

FIGURE 3.07: PERCENTAGE OF STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE BY SCHOOL OWNERSHIP, USE STATUS AND GENDER

| | GOVERNMENT | | PRIVATE | |
	USE	Non-USE	USE	Non-USE
■ BOYS	41.6	93.0	35.2	68.8
■ GIRLS	37.8	86.9	30.2	70.3
■ ALL	39.9	90.7	32.8	69.6
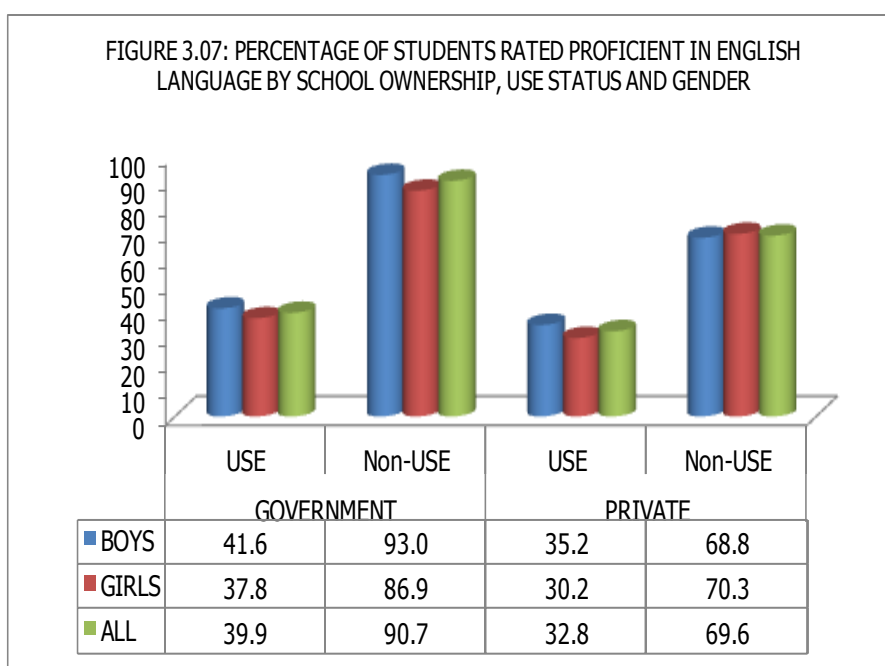
A bigger proportion of 90.7% of the students in government non-USE schools were rated proficient followed by 69.6% in the private non-USE schools. Fewer students in the government USE and private USE 39.9% and 32.8%, respectively, reached the same levels. There were significant gender differences in the performance of students in government USE and non-USE schools and Private USE schools.

3.7 ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE BY SCHOOL PROGRAM

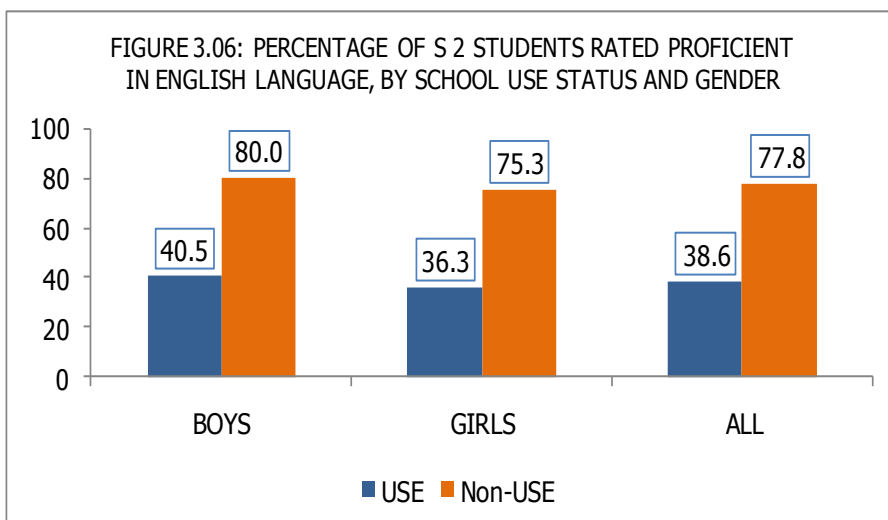This section describes the achievement of students in English Language by school program. Table 3.09 shows the mean scores of students in English Language by school program and gender.

MEAN SCORES (PERCENTAGE) OF STUDENTS IN ENGLISH LANGUAGE BY SCHOOL PROGRAM AND GENDER

SCHOOL PROGRAM	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Single-session	50.2	1.08	48.6	0.73	49.5	0.81
Double-session	45.3	1.05	46.5	1.19	45.8	1.08

The mean scores of students in single-session and double session schools 49.5% and 45.8%, respectively, did not vary significantly. Similarly, there were no significant gender differences in mean scores of students in either category of school program.

Figure 3.08 shows the percentage of students rated proficient in English Language by school program and gender.

FIGURE 3.08: PERCENTAGE OF STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE, BY SCHOOL PROGRAM AND GENDER
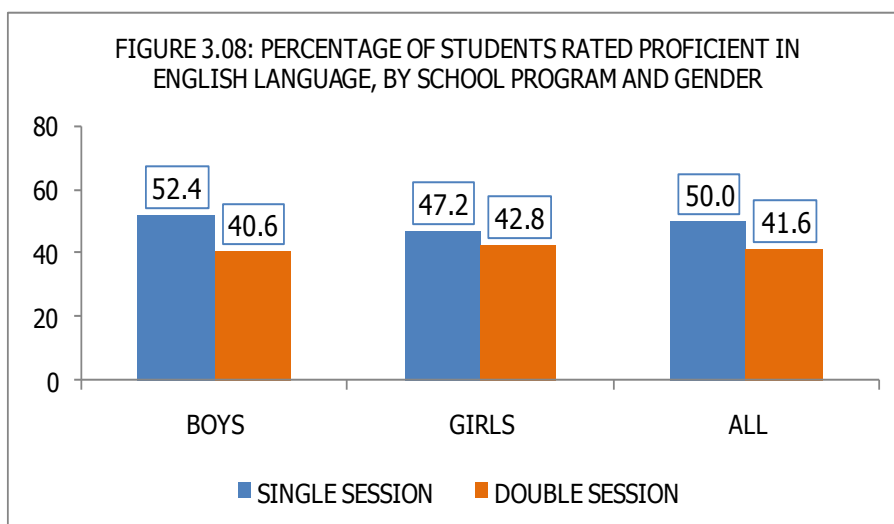
A half of the students in single-session schools were rated proficient compared to 41.6% of those in double-session schools. Significantly more boys (52.4%) than girls (47.2%) were rated proficient in single-session schools.

3.8   ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE BY SCHOOL LOCATION

In this section, a description of the achievement of S 2 students in English Language by school location is presented.

Table 3.10 shows the mean scores of S 2 students in English Language by school location and gender.

MEAN SCORES (PERCENTAGE) OF S 2 STUDENTS IN ENGLISH LANGUAGE BY SCHOOL LOCATION AND GENDER.

SCHOOL LOCATION	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
URBAN	54.8	1.66	52.5	0.96	53.8	1.22
RURAL	45.2	0.69	45.5	0.77	45.3	0.65

Students from the urban schools scored a mean of 53.8% while those from the rural schools obtained a mean of 45.3%. The difference in mean scores for all students in urban and rural schools was significant 53.8% and 45.3%. Much as the gender difference in mean scores for students in urban and rural schools was not significant, the difference was narrower for the rural than the urban students.

Figure 3.09 shows the percentages of students rated proficient in English Language by school location and gender.

FIGURE 3.09: PERCENTAGE OF STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE, BY SCHOOL LOCATION AND GENDER
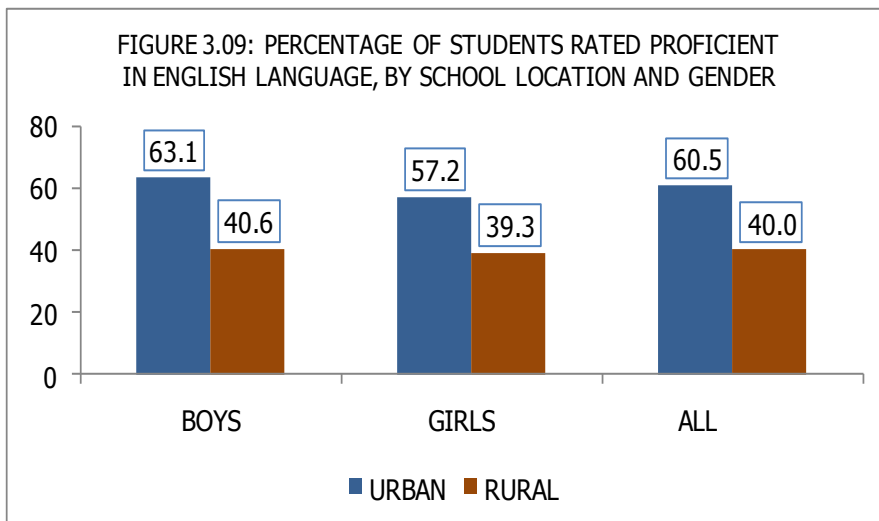
Nearly two-thirds of students (60.5%) in the urban schools were rated proficient in English Language and only 40% in the rural schools. There were gender differences in the performance of boys and girls in the urban schools.

3.9   ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE BY ZONE

The results of S 2 students' achievement in English Language are presented in this section. The mean scores of students in English Language by zone and gender are shown in Table 3.11.

TABLE 3.11:   MEAN SCORES (PERCENTAGE) OF S 2 BOYS AND GIRLS IN ENGLISH LANGUAGE BY ZONE & GENDER

REGION	ZONE	BOYS		GIRLS		ALL	
		Mean	S.E	Mean	S.E	Mean	S.E
Central	Central I	52.9	2.86	53.8	1.71	53.3	2.00
	Central II	44.8	1.85	44.9	2.17	44.8	1.95
	Central III	44.5	1.32	43.7	2.80	44.1	1.72
East	Far East	50.7	3.48	47.7	1.89	49.6	2.43
	Mid East I	43.2	2.04	44.5	2.16	43.8	1.98
	Mid East II	42.2	2.73	41.8	1.46	42.0	1.90
	Near East	42.8	1.37	42.7	2.16	42.7	1.42
Kampala	Kampala	63.8	4.27	64.0	2.10	63.9	2.96
North	Mid North I	50.6	1.76	49.1	2.24	50.1	1.81
	Mid North II	46.1	1.82	47.2	2.78	46.4	2.00
	North East	49.2	1.17	52.2	3.08	50.7	1.68
	West Nile	47.6	2.23	44.8	1.96	46.6	1.95
West	Far West	49.5	2.49	47.4	2.19	48.4	2.14
	Mid West	44.8	1.46	44.0	1.60	44.4	1.44
	North West	44.4	0.98	43.3	1.77	43.9	1.19
	South West	58.4	3.63	50.0	1.63	54.5	2.42
Uganda		49.2	0.89	48.2	0.60	48.8	0.66

Kampala obtained the highest mean score of 64%. Overall only five zones including South West, Central I, North East, Mid North I and Kampala had mean scores above 50%. The rest of the zones obtained mean scores less than 50%, the lowest being 42.7% and 42% for the zones of Near East and Mid East II, respectively. There were no significant gender differences in mean scores for students in most of the zones except South West with significantly more boys than girls rated proficient.

Table 3.12 shows the percentage of S 2 students reaching the defined proficiency level by zone and gender.

TABLE 3.12:   PERCENTAGE OF S 2 BOYS AND GIRLS REACHING THE
               DESIRED LEVEL OF PROFICIENCY IN ENGLISH LANGUAGE
               BY ZONE AND GENDER.

REGION	ZONE	BOYS	GIRLS	ALL
Central	Central I	59.4	60.8	60.1
	Central II	42.0	38.2	40.1
	Central III	41.2	34.9	37.9
East	Far East	54.5	45.8	51.2
	Mid East I	34.8	39.1	36.8
	Mid East II	31.2	27.8	29.9
	Near East	34.4	31.6	33.1
Kampala	Kampala	86.6	84.6	85.6
North	Mid North I	54.4	49.7	52.7
	Mid North II	41.6	45.5	42.9
	North East	53.3	59.5	56.4
	West Nile	47.7	42.2	45.6
West	Far West	48.8	41.5	45.0
	Mid West	40.8	37.7	39.3
	North West	36.5	33.4	35.2
	South West	68.6	50.0	60.0
Uganda		50.0	46.3	48.3

Only 37.5% of all the zones had more than 50% of the students rated proficient, with Kampala zone achieving the highest percentage of 85.6%. The proportions rated proficient ranged from the highest 85.6% for Kampala to the lowest 29.9% for Mid East II zones. There were significant gender differences in the performance of students in the zones of Central II, Central III, Far East, Mid North I, West Nile, Far West and South West with more boys than girls rated proficient, while the reverse occurred in Mid East I, Mid North II and North East zones.

3.10   ACHIEVEMENT OF S 2 STUDENTS IN ENGLISH LANGUAGE FROM 2008 – 2012

This section describes the performance of S 2 students in English Language in the years 2008 – 2012. The percentages of students rated proficient in English Language 2008 – 2012 is shown in figure 3.10.

FIGURE 3.10: PROPORTION OF STUDENTS RATED PROFICIENT IN ENGLISH LANGUAGE: 2008 - 2012, BY GENDER

	2008	2009	2010	2011	2012
BOYS	81.3	73.5	65.6	65.0	50.0
GIRLS	82.5	78.8	69.4	67.9	46.3
ALL	81.9	76.0	67.5	66.4	48.3

Percentage of students
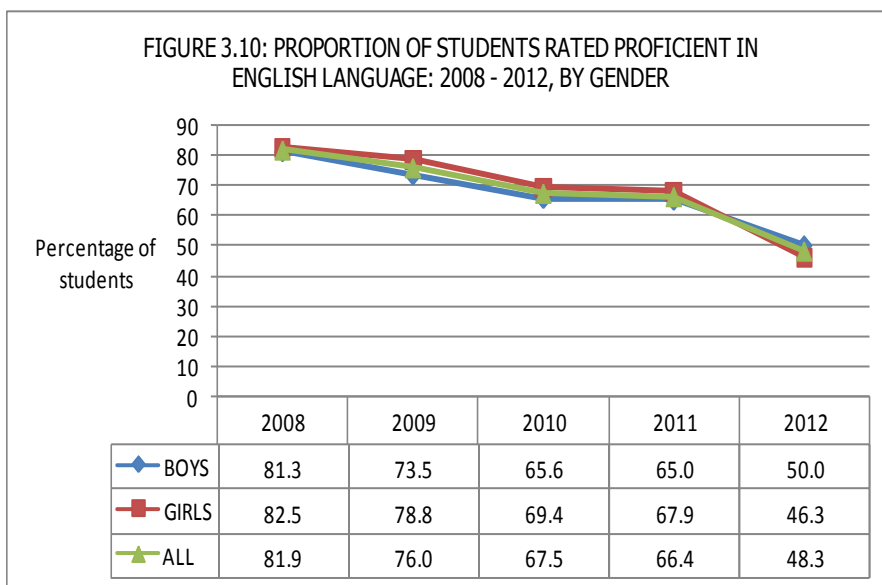
The proportions of students rated proficient has continued to decline over the five years. It dropped from 81.9% in 2008 to 76.0% in 2009 and then to 67.5% in 2010. In 2011 it dropped slightly from the 67.5% in 2010 to 66.4% in 2011; and then significantly to 48.3% in 2012.

3.11 CONCLUSIONS

The students were assessed in three major areas of language that is, reading comprehension, writing and grammar. In reading comprehension, students are doing well in recall type of questions which require mere picking of responses from texts read. Fewer could ably respond to questions in the category of high order abilities – which required critical thinking. Smaller proportions exhibited ability to read texts and form their own opinion or make their own conclusions based on the message in the text.

This is the most common task of reading comprehension given in class BUT teachers, particularly in rural areas do the reading aloud as learners listen. Hence insufficient or no practice given in reading comprehension.

In writing, students performed much better in letter writing compared to other sub-skill areas of advertisement and composition writing. Fewer students could ably write an advertisement with the correct attributes. Similarly, fewer students exhibited ability to write a composition of various styles.

In grammar, students could ably use most of the grammatical aspects assessed. However, they do this mostly when the assessment of such aspects is done in isolation from the other aspects of language. When it comes to more complex use of grammar in written texts, most students find it difficult.

CHAPTER 4

ACHIEVEMENT OF S 2 STUDENTS IN MATHEMATICS

4.1   INTRODUCTION

The achievement of S 2 students in Mathematics is presented in this chapter.   The overall mean score and percentages of students at the "Basic" level of proficiency and above are presented first, followed by the proportions of students rated proficient in the different topical areas and competencies.   The mean scores and percentages of students attaining the desired proficiency level are given by gender, age, school ownership and school USE status, program, location and zone.

The competencies assessed in the test are highlighted by proficiency level, in section 4.2.

4.2   DESCRIPTION OF THE COMPETENCIES BY PROFICIENCY LEVELS

The description of the competencies assessed is given below:

NOTE:

A student at any proficiency level is assumed to have mastered all the competencies specified at his/her level below:

BASIC LEVEL	ADEQUATE LEVEL	ADVANCED LEVEL
A student is able to:	A student is able to:	A student is able to:
• List elements of members of a set.	• Describe a given set.	• Apply the knowledge of sets in daily life.
• State the type of mapping: Many to many Many to one etc	• Complete a papygram.	• Apply the concepts of LCM in daily life.
• Perform the four basic operations on whole numbers.	• Round off a number to a specified number of decimal places.	• Interpret distance-time graphs.
• List multiples and factors of numbers.	• Find the HCF	• Compute discount.
• Plot a point on the Cartesian plane.	• Complete a number sequence.	• Construct a triangle whose dimensions are given.
• State the relationship between object size and image size on a mirror.	• Perform the four basic operations on numbers.	• Determine the image of a point under reflection in a mirror.

BASIC LEVEL	ADEQUATE LEVEL	ADVANCED LEVEL
A student is able to:	A student is able to:	A student is able to:
• Compute the range, median and mean of ungrouped data. • State the relationship between distance, speed and time during motion. • State the adjacent side to a given angle.	• Draw a distance-time graph. • Carry out currency conversions. • Find the volume of a cuboid. • Obtain values of given functions. • Draw circles accurately. • Draw graphs of linear functions. • Solve problems involving money. • Find the sum of series. • Write Mathematical statements in inequality form.	• Interpret frequency tables and pictograms. •

NOTE: *A student is rated proficient if he/she has reached 'Advanced' or 'Adequate" level of proficiency.*

4.3 OVERALL ACHIEVEMENT LEVEL OF S 2 STUDENTS IN MATHEMATICS

This section presents the overall level of achievement of S 2 students in Mathematics. The overall mean score was 40.2% with a standard error (S.E) of 0.61. The mean scores of boys and girls were 43.2% (S.E: 0.85) and 36.7% (S.E: 0.45), respectively. This implies that the boys did significantly better than the girls.

Table 4.01 shows the percentage of students reaching the desired proficiency levels in Mathematics.

*TABLE 4.01: PERCENTAGE OF STUDENTS REACHING VARIOUS LEVELS OF PROFICIENCY IN MATHEMATICS, BY GENDER.*

PROFICIENCY LEVELS	BOYS	GIRLS	ALL
Advanced	3.9	0.9	2.6
Adequate	46.9	33.4	40.7
Basic	49.2	65.7	56.7

Only 2.6% of students were rated "Advanced". These were the students who demonstrated above average performance in Mathematics. They did not only have an in-depth understanding of the Mathematics concepts and skills expected of them at their level, but also ably applied these skills in real life situations.

The second category of students, rated "Adequate", comprised 40.7%. This group of students are those who demonstrated understanding and satisfactory display of the Mathematics skills at this level. The last category of students, rated "Basic" constituted 56.7%. This group of students demonstrated little understanding and minimal display of the Mathematics concepts and skills.

Figure 4.01 shows the percentage of students rated proficient in Mathematics by gender.

FIGURE 4.01: PERCENTAGE OF STUDENTS RATED PROFICIENT IN MATHEMATICS, BY GENDER

	Value
BOYS	50.8
GIRLS	34.3
ALL	43.3
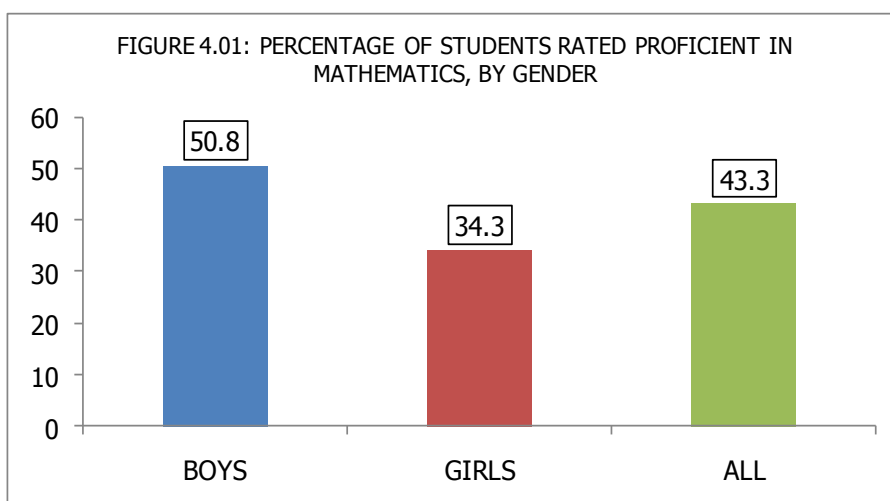
Nearly 1 in 2 (43.3%) students attained the desired proficiency level. The respective proportions of boys and girls rated proficient were 50.8% and 34.3%.   This indicates that there was a significant difference in the proportion of boys and girls attaining the desired rating, with more boys rated proficient.

4.4   ACHIEVEMENT OF STUDENTS IN MATHEMATICS BY TOPICAL AREAS

This section describes the achievement of students in the main topical areas of Mathematics. Figure 4.02 shows the percentage of students rated proficient in different topics of Mathematics by gender.

FIGURE 4.02: PERCENTAGE OF STUDENTS RATED PROFICIENT IN TOPICAL AREAS OF MATHEMATICS BY GENDER

	Measures	Numerical Concepts	Cartesian Coordinates	Statistics	Geometry	Transformations & Functions	Set Theory
BOYS	73.4	63.6	39.8	36.8	34.8	25.5	8.0
GIRLS	57.5	51.8	27.5	24.4	22.9	16.6	5.4
ALL	66.1	58.2	34.2	31.1	29.3	21.4	6.8
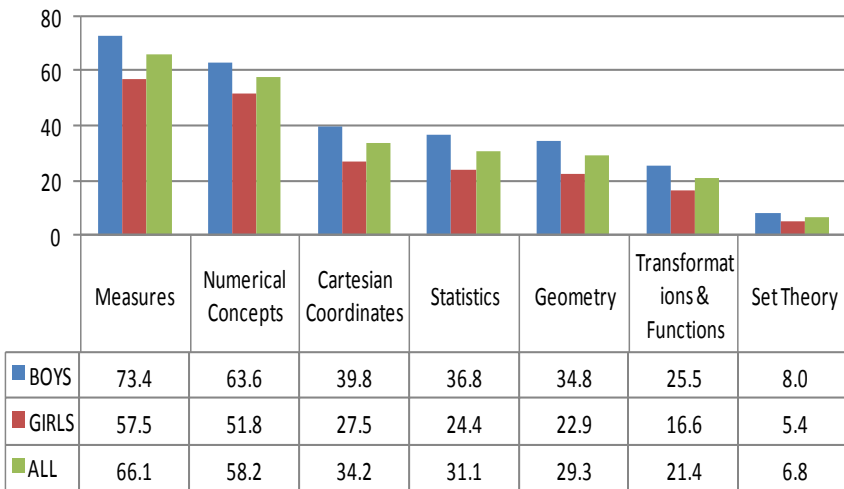
Over a half of the students attained the desired proficiency levels in topics of 'Measures' and 'Numerical concepts'. Best mastery of the concepts and skills was exhibited in 'Measures' where 2 in 3 were rated proficient. About 1 in every 3 students reached the desired rating in the topics of 'Cartesian coordinates', 'Geometry' and 'Statistics'.

However, the least proportions of students demonstrated mastery of the Mathematics concepts and skills in the topics of 'Transformations" and 'Set-theory'.

In all the topical areas, there was a significant difference between the proportions of boys and girls rated proficient, with more boys than girls attaining the desired rating.

4.5 ACHIEVEMENT OF STUDENTS IN SELECTED COMPETENCIES OF MATHEMATICS

This section outlines the performance of students in Mathematics competencies. The flag on each competency was assigned the colour; 'Green', 'Yellow', or 'Red' where: 'Green' represents a competency in which at least three quarters of the students were rated proficient 'Yellow' represents competencies in which at least a half, but less than three quarters of the students reached the desired rating.

Lastly, 'Red' shows the competencies in which less than a half of the students attained the desired rating. Tables 4.02 – 4.08 exhibit the percentages of students reaching the desired rating in the competencies of Mathematics grouped in topical areas.

TABLE 4.02: PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'MEASURES'.

COMPETENCIES	BOYS	GIRLS	ALL
Finds the volume of a cube	⚑ 88	⚑ 87	⚑ 87
Computing the perimeter of a triangle.	⚑ 78	⚑ 72	⚑ 75
Solving problems involving shopping.	⚑ 71	⚑ 61	⚑ 67
Computing the time to carry out an activity	⚑ 62	⚑ 45	⚑ 54
Carrying out currency conversions.	⚑ 58	⚑ 42	⚑ 51
Solving a discount problem	⚑ 32	⚑ 19	⚑ 26
Computing the curved surface area of a cylinder.	⚑ 22	⚑ 16	⚑ 19

Overall 87.3% of the students had acquired a solid mastery of the computation of the volume of a cube compared to 3 in 4 students who had an in-depth understanding of the concept of the perimeter of a three-sided polygon.

Whereas two-thirds of the students (66.6%) could solve problems involving shopping, about a half of them could either carry out currency conversions or compute the time it takes to complete an activity. About a quarter of the students (25.9%) had knowledge of how to solve a 'discount' problem. The least proportion of students (19.3%) are those who were able to find the surface area of a cylinder whose dimensions and formula were stated.

In all the competencies of 'Measures', there was a significant difference in the proportions of boys and girls reaching the desired proficiency levels, with more boys rated proficient.

TABLE 4.03:   _PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'NUMERICAL CONCEPTS'_

COMPETENCIES	BOYS	GIRLS	ALL
Completes a sequence	93.3	91.8	92.6
Subtracts a 3-digit number from a 3-digit number	92.4	90.4	91.5
Finding the HCF of numbers	78.3	73.9	76.3
Expressing a percentage as a ratio.	65.7	62.7	63.3
Converting a decimal to a fraction and vice versa	55.6	45.0	50.8
Finding multiples and factors of numbers.	45.0	37.0	41.4
Correcting a number to a specified decimal place.	13.8	9.9	12.0
Using the concept of LCM in novel situations.	15.2	7.0	11.4
Finds the sum of a series	2.6	2.1	2.4

Nearly all the students could complete a sequence as well as subtract a 3-digit number from a 3-digit number. About 3 in 4 (76.3%) students could compute the HCF of two numbers compared to 1 in 2 (50.8%) who could convert a fraction to a decimal. Very few students (approximately 10%) were able to correct a number to a specified decimal place as well as apply the concept of LCM in novel situations.

A small proportion of students (2.4%) had the knowledge and skill in finding the sum of a series.

The difference in proportions of boys and girls attaining the desired rating was significant in most competencies, with more boys rated proficient.

TABLE 4.04:   _PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'CARTESIAN COORDINATES AND GRAPHS'_

COMPETENCIES	BOYS	GIRLS	ALL
Drawing a distance-time graph.	53.0	42.2	48.0
Plotting points on a Cartesian plane.	51.5	41.8	47.0
Making inequality statements using inequality symbols.	44.2	32.2	38.7
Stating relationship between basic terms of motion	36.0	30.0	33.4
Interpreting simple speed-time graphs.	26.0	14.3	20.7

Less than a half of the students reached the desired rating in each of the competencies of 'Cartesian Coordinates'. However, the highest proportion of students (47.0%) could plot a point on a Cartesian plane as well as draw a distance-time graph. Worst performance was exhibited in interpreting simple speed-time graphs where only 20.7% of the students were rated proficient. More boys than girls reached the desired rating in all the competencies of 'Cartesian Coordinates'.

TABLE 4.05: PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'STATISTICS'.

COMPETENCIES	BOYS	GIRLS	ALL
Computing the median for non-grouped data.	64.1	58.8	61.7
Interpreting a pie chart.	47.7	31.9	40.5
Interpreting a frequency table.	36.1	24.1	30.6
Presenting information in a line graph.	8.5	6.8	7.7

Although nearly two-thirds of the students (61.7%) were competent in computing the median for non-grouped data, just about a third of them could interpret a frequency table and only 40.5% had the ability to interpret a pie chart. On the other hand, a mere 7.7% of the students showed competence in drawing of a line graph. There was a significant difference in the proportions of boys and girls rated proficient, with more boys attaining the desired proficiency level.

TABLE 4.06: PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'GEOMETRY'.

COMPETENCIES	BOYS	GIRLS	ALL
Drawing a circle accurately.	83.9	84.3	84.1
Measuring lengths accurately.	85.5	81.2	83.6
Measuring angles accurately.	49.8	33.0	42.1
Constructing a triangle.	30.8	22.0	26.8
Finding the number of sides of a regular polygon.	18.1	13.7	16.1
Identifying a side adjacent to a given angle	6.9	6.3	6.6

Whereas over three-quarters of the students (≈ 84.0%) were competent in two of the selected competencies, drawing a circle accurately and measuring lengths accurately, the proportions of those reaching the desired rating in the other competencies was low. For example only 16.1% of the students could find the number of sides of a regular polygon and a mere

6.6% could identify a side of a triangle adjacent to one of its angles. There were slightly more girls than boys rated proficient in drawing of circles accurately. However, the proportions of boys attaining the desired proficiency in the other competencies of 'Geometry' were significantly higher than those of girls.

TABLE 4.07:   PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'TRANSFORMATIONS AND FUNCTIONS'.

COMPETENCIES	BOYS	GIRLS	ALL
Working out values of a linear function.	66.5	60.2	63.6
Stating the image size	47.4	37.1	42.7
Drawing a graph of linear functions.	14.5	8.3	11.6
Determining the images of points under a reflection.	11.0	7.5	9.4

Although 63.6% of the students could work out values of a linear function, relatively lower proportions of the students were competent in drawing graphs of linear functions as well as determining the images of points under a reflection.

There was a significant difference between the proportions of boys and girls rated proficient in the competencies of 'Transformations & Functions'. More boys attained the desired rating.

TABLE 4.08:   PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'SET – THEORY'.

COMPETENCIES	BOYS	GIRLS	ALL
Representing a relationship using a Venn diagram to solve a problem.	55.5	50.0	53.0
Representing a relationship using set symbols.	22.3	17.7	20.2
Identifying a type of mapping.	8.6	8.5	8.6
Describing a set	6.5	5.0	5.8
Completing a diagram showing a relation.	4.4	3.2	3.9

With exception of 'representing a relationship using a Venn diagram to solve a problem' where at least a half of the students (53.0%) reached the desired rating, the proportions of students rated proficient in other competencies were low. For example, only 3.9% of students could complete a diagram showing a relation. More boys than girls acquired the desired rating.

4.6   ACHIEVEMENT OF S 2 STUDENTS IN MATHEMATICS BY AGE

In this section, the performance of students in Mathematics by age is described. Table 4.09 shows the mean scores of students in Mathematics by students' age and gender.

TABLE 4.09   MEAN SCORES (PERCENTAGE) OF S.2 STUDENTS IN MATHEMATICS BY AGE AND GENDER.

AGE (years)	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
11 - 13	54.8	4.8	41.8	2.32	47.1	3.16
14	49.4	1.98	41.6	1.04	44.9	1.33
15	46.5	1.32	37.1	0.49	41.4	0.78
16	42.8	0.64	35.2	0.38	39.3	0.45
17	40.1	0.44	33.0	0.53	37.7	0.38
18	37.5	0.61	32.2	0.82	36.3	0.53
19^+	37.3	0.88	31.6	1.39	36.5	0.79

The mean scores of students in Mathematics decreased as age increased from 47.1% for the 11 – 13 year-olds to 36.3% for the 18 year-olds; and increased to 36.5% for the 19 year-olds. For the 11 – 13 year olds, the boys obtained a mean score which was 3 points above that of the girls, whereas for the other age groups the difference in the mean scores obtained by the boys was higher than the girls by 5 or more points. Figure 4.03 shows the percentage of students rated proficient in Mathematics by age and gender.

FIGURE 4.03: PERCENTAGE OF STUDENTS RATED PROFICIENT IN MATHEMATICS, BY AGE AND GENDER

	11-13	14	15	16	17	18	18+
BOYS	70.8	64.3	58.2	50.8	44.0	37.7	37.0
GIRLS	46.8	47.6	35.6	30.2	24.7	18.6	25.2
ALL	56.7	54.6	45.8	41.1	37.6	33.5	35.3
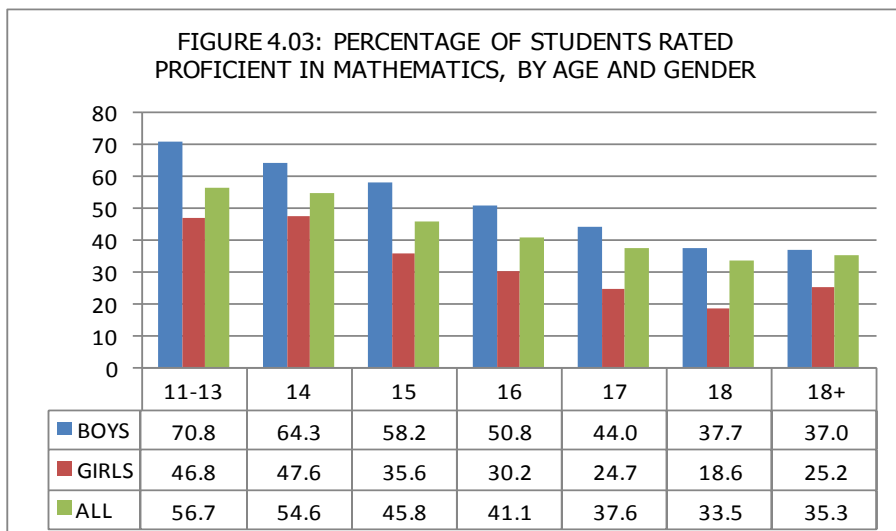
As the age of students increased from 11 years to 19$^+$ years, the proportions of students rated proficient in Mathematics decreased from 56.7% at 11 years to 35.3% at 18$^+$years. At each age, there was a significant gender difference in the proportions of students attaining the desired rating. More boys attained the desired rating.

4.7 ACHIEVEMENT OF S 2 STUDENTS IN MATHEMATICS BY SCHOOL OWNERSHIP AND USE STATUS

A description of students' achievement in Mathematics by school ownership and USE status is done separately in this section. After which a presentation of the achievement of students by school ownership and USE status combined is made.

4.7.1 Achievement of S 2 Students in Mathematics by School Ownership

In this section, a description of the performance of students in Mathematics by school ownership is made. Table 4.10 shows the mean scores of students in Mathematics by school ownership and gender.

TABLE 4.10:   MEAN SCORES (PERCENTAGE) OF STUDENTS IN MATHEMATICS BY SCHOOL OWNERSHIP AND GENDER

OWNERSHIP	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Government	43.8	1.12	36.9	0.59	40.8	0.83
Private	41.4	0.70	36.2	0.73	38.7	0.64

The mean score (40.8%) of students from government schools was higher than that of students from private schools (38.7%). The difference in the mean scores was not significant. However, boys from both government and private schools obtained significantly higher mean scores than the girls. Figure 4.04 shows the percentage of S 2 students rated proficient in Mathematics by school ownership.

FIGURE 4.04: PERCENTAGE OF STUDENTS RATED PROFICIENT IN MATHEMATICS, BY SCHOOL OWNERSHIP AND GENDER
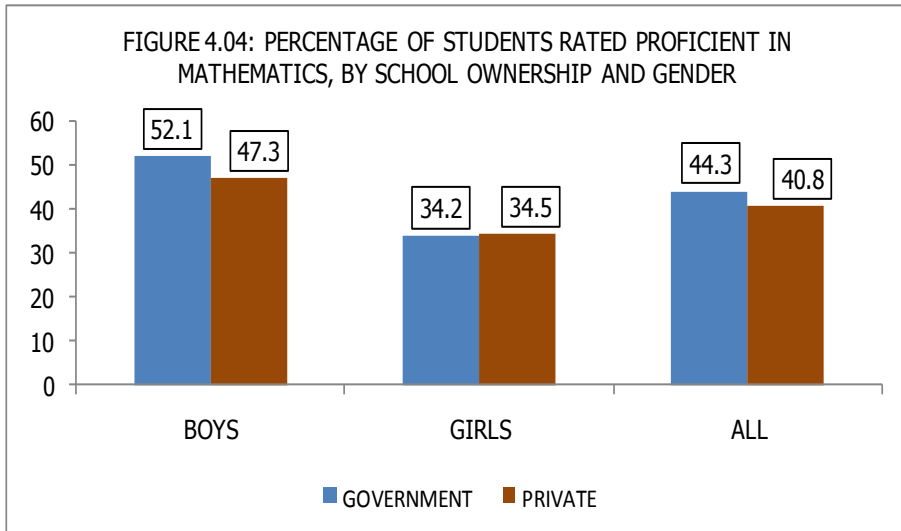
There was no significant difference in the proportion of students rated proficient in the government and private schools; although the percentage of the students from the government schools was slightly higher. However, more boys than girls attained the desired rating in either type of school ownership.

4.7.2 Achievement of S 2 Students in Mathematics by School USE Status.

In this section, a presentation of the performance of students in Mathematics by USE status is made. Table 4.11 shows the mean scores of students in Mathematics by school USE status and gender.

TABLE 4.11: MEAN SCORES (PERCENTAGE) OF STUDENTS IN MATHEMATICS BY SCHOOL USE STATUS AND GENDER

SCHOOL USE STATUS	BOYS		GIRLS		ALL	
	Mean	SE	Mean	SE	Mean	SE
USE	40.4	0.45	34.6	0.37	37.8	0.38
Non-USE	52.0	2.43	42.7	1.14	47.6	1.80

Students from non-USE schools obtained a mean score of 47.6% which is significantly higher than 37.8% of the students from USE schools. The boys in in both USE and non-USE schools performed better than the girls.

Figure 4.05 shows the percentage of S 2 students rated proficient in Mathematics by school USE status.

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FIGURE 4.05: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN MATHEMATICS, BY SCHOOL USE STATUS AND GENDER
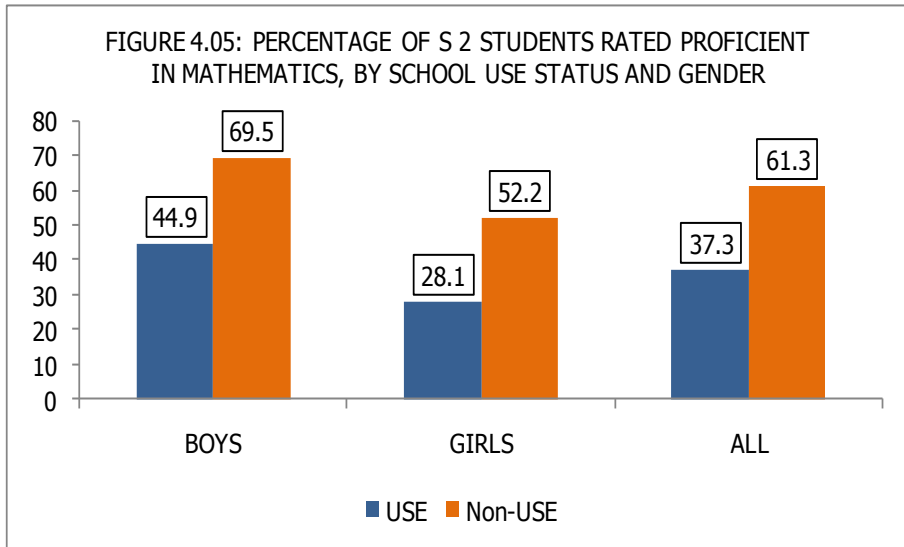
The respective proportions of students reaching the desired level of proficiency from the non-USE and USE schools were 61.3% and 37.3%. The difference in the proportions was significant. Further, more boys than girls were rated proficient in either school USE status.

4.7.3 Achievement of S 2 Students in Mathematics by School Ownership, USE Status and Gender.

In this section, a presentation of the achievement of S 2 students by school ownership, USE status and gender is made. Table 4.12 shows the mean scores of students by school ownership, USE status and gender.

TABLE 4.12:   MEAN SCORES (PERCENTAGE) OF STUDENTS BY SCHOOL OWNERSHIP, USE STATUS AND GENDER

SCHOOL OWNERSHIP AND USE STATUS	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Government USE	40.8	0.53	35.3	0.42	38.4	0.44
Government non-USE	60.5	2.98	49.5	2.00	56.4	2.77
Private USE[α]	38.3	0.74	31.8	0.688	35.2	0.67
Private Non-USE	44.7	1.10	39.7	0.97	42.0	0.93

[α] Commonly referred to as PPP –public-private partnership.

Students from the government non-USE schools obtained a mean score of 56.4% which was significantly higher than the mean score of 38.4% by the students from government USE schools.

The mean scores of students from private non-USE and private USE were 42.0% and 35.2%, recpectively. The difference in the two mean scores is significant. However, boys performed better than the girls in all the types of school ownership and USE status.

Boys and girls from the government non-USE schools obtained the highest mean score, followed by students from the private non-USE schools. The lowest mean score was obtained by students from private USE schools.
Figure 4.06 shows the percentages of students rated proficient in Mathematics by school ownership, USE status and gender.

FIGURE 4.06: PERCENTAGE OF STUDENTS RATED PROFICIENT IN MATHEMATICS BY SCHOOL USE STATUS AND OWNERSHIP

| | GOVERNMENT | | PRIVATE | |
	USE	Non-use	USE	Non-USE
BOYS	46.1	74.7	39.3	55.6
GIRLS	29.8	52.4	20.9	45.4
ALL	38.8	66.4	30.5	50.1
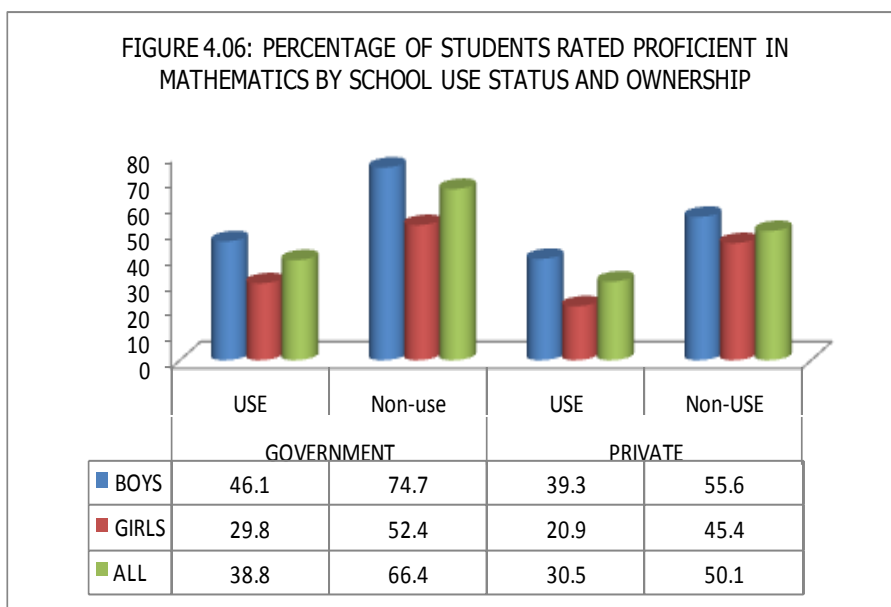
Whereas about two thirds of students from the government non-USE were rated proficient, only 38.8% of the students from government USE schools obtained a similar rating.

About half of the students (50.1%) from private non-USE schools reached the desired proficiency level compared to only 30.5% of the students from private USE schools.

The proportions of boys rated proficient in all the types of school ownership and USE status were significantly higher than those of the girls in the same category of school ownership and USE status.

Further, the highest proportion of students (66.4%) with the desired rating came from government non-USE schools, followed by those from the private non-USE schools.

4.8 ACHIEVEMENT OF S 2 STUDENTS IN MATHEMATICS BY SCHOOL PROGRAM

This section describes the achievement of students in Mathematics by school program. Table 4.13 shows the mean scores of S 2 students in Mathematics by school program.

TABLE 4.13: MEAN SCORES (PERCENTAGE) OF S 2 STUDENTS IN MATHEMATICS BY SCHOOL PROGRAM

SCHOOL PROGRAM	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Single-session	43.9	1.04	37.2	0.53	40.8	0.74
Double-session	40.4	0.88	34.8	0.82	37.9	0.79

Students from single-session and double-session schools obtained mean scores of 40.8% and 37.9%, respectively. The difference in the mean scores was insignificant. However, the boys from either school program obtained significantly higher mean scores than the mean scores of girls from similar school programs.

Figure 4.07 shows the proportions of boys and girls reaching the desired proficiency level by school program.
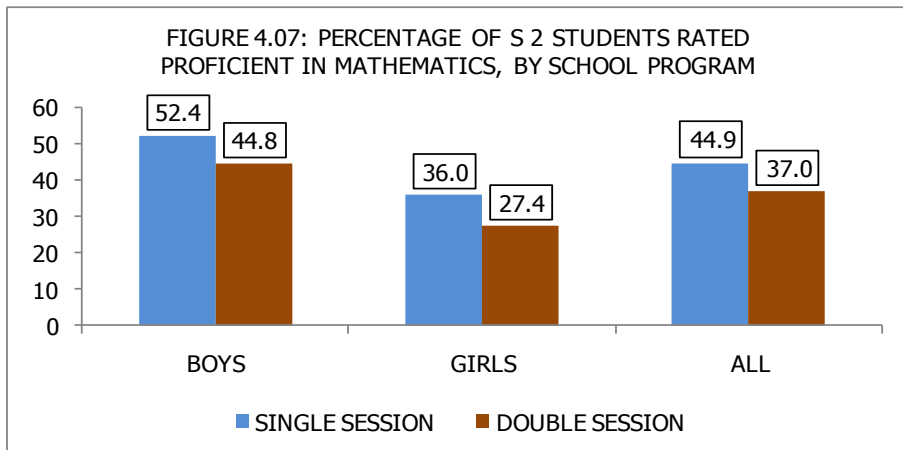
FIGURE 4.07: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN MATHEMATICS, BY SCHOOL PROGRAM

There was a significant difference in the proportions of students rated proficient in Mathematics by school program. More students from single session schools attained the desired rating as compared to those from double session schools.

Further, the proportion of boys rated proficient from either school program was significantly higher than that of girls from a similar school program.

4.9   ACHIEVEMENT OF S 2 STUDENTS BY SCHOOL LOCATION

In this section, a description of the achievement of S 2 students in Mathematics by school location is given.   Table 4.14 shows the mean scores of students in Mathematics by school location and gender.

TABLE 4:14:   MEAN SCORES (PERCENTAGE) OF S 2 STUDENTS IN MATHEMATICS BY SCHOOL LOCATION AND GENDER.

SCHOOL LOCATION	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
URBAN	47.0	1.76	38.2	0.76	43.1	1.30
RURAL	40.5	0.55	35.7	0.57	38.2	0.49

The respective mean scores of students from urban and rural schools were 43.1% and 38.2%.   The difference in the mean scores was significant. Further, the boys obtained significantly higher mean scores than the girls in either school location.

FIGURE 4.08: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN MATHEMATICS, BY SCHOOL LOCATION AND GENDER
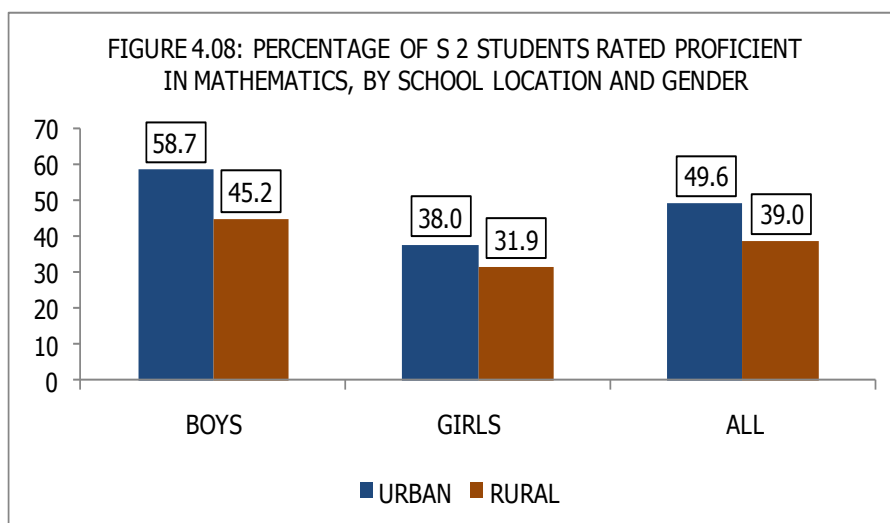
Whereas nearly a half of the students from urban schools attained the desired rating, only 39.0% of their colleagues from rural schools reached a similar rating.

More boys than girls were rated proficient from either school location.

4.10: ACHIEVEMENT OF S 2 STUDENTS IN MATHEMATICS BY ZONE.

This section presents the achievement of students in Mathematics by zone. Table 4.15 shows the mean scores of S 2 boys and girls in Mathematics by zone and gender.

TABLE 4.15: MEAN SCORES (PERCENTAGE) OF S 2 STUDENTS IN MATHEMATICS BY ZONE

REGION	ZONE	BOYS		GIRLS		ALL	
		Mean	S.E	Mean	S.E	Mean	S.E
Central	Central I	43.9	2.57	37.5	1.27	40.7	1.71
	Central II	38.0	1.73	34.0	1.32	36.0	1.49
	Central III	40.5	1.59	35.4	1.43	37.8	1.25
East	Far East	40.6	3.07	32.5	1.36	37.6	2.19
	Mid East I	36.0	1.55	30.7	1.38	33.5	1.42
	Mid East II	38.9	2.41	30.5	1.14	35.5	1.80
	Near East	39.2	0.98	34.3	1.41	36.9	0.95
Kampala	Kampala	50.8	6.96	43.1	2.31	47.2	4.78
North	Mid North I	46.9	1.65	37.5	1.24	43.5	1.64
	Mid North II	42.8	1.54	34.3	0.90	40.1	1.32
	North East	42.3	2.19	34.9	2.37	38.6	1.27
	West Nile	42.9	1.53	34.8	1.01	39.8	1.28
West	Far West	48.1	1.89	40.9	1.61	44.4	1.57
	Mid West	40.3	1.64	34.7	0.93	37.7	1.26
	North West	38.1	1.01	33.8	0.99	36.3	0.92
	South West	54.5	3.27	44.9	1.49	50.0	2.20
Uganda		43.2	0.85	36.7	0.45	40.2	0.61

Students from South West obtained the highest mean score (50.0%) followed by those from Kampala who obtained a mean score of 47.2%. The students from the other zones obtained mean scores ranging between 33.0% and 45%. The mean scores of the boys were significantly higher than those of the girls in all the zones.

Table 4.16 shows the percentage of S 2 boys and girls reaching the desired level of proficiency in Mathematics by zone and gender.

TABLE 4.16:   PERCENTAGE OF S 2 BOYS AND GIRLS RATED PROFICIENT IN MATHEMATICS BY ZONE AND GENDER.

REGION	ZONE	BOYS	GIRLS	ALL
Central	Central I	53.2	37.7	45.5
	Central II	40.8	26.0	33.2
	Central III	43.2	31.0	36.8
East	Far East	44.0	22.3	35.7
	Mid East I	32.2	18.1	25.7
	Mid East II	38.9	17.1	30.0
	Near East	39.4	28.0	34.1
Kampala	Kampala	66.4	49.8	58.6
North	Mid North I	63.9	37.4	54.2
	Mid North II	53.1	29.1	45.5
	North East	48.9	31.3	40.1
	West Nile	52.0	27.7	42.9
West	Far West	65.9	43.2	54.2
	Mid West	44.4	31.0	38.1
	North West	39.0	24.7	33.1
	South West	77.3	57.9	68.3
Uganda		50.8	34.3	43.3

Just like with the mean scores, South West had the highest proportion of students (68.3%) attaining the desired proficiency level, followed by Kampala with 58.6% of the students attaining a similar proficiency level. With the exception of Mid East I the rest of the zones had between 30% - 54.2% of their students rated proficient. Significantly more boys than girls reached the desired proficiency level in all the zones.

4.11: ACHIEVEMENT OF S 2 STUDENTS IN MATHEMATICS FROM 2008 – 2012 BY GENDER

In this section, a description of the achievement of S 2 students in Mathematics over the years 2008 – 2012 is given. Figure 4.09 shows the percentage of S 2 students rated proficient in Mathematics in 2008 – 2012 by gender.

FIGURE 4.09: PERCENTAGE OF STUDENTS RATED PROFICIENT IN MATHEMATICS 2008 - 2012, BY GENDER

	2008	2009	2010	2011	2012
BOYS	74.4	60.8	54.7	44.0	50.8
GIRLS	63.3	56.6	44.7	32.2	34.3
ALL	69.4	58.8	49.7	38.2	43.3
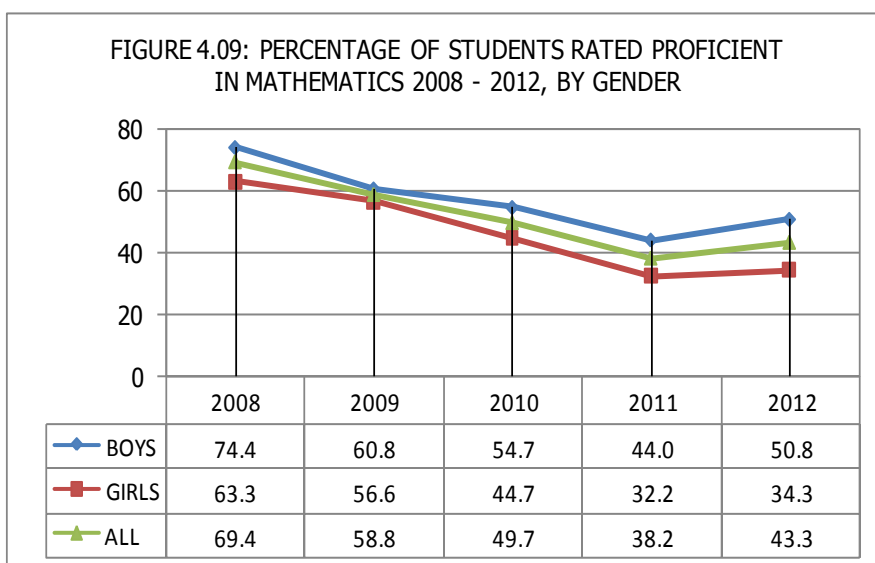
Whereas there was a decrease in the proportions of students rated proficient from 2008 – 2011 at a constant rate of 10%, an increase of 5% was registered in 2012, with significantly more boys than girls rated proficient.

4.12   CONCLUSIONS

S 2 students demonstrated the highest level understanding of Mathematical concepts and skills in 'Measures' where about two thirds of the students were rated proficient.
Although over a half of the students (58.2%) reached the desired proficiency level 'Numerical Concepts', less than a quarter demonstrated competence, in 'Transformations' and 'Set – Theory.

In 'Measures', the majority of the students (87.3%) not only demonstrated the knowledge and skills of computing the volume of a cuboid but also find the perimeter of a three-sided polygon.

In 'Numerical concepts' whereas nearly all the students understood a sequence involving counting in fives, a much smaller fraction could correct a number to a specified decimal place as well as apply the concept of LCM in novel situations.

In 'Cartesian coordinates and Graphs' about 1 in 2 students could plot a point on a cartesian plane. However, less than a quarter of the students could interpret simple speed time graphs.

In 'Statistics', whereas nearly two-thirds could compute the median of non-grouped data, less than 1 in 10 could present information in a line graph.

In 'Geometry', over three quarters of the students drew a circle and measured the length of a given line accurately. However, many of them lacked the concept of computing the number of sides of a regular polygon as well as identifying a side of a triangle adjacent to one of its angles.

In 'Transformations and Functions', a topic in which the students were least competent, about two thirds of the students could only work out values of a linear function but lacked knowledge in most of the other competencies.

Chapter 5

ACHIEVEMENT OF S 2 STUDENTS IN BIOLOGY

5.1   INTRODUCTION

The achievement of S 2 students in Biology is presented in this Chapter. Firstly, the overall mean score and the percentages of students reaching different levels of proficiency are given, followed by the percentages of students rated proficient in the various topical areas and competencies. Lastly, the mean scores and percentages of students rated proficient in the topical areas and competencies of Biology are presented by gender and age, school ownership, USE status, program and location and zone.

The competencies assessed in the test are highlighted by proficiency level in Section 5.2.

5.2   DESCRIPTION OF THE COMPETENCIES BY PROFICIENCY LEVELS

The description of the competencies assessed is given below:

NOTE: A student at any proficiency level is assumed to have mastered all the competencies specified at his/her level and the competencies below:

BASIC	ADEQUATE	ADVANCED
A student is able to:	A student is able to:	A student is able to:
• State the difference between living and non-living things.	• Describe how living things are collected.	• Classify a living thing into a given taxa.
• Name the two types of microscopes.	• Explain the importance of Biology.	• Construct an identification key.
• Define a cell.	• Estimate the number of organisms in a given area.	• Draw and label parts of the external structure of a dicot root.
• Name parts of a flower.	• Calculate the magnification of a specimen.	• Draw and label parts of the external structure of a maize fruit.
• Identify leaf types.	• State the functions of parts of a microscope.	• Draw and label parts of the external features of an insect.
• Identify a modified leaf.	• State functions of muscle cells.	• Explain the steps in a water-cycle.

BASIC	ADEQUATE	ADVANCED
• Label parts of the external features of an insect. • State ways of controlling the spread of mosquitoes. • Outline characteristics of a fertile soil. • State reasons for soil erosion prevention.	• Name the functions of parts of a plant cell. • Describe the photosynthetic tissue in a plant. • Describe the care of a hand lens. • State the functions of a root to a plant. • Label the internal structure of a fruit. • Describe leaf arrangement. • Explain the functions of parts of a flower. • Describe the function of a 'stem tuber' • Describe the life cycle of a mosquito. • Describe the role of fungi in soil formation. • Give reasons for cassava's proper growth in a sandy soil. • State the role of essential elements in a complete culture. • Explain how a named factor affects the quality of soil. • Explain how a named method is used in soil conservation. • Calculate the percentage of air in a soil sample.	

NOTE: *A student is rated proficient if he/she reaches "Advanced" or "Adequate" levels of proficiency.*

5.3   OVERALL ACHIEVEMENT OF S 2 STUDENTS IN BIOLOGY

This section outlines the overall achievement of S 2 students in Biology. The overall mean score was 26.6% with a standard error (S.E) of 0.44. The respective mean scores of the boys and girls were 28.6% (S.E: 0.58) and 24.3% (S.E: 0.33); indicating that the boys performed significantly better than the girls.

Table 5.01 shows the percentage of students reaching the different levels of proficiency in Biology by gender.

TABLE 5.01:   PERCENTAGE OF S 2 STUDENTS REACHING VARIOUS LEVELS OF PROFICIENCY IN BIOLOGY BY GENDER

PROFICIENCY LEVELS	BOYS	GIRLS	ALL
Advanced	00.0	00.0	00.0
Adequate	23.6	10.7	17.7
Basic	76.4	89.3	82.3

No student reached the 'Advanced' category of proficiency implying that none of the students were able to generalize the basic concepts and skills of Biology and demonstrate an awareness of the Biological competencies in real life situation.

The second category of proficiency was 'Adequate' where 17.7% of the students attained the desired rating.   These are the students who demonstrated a perfect understanding and moderate display of the skills in Biology. For example, they could explain why cassava grows properly in a sandy soil as well as describe the life cycle of a named vector.

The last category of students were rated 'Basic', constituting 82.3%. These are students who had partial mastery of knowledge and skills necessary for proficient work. They fell below the marginal academic performance. For instance, they could state the difference between living and non-living things but could not describe the method used to collect living organisms. Further, they could outline the characteristics of a fertile soil but were unable to describe the role of fungi in soil formation.

Figure 5.01 shows the percentage of students rated proficient in Biology by gender.

FIGURE 5.01: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN BIOLOGY, BY GENDER

	BOYS	GIRLS	ALL
	23.6	10.7	17.7
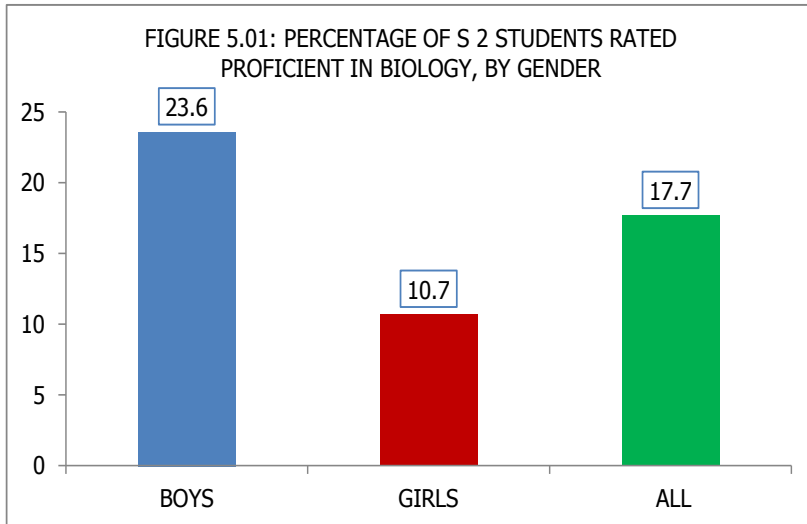
About 2 in 10 (17.7%) students reached the desired proficiency level in Biology. The proportion (23.6%) of boys rated proficient in Biology more than doubles that of the girls (10.7%) who attained a similar rating.

5.4   ACHIEVEMENT OF S 2 STUDENTS IN BIOLOGY BY TOPICAL AREAS

A presentation of the achievement of students in Biology by topical areas is made in this section.

Figure 5.02 shows the percentage of S 2 boys and girls attaining the desired proficiency levels by topical areas.

FIGURE 5.02: PERCENTAGE OF STUDENTS RATED PROFICIENT IN BIOLOGY, BY TOPICAL AREAS

	Insects	Microscopes & Hand Lenses	Diversity of Living things	Soil	Flowering plants
BOYS	72.8	44.3	35.2	22.5	14.0
GIRLS	62.6	31.6	23.0	10.7	6.6
ALL	68.1	38.5	25.6	17.1	10.6
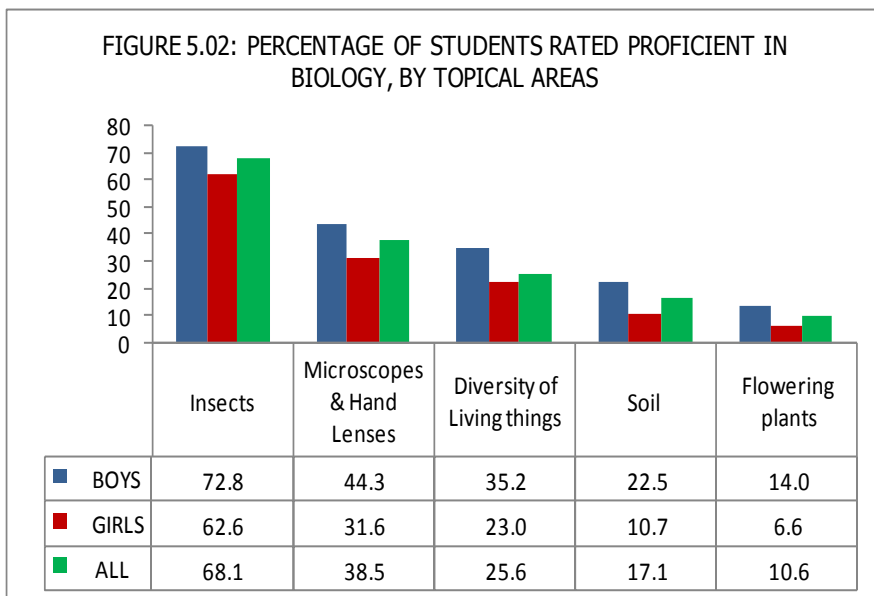
S 2 students exhibited the best performance in the topic of 'Insects' where over two thirds (68.1%) were rated proficient. This was followed by 'Microscopes and Hand lenses' where 2 in 5 demonstrated mastery of the competencies. Worst performance was demonstrated in the topic of Flowering Plants' where only 10.6% of the students reached the desired rating.

There was a significant difference in the proportion of boys and girls attaining the desired proficiency levels, with more boys rated proficient in all the topical areas of Biology.

5.5 ACHIEVEMENT OF S 2 STUDENTS IN THE SELECTED COMPETENCIES OF BIOLOGY

In this section, a description of the achievement of S 2 students in various competencies of Biology is made. The flags against the competencies were assigned the colours: 'Green' 'Yellow' and 'Red' where:

'Green' represents the competencies in which at least three-quarters of the students were rated proficient.

'Yellow' represents the competencies in which at least a half, but less than three-quarters of the students reached the desired proficiency. Lastly, 'Red' represents the competencies in which less than a half of the students attained the desired rating. Tables 5.02 – 5.06 show the percentage of students rated proficient in the competencies of Biology, grouped in topical areas.

TABLE 5.02: PERCENTAGE OF STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF 'EXTERNAL FEATURES, LIFE CYCLES AND ECONOMIC IMPORTANCE OF INSECTS'.

COMPETENCIES	BOYS	GIRLS	ALL
Stating ways by which the spread of mosquitoes can be controlled.	92.1	88.5	90.5
Labelling the external features of a vector.	80.6	74.6	77.9
Drawing & labelling the external features of a vector	78.2	71.5	75.1
Describing the life cycle of a vector.	43.0	34.6	39.2

Nearly 9 in 10 students (90.5%) could state the ways by which the spread of malaria can be controlled. About three quarters of the students (75.1%) were competent not only in drawing but also labeling the external features

of a named vector while a smaller percentage (39.2%) were able to describe the life cycle of a named vector.

TABLE 5.03:   PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF MICROSCOPES AND HAND LENSES

COMPETENCIES	BOYS	GIRLS	ALL
Microscopes			
Stating the functions of parts of a microscope	74.0	64.2	69.7
Computing the magnification of a specimen.	66.6	62.3	64.6
Naming two types of microscopes	42.5	31.7	37.5
Describing the care of hand lenses and microscopes.	24.0	20.2	22.2
Plant and animal cells			
Stating the functions of muscle cells	27.2	24.5	26.0
Stating the functions of parts of a plant cell	18.2	11.6	15.2
Describing the photosynthetic tissue in a plant	8.4	5.4	7.1

Whereas over two-thirds of the students were able to state the functions of parts of a microscope as well as compute the magnification of a specimen, only 22.2% could describe the care of hand lenses and microscope. Further, less than a third of the students could state the functions of muscle cells as well as give the functions of parts of a plant cell.   A mere 7.1% of the students were able to describe the photosynthetic tissue in a plant. In all the competencies of microscopes and hand lenses, more boys than girls were rated proficient.

TABLE 5.04:   PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF CLASSIFICATION OF LIVING THINGS

COMPETENCIES	BOYS	GIRLS	ALL
Stating the differences between living & non-living things	95.2	94.4	94.8
Estimating the number of organisms in an area.	81.6	79.6	80.7
Classifying organisms into their taxonomic groups up to class level.	48.7	43.8	46.4
Constructing an identification key.	2.6	1.9	2.3
Describing how living things can be collected.	2.4	1.2	1.9

Whereas nearly all the students (94.8%) could state the difference between living and non-living things, a mere 1.9% were able to describe how living things can be collected while only 2.3 % could construct an identification key.

Further, 80.7% of the students could estimate the number of organisms in an area compared to about 1 in 2 (46.4%) who could classify organisms into their taxonomic groups. The proportions of boys and girls reaching the desired proficiency levels were comparable.

TABLE 5.05:   PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF SOIL

COMPETENCIES	BOYS	GIRLS	ALL
Stating methods of preventing soil erosion.	93.0	90.8	92.0
Explaining how a named factor affects the quality of soil.	58.7	46.2	53.0
Outlining characteristics of a fertile soil	57.4	45.3	51.9
Explaining the four steps in the water cycle	34.8	21.5	28.7
Giving reasons why cassava grows properly in a sandy soil	26.0	20.2	23.4
Calculating the % of air in a soil sample	15.1	9.5	12.6

The majority of the students (92.0%) were able to state methods used to prevent soil erosion while about a half could explain how a named factor affects the quality of soil and outline the characteristics of a fertile soil. Further, whereas about a quarter of the students were able to explain the steps of the water cycle, only 12.6% could calculate the percentage of air in a soil sample.

The proportions of boys rated proficient in all the competencies of soil were significantly higher than those of girls.

TABLE 5.06   PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN SELECTED COMPETENCIES OF FLOWERING PLANTS.

COMPETENCIES	BOYS	GIRLS	ALL
Stating the functions of a root to a plant	⚑ 88.4	⚑ 83.8	⚑ 86.3
Explaining the functions of the parts of a flower.	⚑ 65.6	⚑ 57.1	⚑ 61.7
Naming parts of a flower	⚑ 56.2	⚑ 44.9	⚑ 51.0
Identifying leaf types.	⚑ 28.0	⚑ 22.7	⚑ 25.4
Drawing and labelling the internal parts of a root.	⚑ 18.9	⚑ 14.6	⚑ 17.0
Drawing and labelling the external structure of a seed.	⚑ 13.5	⚑ 8.2	⚑ 11.1
Describing the functions of modified stems.	⚑ 4.1	⚑ 2.0	⚑ 3.2

With the exception of stating the functions of a root to a plant and naming and explaining the functions of part of a flower where at least a half of the students were rated proficient, very low proportions of students reached the desired rating in the rest of the competencies of flowering plants.

Boys performed significantly better than the girls in all the competencies of "Flowering Plants".

5.6   ACHIEVEMENT OF STUDENTS IN BIOLOGY BY AGE

In this section, a presentation of the achievement of students in Biology by age is made. Table 5.07 shows the mean scores of S 2 students in Biology by age and gender.

TABLE 5.07:   MEAN SCORES OF S 2 STUDENTS IN BIOLOGY BY AGE AND GENDER

AGE (years)	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
11 - 13	37.0	3.33	28.4	1.94	31.9	2.44
14	33.3	1.43	27.9	0.86	30.2	1.02
15	31.2	0.82	24.7	0.33	27.6	0.50
16	28.4	0.44	23.0	0.27	25.9	0.32
17	26.2	0.31	22.0	0.31	24.8	0.27
18	24.3	0.38	19.8	0.53	23.3	0.33
18+	24.4	0.51	20.3	0.87	23.8	0.49

The mean scores of students in Biology decreased with increase in age from 31.9% for the 11 − 13 year-olds to 23.3% for the 18 year-olds. It then increased by 0.5% to 23.8% for 18[+] year-olds.

The boys obtained significantly higher mean scores than the girls in each of the ages. Figure 5.03 shows the percentage of students rated proficient in Biology by age and gender.

FIGURE 5.03: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN BIOLOGY, BY AGE AND GENDER

	11-13	14	15	16	17	18	18+
BOYS	51.6	38.5	32.7	22.9	14.2	10.8	11.8
GIRLS	18.7	20.3	11.4	6.6	5.8	5.4	3.2
ALL	32.2	27.9	21.0	15.2	11.4	9.6	10.5

AGE (years)
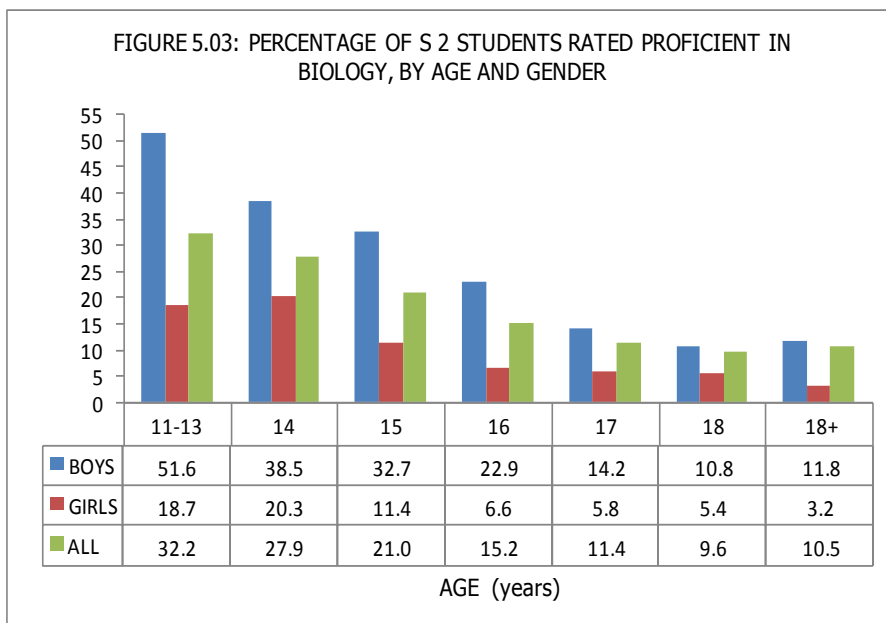
The proportions of students reaching the desired proficiency level decreased with increase in age from 11 − 13 year-olds at 32.2% to 18 year-olds at 9.6%. It then increased slightly for the 18 year-olds to 10.5%.

The proportion of boys attaining the desired proficiency level at each age was significantly higher than that of the girls for a similar rating.

5.7 ACHIEVEMENT OF STUDENTS IN BIOLOGY BY OWNERSHIP AND USE STATUS

A description of the achievement of students in Biology by ownership and USE status is made in this section. Firstly, a description of the achievement is made by school ownership, followed by USE status and finally by both school ownership and school USE status.

5.7.1 Achievement of S 2 Students in Biology by School Ownership

This section describes the achievement of students in Biology by school ownership. Table 5.08 shows the mean scores of students in Biology by school ownership.

OWNERSHIP	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Government	29.2	0.76	24.3	0.43	27.1	0.59
Private	27.1	0.51	24.2	0.58	25.6	0.43

The mean scores of students from government and private schools were
27.1% and 25.6% respectively. There was an insignificant difference in the
mean scores obtained by students from either category of school
ownership. However, boys from government schools obtained a
significantly higher mean score than girls from the same school ownership.
There was no insignificant difference between the mean scores of boys and
girls from private schools.

Figure 5.04 shows the percentage of boys and girls rated proficient in
Biology by school ownership.
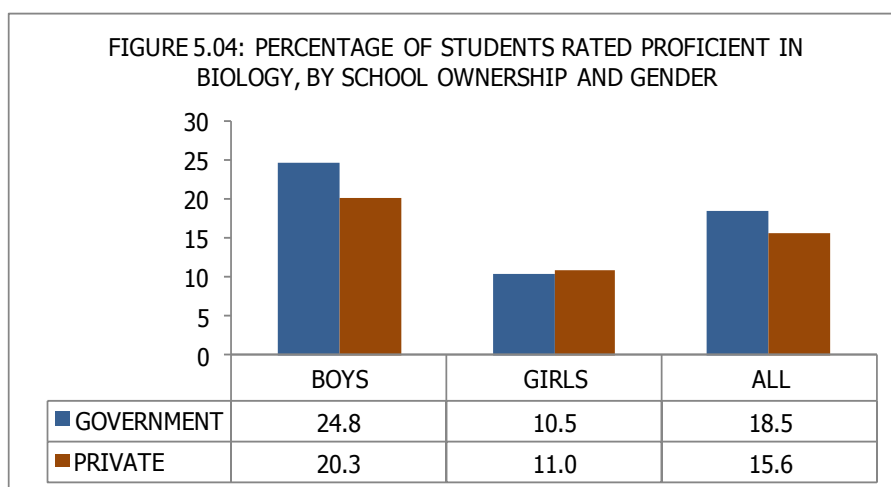
FIGURE 5.04: PERCENTAGE OF STUDENTS RATED PROFICIENT IN
BIOLOGY, BY SCHOOL OWNERSHIP AND GENDER

	BOYS	GIRLS	ALL
GOVERNMENT	24.8	10.5	18.5
PRIVATE	20.3	11.0	15.6

There was an insignificant difference in the proportions of students rated
proficient in Biology in the government and private schools.   Their
respective proportions were 18.5% and 15.6%. Significantly, more boys
than girls attained the desired rating in either category of school ownership.

5.7.2 Achievement of S 2 Students in Biology by School USE
Status

This section describes the achievement of students in Biology by school
USE status. Table 5.09 shows the mean scores of students in Biology by
school USE status.

TABLE 5.09: MEAN SCORES OF STUDENTS IN BIOLOGY BY SCHOOL USE STATUS

SCHOOL USE STATUS	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
USE	26.8	0.35	22.8	0.26	25.0	0.28
Non-USE	34.3	1.67	28.5	0.90	31.6	1.26

The mean scores of students from non-USE and USE schools were 31.6% and 25.0% respectively; implying that non-USE students performed significantly better than their counterparts in the USE schools. Furthermore, the boys from either category of school status obtained significantly higher mean scores in Biology than girls in the same school set up.

Figure 5.05 shows the percentage of students reaching the desired proficiency levels in Biology by school USE status.

FIGURE 5.05: PERCENTAGE OF STUDENTS RATED PROFICIENT IN BIOLOGY, BY SCHOOL USE STATUS AND GENDER

	BOYS	GIRLS	ALL
USE	17.4	6.8	12.6
Non-USE	43.2	22.0	33.1
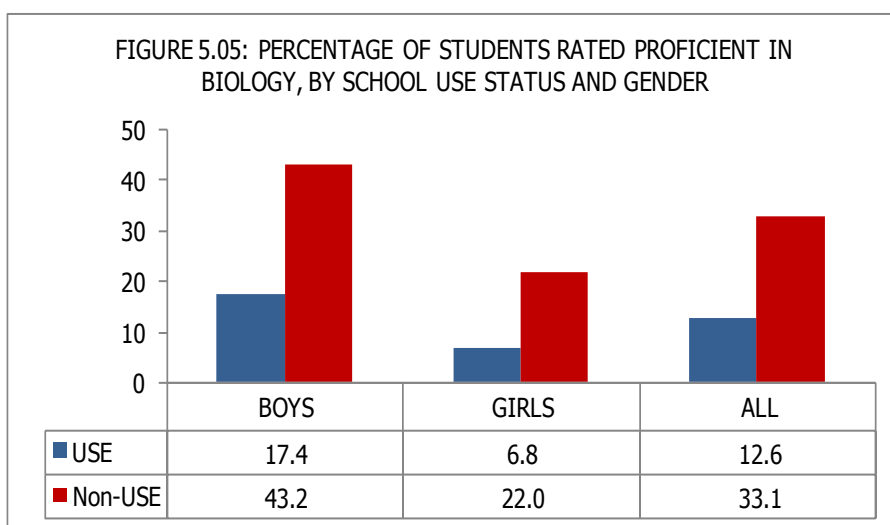
The proportions of students rated proficient in Biology from non–USE and USE schools were 33.1% and 12.6% respectively. The percentage of students attaining the desired rating in non-USE schools more than doubled that of their counterparts from USE schools. Further, the proportion of boys from either category of school status was significantly higher than that of the girls in the same setting.

5.7.3: Achievement of S 2 Students in Biology by School Ownership and USE Status

A presentation of the achievement of students by both school ownership and USE status is made in this section. Table 5.10 shows the mean scores of students in Biology by school ownership and USE status.

TABLE 5.10:   MEAN SCORES OF STUDENTS IN BIOLOGY BY SCHOOL OWNERSHIP AND USE STATUS

SCHOOL OWNERSHIP AND USE STATUS	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Government USE	27.3	0.39	23.2	0.29	25.5	0.32
Government Non-USE	39.7	2.18	32.8	1.75	37.1	2.10
Private USE*	24.5	0.59	21.1	0.51	22.9	0.51
Private Non-USE	29.7	0.69	26.7	0.81	28.0	0.68

Students from government non-USE schools obtained a significantly higher mean score, (37.1%) compared to 25.5% of their counterparts from the government USE schools. Further, students from private non-USE schools obtained a mean score of 28.0% that was significantly higher than the 22.9% of students from private USE schools.   Students from the government non-USE schools performed best, followed by students from private non – USE schools. Boys obtained higher mean scores than girls in either category of school set up.

Figure 5.06 shows the proportions of students rated proficient in Biology by school ownership and USE status.

FIGURE 5.06: PERCENTAGE OF STUDENTS RATED PROFICIENT IN BIOLOGY BY SCHOOL OWNERSHIP AND USE STATUS

	GOVERNMENT		PRIVATE	
	USE	Non-USE	USE	Non-USE
BOYS	18.2	61.8	13.8	27.1
GIRLS	7.3	35.3	4.6	16.2
ALL	13.3	51.9	9.4	21.2
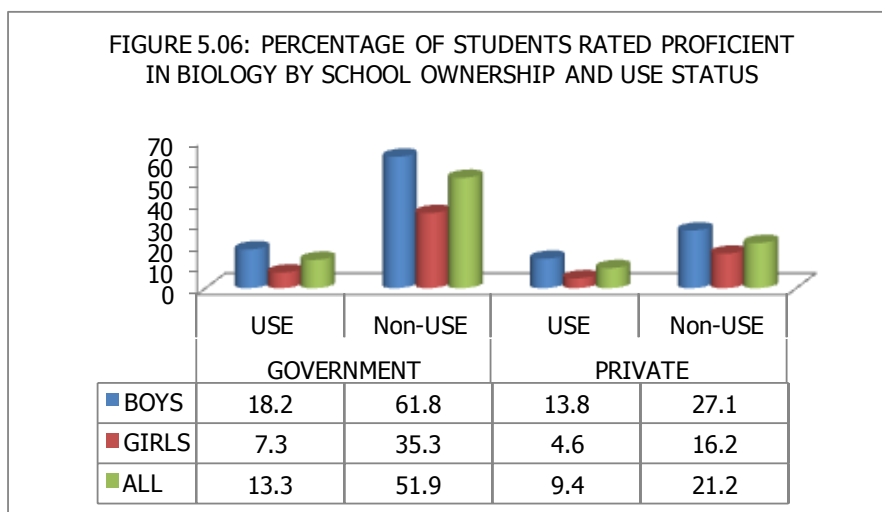
Although 51.9% of the students from government non–USE schools reached the desired proficiency levels, only 13.3% of the students from government USE schools obtained a similar rating. Smaller proportions of students from private non–USE and private USE schools were rated

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* Commonly referred to as PPP schools-Public Private Partnership schools.

proficient at 21.2% and 9.4%, respectively. More boys than girls reached the desired proficiency in all the school types.

5.8   ACHIEVEMENT OF STUDENTS IN BIOLOGY BY SCHOOL PROGRAM

An outline of the performance of students in Biology by school program is given in this section. Table 5.11 shows the mean scores of students in Biology by school program.

TABLE 5.11:   MEAN SCORES OF STUDENTS IN BIOLOGY BY SCHOOL PROGRAM AND GENDER

SCHOOL PROGRAM	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
Single-session	29.0	0.71	24.5	0.40	27.0	0.53
Double-session	27.1	0.63	23.3	0.54	25.4	0.58

The mean score (27.0%) of students from single session schools was comparable to 25.4% of students from double session schools. In either type of school program, boys obtained mean scores that were significantly higher than the girls' in the same set up.

The proportions of students attaining the desired proficiency in Biology by school program is given in figure 5.07.

FIGURE 5.07: PERCENTAGE OF STUDENTS RATED PROFICIENT IN BIOLOGY, BY SCHOOL PROGRAM AND GENDER

	BOYS	GIRLS	ALL
SINGLE SESSION	25.1	11.6	18.9
DOUBLE SESSION	17.9	7.0	13.0
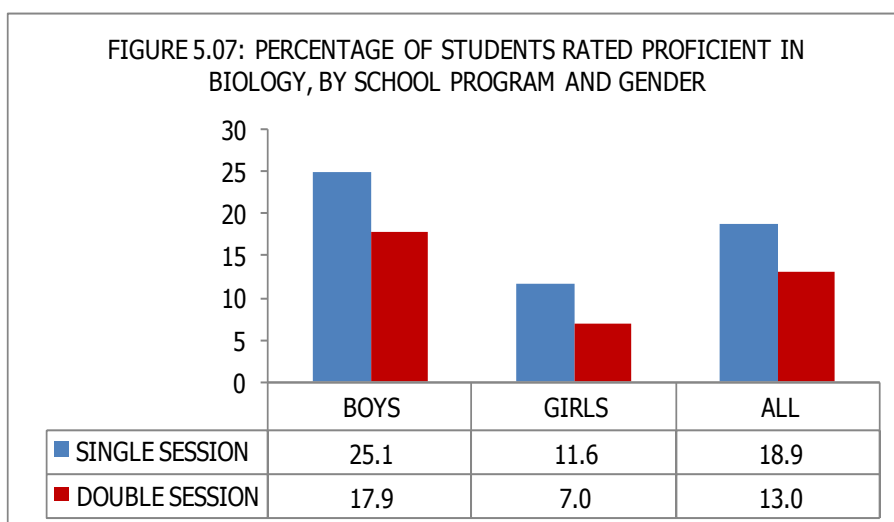
There was a higher proportion of students (18.9%) rated proficient from single session schools as compared to 13.0% from double session schools. More boys than girls were rated proficient in either category of school program.

5.9 ACHIEVEMENT OF STUDENTS IN BIOLOGY BY SCHOOL LOCATION

This section presents the achievement of students in Biology by school location and gender.

Table 5.12 shows the mean scores of students in Biology by school location.

TABLE 5.12: MEAN SCORES OF S 2 STUDENTS IN BIOLOGY BY SCHOOL LOCATION

SCHOOL LOCATION	BOYS		GIRLS		ALL	
	Mean	S.E	Mean	S.E	Mean	S.E
URBAN	30.9	1.19	25.5	0.61	28.5	0.92
RURAL	27.0	0.43	23.5	0.39	25.3	0.36

The respective mean scores obtained by students from urban and rural schools were 28.5% and 25.3%. Although there was an insignificant difference in the mean scores, students from urban schools performed slightly better. The mean scores of boys were significantly higher than that of the girls in either school location. Figure 5.08 shows the proportion of students rated proficient in Biology by school location and gender.

FIGURE 5.08: PERCENTAGE OF STUDENTS RATED PROFICIENT IN BIOLOGY, BY SCHOOL LOCATION AND GENDER

	BOYS	GIRLS	ALL
URBAN	31.1	13.1	23.1
RURAL	18.2	9.1	14.0
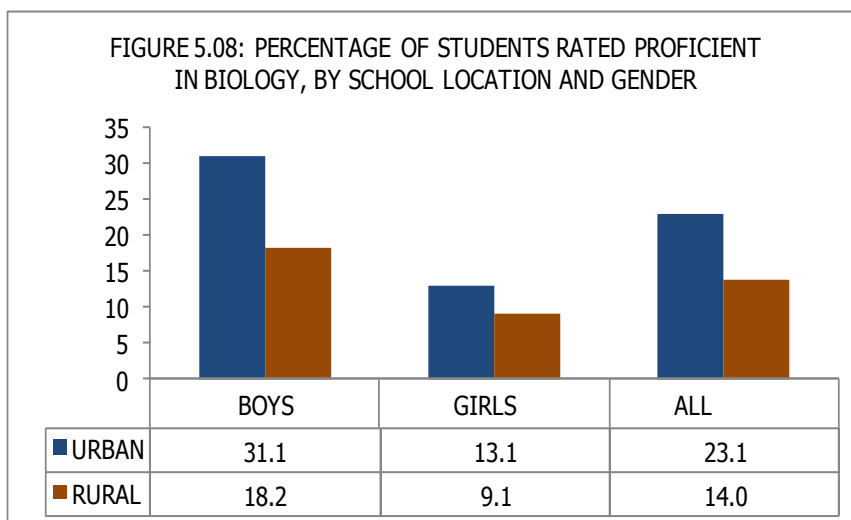
Whereas about a quarter of the students (23.1%) reached the desired rating in urban schools, only 14.0% attained a similar rating in rural schools. There was a significant difference in the proportion of boys and girls rated proficient in Biology by school location.

5.10 ACHIEVEMENT OF STUDENTS IN BIOLOGY BY ZONE AND GENDER

This section outlines the achievement of students in Biology by zone and gender. Table 5.13 shows the mean scores of S 2 boys and girls in Biology by zone and gender.

TABLE 5.13:   *MEAN SCORES OF S 2 BOYS AND GIRLS IN BIOLOGY BY ZONE*

REGION	ZONE	BOYS		GIRLS		ALL	
		Mean	S.E	Mean	S.E	Mean	S.E
Central	Central I	29.4	1.60	25.9	0.96	27.6	1.11
	Central II	26.0	1.16	22.3	0.77	24.1	0.92
	Central III	24.7	1.16	21.7	1.22	23.1	1.05
East	Far East	30.2	2.69	23.5	1.17	27.7	1.94
	Mid East I	24.7	1.10	21.9	1.10	23.4	1.07
	Mid East II	24.6	1.51	20.9	0.52	23.1	1.05
	Near East	25.8	0.72	22.4	0.88	24.2	0.69
Kampala	Kampala	33.9	4.71	29.3	2.16	31.7	3.48
North	Mid North I	32.5	0.89	26.6	0.84	30.4	0.91
	Mid North II	31.1	1.14	25.6	0.86	29.4	1.03
	North East	31.2	1.61	26.0	1.11	28.6	1.02
	West Nile	29.1	1.07	23.7	0.98	27.1	0.97
West	Far West	30.0	1.03	25.8	0.86	27.8	0.89
	Mid West	26.3	0.72	21.8	0.68	24.2	0.66
	North West	24.7	0.73	21.6	0.95	23.4	0.80
	South West	34.2	2.55	27.4	1.09	31.0	1.70
Uganda		28.6	0.58	24.3	0.33	26.6	0.44

With the exception of Kampala, South West and Mid-North I where the students obtained mean scores of more than 30% but less than 32%, the rest of the zones obtained mean scores in the range 23.1% - 29.4%. Central III and Mid-East II obtained the lowest mean score of 23.1%.

Boys obtained significantly higher mean scores than the girls in all zones of the country. Table 5.14 gives the percentage of students rated proficient in Biology by zone and gender.

TABLE 5.14: PERCENTAGE OF S 2 BOYS AND GIRLS RATED PROFICIENT IN BIOLOGY BY ZONE AND GENDER

REGION	ZONE	BOYS	GIRLS	ALL
Central	Central I	29.7	15.9	22.8
	Central II	14.5	6.1	10.2
	Central III	12.8	6.2	9.3
East	Far East	24.1	6.4	17.4
	Mid East I	13.3	7.4	10.6
	Mid East II	13.7	2.4	9.3
	Near East	15.1	8.2	11.9
Kampala	Kampala	37.9	22.4	30.6
North	Mid North I	36.6	13.9	28.3
	Mid North II	31.3	11.1	24.9
	North East	31.3	11.6	21.5
	West Nile	24.9	6.9	18.2
West	Far West	26.1	11.8	18.7
	Mid West	12.2	5.1	8.9
	North West	7.9	2.2	5.6
	South West	42.1	16.5	30.2
Uganda		23.6	10.7	17.7

Kampala had the highest proportion of students (30.6%) attaining the desired proficiency level followed by South West with 30.2% of the students who reached the similar rating. The percentage of students rated proficient in the rest of the zones ranged from 8.9% for Mid-West to 28.3% for Mid–North I. The proportion of boys and girls reaching the desired proficiency levels followed the same pattern as the zonal mean scores.

5.11   ACHIEVEMENT OF STUDENTS IN BIOLOGY IN 2008 – 2012

This section compares the performance of students in Biology over the years 2008 – 2012. The proportions of students attaining the desired proficiency is given in Figure 5.09.

FIGURE 5.09: PERCENTAGE OF S 2 STUDENTS RATED PROFICIENT IN BIOLOGY IN 2008 - 2012, BY GENDER

	2008	2009	2010	2011	2012
BOYS	43.2	41.4	36.1	24.2	23.6
GIRLS	28.8	30.6	24.6	14.9	10.7
ALL	36.7	36.3	30.4	19.6	17.7
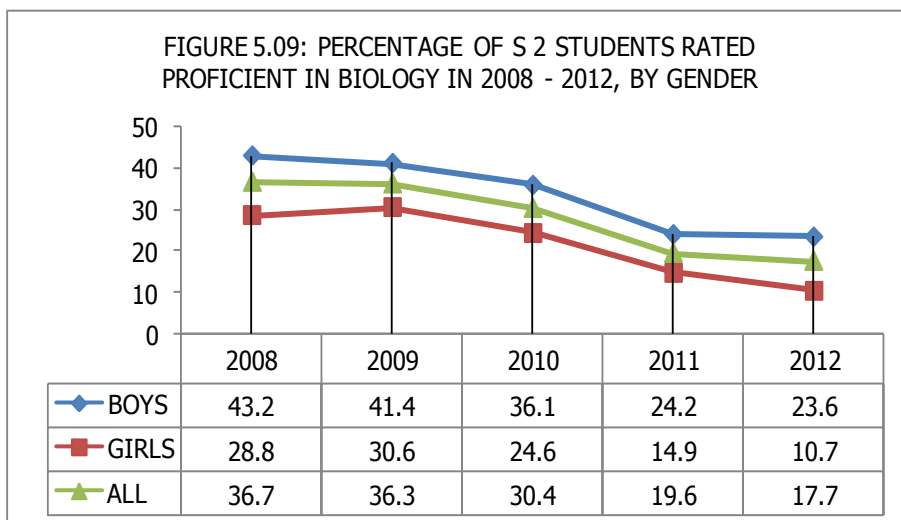
Although the proportions of students reaching the desired proficiency was approximately the same in 2008 and 2009, the figures have continued to drop following a gradual decline. More boys than girls continue to reach the desired rating.

5.12   CONCLUSIONS

Topically there was a much better performance of students (68.1%) in the topic of "Insects" in comparison to other topics. For example the next best done topic was "Microscopes and Hand Lenses" where 38.5% of the students reached the desired proficiency level. Very few students demonstrated competence in challenging subject matter which required application and analytical skills appropriate to the subject matter. The performance of students in different competencies within a topic varied as follows:

In 'Insects' whereas a majority of students (90.5%) could give the ways of controlling the spread of mosquitoes, about 3 in 4 could draw and label the external features of a named vector. Worse still, only 39.2% could describe the life cycle of a named vector.

In 'Microscopes and Hand lenses', whereas slightly over two thirds of the students could state the functions of given parts of a microscope as well as compute the magnification of a specimen, only 22.2% could describe the care of microscopes and hand lenses. Further, a mere 7.1% could describe a photosynthetic tissue in a plant.

In " Classification of Living things' whereas over 3 in 4 students could state the difference between living and non-living things as well as estimate the number of organisms in an area, a mere 1.9% were able to describe how living organisms can be collected.

In 'Flowering Plants', which was the worst done topic, a majority of students (86.3%) could state the functions of a root to a plant whereas just 1 in 2 were able to name the parts of a flower. A smaller proportion of students (17.0%) had the ability to draw and label the internal parts of a root.

In 'soil', the second worst done topic in Biology, students demonstrated competence in stating the methods of preventing soil erosion as well as outlining the characteristics of a fertile soil. However, they showed difficulty in calculating the percentages of air in a soil sample.

Chapter 6

6.0 CONCLUSIONS, DISCUSSIONS AND RECOMMENDATIONS

This chapter presents the main findings together with the probable reasons for the performance pattern as well as recommended actions to be taken to address the weaknesses. In addition to that, the responsibility centres expected to implement the suggested recommendations are shown.

6.1 OVERALL LEVEL OF ACHIEVEMENT

Results:

- Just about a half of the students (48.3%) reached the desired level of proficiency in English Language, and only (43.3%) did so in Mathematics. A much smaller proportion (17.7%) attained a similar rating in Biology.

Reasons:

- High student enrolment in secondary schools most likely affected achievement in Mathematics and Biology more than English Language as these subjects require closer and more frequent individual monitoring of student performance.
- Teaching which focuses on cramming to pass public examinations instead of learning Competencies.
- Emphasizing lower order thinking skills while teaching.
- Inadequacy of assessment skills among teachers.
- Failure to adhere to the national curriculum from NCDC.

Recommendations	*Responsibility Centre*
Provide the necessary requirements, such as teachers, classrooms in order to reduce class sizes.	MoE&S
Re-orient the teaching to focus on developing of competencies.	Teachers, Head teachers, Inspectors
Teach students in a manner that fosters development of higher order thinking skills (HOTS)	Teachers, Headteachers.
Train all teachers in correct formative assessment techniques.	UNEB
Adhere to the national curriculum.	Teachers, Head teachers

6.2 ACHIEVEMENT BY COMPETENCIES

6.2.1 Achievement of Students in various Competencies of English Language

Results:

Students were able to:
- Read texts and respond to questions by picking appropriate information directly from the text.
- Write a composition using the correct format.
- Use pronouns, nouns and conjunctions correctly to make sentences.

Students had difficulty in:
- Reading a text, and using it to derive contextual meaning of words and phrases, forming own opinion and making predictions and conclusions, based on the theme of the story.
- Writing well sequenced, relevant and impressive compositions.
- Writing an advertisement with correct attributes.

Reasons:

- Limited variety of reading materials.
- Low levels of reading comprehension skills.
- Teaching reading comprehension as listening comprehension.
- Limited exposure to a variety of types of reading comprehension texts.
- Insufficient space, room and time, as some schools lack libraries. In addition, day scholars may not have space, time and lighting at home to enable them read after school.
- Rampant incorrect use of language by some teachers, community and media.
- Limited practice in composition writing, as it is difficult to assess.
- Lowly developed creative and imaginative writing skills.
- Inadequate practice in appropriate application of grammar.
- Selective teaching which ignores some aspects of the curriculum like writing of adverts, announcements, e.t.c.
- Encouraging students to cram stories copied from text books instead of training them to write their own.

Recommendations	Responsibility Centre
Train students how to read for comprehension.	Teachers, Head teachers
Provide a variety of reading comprehension materials.	Teachers, Parents, Headteachers, MoE&S
Guide students on how to prepare personal timetables, so as to be able to do part of their school work before going home.	Teachers, Head teachers
Ensure regular practice in composition writing and writing of other kinds of text.	Teachers
Ensure reading comprehension lessons remain so instead of becoming listening comprehension lessons.	Teachers, Head teachers, Inspectors
Teach following the national curriculum from NCDC.	Teachers, Head teachers.

6.2.2 Achievement of Students in various Competencies of Mathematics

Students were able to:
- Perform the four operations on whole and decimal numbers.
- Draw circles accurately.
- Solve problems involving shopping.

Students had difficulty in:
- Using the concept of LCM in daily life.
- Correcting a number to a specified number of decimal places.
- Identifying a side adjacent to a given angle of a triangle.
- Constructing a triangle whose dimensions are stated.
- Computing the curved surface area of a cylinder.
- Finding the sum of a series.

Reasons:

- Teaching in an abstract manner, without relating concepts to everyday life experiences.
- Assessing using mainly items that require low order thinking skills other than those needing higher order thinking skills.
- Shortage of qualified Mathematics teachers.
- Shortage of textbooks.
- Inadequate practice by students.
- Teaching theoretically without geometrical illustrations.

Recommendations	Responsibility Centre
Provide regular in-service training for teachers, especially on how to teach in a way that fosters the development of higher order thinking skills (HOTS).	NCDC, DES, Teachers' Association
Organize special training for teachers on how to prepare assessment in a way that fosters the development of higher order thinking skills.	UNEB
Devise a strategy to train, recruit and retain Mathematics teachers in all schools.	Head teachers, MoE&S
Teach in a manner that makes Mathematics an interesting subject to students.	Teachers, Inspectors
Strengthen the Mathematics clubs in schools.	Teachers, Head teachers
Teach using practical examples and real life situations.	Teachers

6.2.3 Achievement of S 2 Students in various Competencies of Biology

Results:

Students were able to:
- State the differences between living and non-living things.
- Explain functions of the parts of a flower.
- Estimate the number of organisms in a given area.

Students had difficulty in:
- Constructing identification keys.
- Classifying organisms into their taxonomic groups.
- Describing how living things can be collected.
- Describing functions of modified roots, stems and leaves.
- Labelling the internal structure of a root.

Reasons:

- Shortage of qualified Biology teachers.
- Teaching and learning theoretically.
- Lack of experimental gardens in some schools.
- Inadequate apparatus and reagents.
- Failure to follow the progressive arrangement of the National Curriculum.
- Use of only written and not practical assessment during teaching.
- Preparing assessment that tests mainly the lower cognitive skills.
- The topic of soil is left for the Agriculture teacher to handle.

Recommendations	Responsibility Centre
Devise a strategy to popularize Biology to students in secondary schools and encourage student teachers to offer it as one of their teaching subjects.	Teachers, Head teachers, NTCs, Universities, MoE&S
Use the environment as the basic laboratory for Biology.	Teachers, Head teachers
Set up experimental gardens.	Teachers, Head teachers
Regularly organise workshops to train teachers on correct assessment techniques.	Head teachers, UNEB, MoE&S
Provide the basic apparatus and equipment for Biology.	Head teachers, MoE&S, Parents
Teach topics planned for S 2 by National Curriculum at S 2 level.	Teachers
Encourage the Biology teachers to teach all topics stipulated in the National Curriculum instead of setting aside some topics to be taught by Agriculture teachers.	Teachers

6.3   ACHIEVEMENT OF STUDENTS BY GENDER

Results:

- Boys were slightly better than girls in English Language.
- Boys did significantly better than girls in Biology and Mathematics.

Reasons:

- Still few role models. For example, during the 2011 survey, it was found that 39.6% of the teachers of English Language were female, while only 8.7% and 10.9% of the teachers of Mathematics and Biology, respectively, were females.

Recommendations	Responsibility Centre
Devise a strategy to help girls get interest in Mathematics and Sciences.	Teachers, Head teachers, PTCs, NTCs, Universities, MoE&S
Encourage females to train to teach Science and Mathematics.	Teachers, Head teachers, NTCs, Universities, Parents
Deliberately source for and recruit female teachers of Mathematics and Biology.	Head teachers, MoE&S

6.4   ACHIEVEMENT OF STUDENTS BY AGE

Results:

- Students who are young as 14 years and below performed better than others.
- The older the students the less achievement attained.

Reasons:

- Some older students may have distractors to their studies, such as relationships with the opposite sex; engaging in petty businesses.
- Older students may have learning difficulties, which could have caused a delay in their studies in the first place.
- Some older students have responsibilities which keep them busy in the homes – some are home managers.

Recommendations	*Responsibility Centre*
Counsel students to concentrate on their studies.	Parents, Teachers, Headteachers, Community leaders
Study the learners and get to know their individual learning problems.	Community leaders, teachers, Head teachers
Encourage parents to send their children to school at the recommended age.	Community leaders, teachers MoE&S
Disseminate findings from students, such as NAPE to the community so that they get to know the variables which affect students' learning achievement.	Community leaders, Teachers, Head teachers, UNEB.

6.5   ACHIEVEMENT OF STUDENTS BY SCHOOL OWNERSHIP AND USE STATUS

Results:
- Government non-USE schools performed best, followed by private non-USE, government USE, then private USE (PPP[9]).
- Performance difference was greatest in English Language followed by Biology and Mathematics was next.
- Less than a third of students from private USE schools were rated proficient in each of the subjects.
- The girls' performance significantly lagged behind that of the boys in either categories of school USE status and ownership across all subjects.

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[9] Public Private Partnership

Reasons:

- Most of the government non-USE schools are well established schools with more stable and reliable teaching staff and reputable cultures.
- Many non-USE schools are boarding, thus making supervision and monitoring easier.
- Distracters to learning, such as videos, market days in the mainly day USE schools, leading to high teacher and student absenteeism.
- Enrolment is higher in USE schools.
- The resources provided cannot match the robust increase in enrolments in USE schools, plus the increasing number of private providers entering into partnership with government.
- Most of the private USE schools are in rural areas, and indeed they entered into partnership with government as a survival strategy.
- Many USE schools lack the basic necessities for teaching, especially science subjects.
- A rather negative attitude to learning of many students in USE schools.
- Parents' attitude that - this is a free government school – makes them offer little or no effort to the school.

Recommendations	*Responsibility Centre*
Tighten school rules and regulations so as to reduce on absenteeism.	Teachers, Head teachers, Parents, inspectors
Reduce on student : teacher ratio.	MoE&S
Continue providing the necessary infrastructure and facilities in all schools, particularly in the USE schools.	MoE&S, Community leaders
Ensure regular and close monitoring of the learners' performance by the parents, especially in USE schools, where parents have almost abdicated their roles.	Teachers, Head teachers, Parents, Community leaders
Guide and counsel students on the need to stay in school and learn.	Teachers, Head teachers, Parents, Community leaders
Continue sensitizing parents to support their schools.	Teachers, Head teachers, Community Leaders.

6.6   ACHIEVEMENT OF STUDENTS BY SCHOOL LOCATION

Results:

- The achievement of students in urban schools was better than those in the rural settings. The difference in performance was wider in English Language, followed by Mathematics and then Biology.

Reasons:

- English is frequently used in urban areas, both in schools and outside schools.
- There is better learning environment in the urban areas, with many learning advantages and inducements.
- Reading materials are more readily available in urban areas.

Recommendations	*Responsibility Centre*
Invite persons who are role models to talk to the students in rural schools.	Teachers, Head teachers
Establish partnerships between rural and urban schools.	Head teachers
Provide sufficient reading materials to all schools	Headteachers, MoE&S
Encourage parents to buy books for their children	Community leaders, PTAs, Head teacher
Encourage day students in rural areas to do most their personal study at school	Teachers, Head teachers

6.7   ACHIEVEMENT OF STUDENTS BY SCHOOL PROGRAM

Results:

- Achievement levels were higher in single-session schools than double-session schools.
- Performance difference was greatest in English Language, followed by Mathematics and then Biology.

Reasons:

- Students in double-session schools have less time on task.
- Management and supervision in double-session schools is hard, as there are very many students.
- Limited space for private study at school.

Recommendations	Responsibility Centre
Train students to develop habit of having time for personal study.	Parents, Teachers, Head teachers.
Encourage students to utilize the time when they do not have a lesson for private study.	Teacher, Head teacher
Encourage group work by assigning projects to be done in groups	Teachers
Deploy more teachers in double-session schools and provide for their accommodation in the school, so that they are readily available to supervise the students.	Head teachers, MoES
Explore ways of increasing the touch-hours between students and teachers in double-session schools.	Head teachers, MoE&S

6.8   ACHIEVEMENT OF STUDENTS BY ZONE

Results:

- Two zones: Kampala and South West had higher achievement levels in all subjects while Mid East I, Mid East II and North West had lower achievement levels.
- Generally, districts in the eastern region had the lowest level of achievement in all subject areas.
- No zone had at least a half of the students rated proficient in Biology, however, only six and four zones reached that level in English Language and Mathematics, respectively.

Reasons:

- Inadequate learning facilities and teachers in some districts.
- Some of the districts with low levels of achievement are areas where fishing or cross border trade are major activities, and these could distract the students.
- Low levels of monitoring of students learning to ensure regular school attendance by students and teachers.

Recommendations	Responsibility Centre
Provide adequate facilities and teachers to all schools.	MoE&S
Sensitize parents and Community on the need for students to be in school during all school days.	Teachers, Head teachers, community leaders, MoE&S
Devise strategies of attracting and retaining teachers in difficult parts of the community.	Community leaders, MoE&S
Encourage the community to monitor children's learning to enhance regular school attendance.	Teachers, Head teachers, Community leaders, MoE&S

6.9 ACHIEVEMENT OF STUDENTS IN 2008 - 2012

Results:

- There has been a remarkable decline in the percentage of students rated proficient in the three subjects, over the years 2008 – 2012. Between 2010- 2011 the reduction in performance in English Language was not substantial. However, between 2011 – 2012, there was a substantial decline of about 18 points. In Mathematics, there was improved performance from that of last year with the proportion of students rated proficient going up by about 5 points. On the other hand, the performance in Biology has continued to decline though not substantially as was the case between 2011 – 2012 when it dropped by 10 points from 30.4% to 19.6%. This year Biology registered a reduction of at least 2 points in the proportion of students rated proficient.

Reasons:
- Increase in the number of districts from 87 in 2010 to 112 by 2012 (28.7%) increase. This led to increase in the number of schools sampled from the rural area since most of the new districts are rural.
- Increase in number of USE schools leading to:
  - o Inadequate number of full-time teachers in many schools, especially for Mathematics and Science subject.
  - o Too big classes to enable effective teaching of practicals.
  - o Inadequate facilities and chemicals.
  - o Inadequacy of some teachers in teaching the three subjects.
- Inadequate language teaching methods:
  - o Lack of knowledge of varied styles of composition writing.
  - o Selective teaching which does not effectively cover the English Language curriculum. Some aspects of the curriculum such as writing of adverts, reports and conversations are ignored.

- The habit of teaching which encourages students to cram, especially compositions, for reproduction in examinations, other than imparting skill of composition writing to them.
- Examinations driven teaching right from SI (or primary level) in many schools. This way of teaching does not consider the learning of competencies as important.
- Inadequacy among teachers of correct formative assessment techniques.

Recommendations	Responsibility Centre
Teach following the national curriculum	Teachers, Head teachers
Reduce the student-teacher ratio by recruiting more teachers	MoE&S
Teach aiming at imparting skills to the students.	Teachers, Headteachers
Organize refresher courses for teachers focusing on improving their skills of teaching different aspects of the curriculum.	Teachers' association, MoE&S
Continue to expedite the provision of the necessary infrastructure and facilities in all the schools.	MoE&S
Train all teachers in correct formative assessment techniques.	UNEB
Release the USE funds on time to allow schools to plan how to effectively use it.	MoE&S.