

UNIVERSAL SECONDARY EDUCATION (USE) IN GUYANA

June 2008

Acknowledgements

This Review could not have been completed without the assistance, guidance and insights provided by Mrs Evelyn Hamilton, Chief Planning Officer, Ministry of Education, and the staff of the Planning Unit during fieldwork in Guyana in November-December 2007. Assistance provided by Joy Duff-Alleyene in the World Bank Office in Georgetown is also acknowledged.

Any errors in interpretation of the information and Ministry data are the author's, but hopefully the insights and presentation of the data are more useful than any errors.

Currency: This Review uses Guyanese Dollars (G\$).
Approximate exchange rate in November/December 2007 was US\$1=G\$200.

Aggregation of Regional Data: To focus discussion of enrollment and other patterns, this Review aggregates regional data in three groups. There are marked variations across all regions. Data for individual regions are included in Attachments.

R1789	R1,R7,R8,R9	Hinterland and Riverine Regions
R2560	R2,R5,R6,R10	Coastal Rural Regions
R3411	R3,R4,R11	Coastal Urban Regions (Georgetown and adjacent areas)

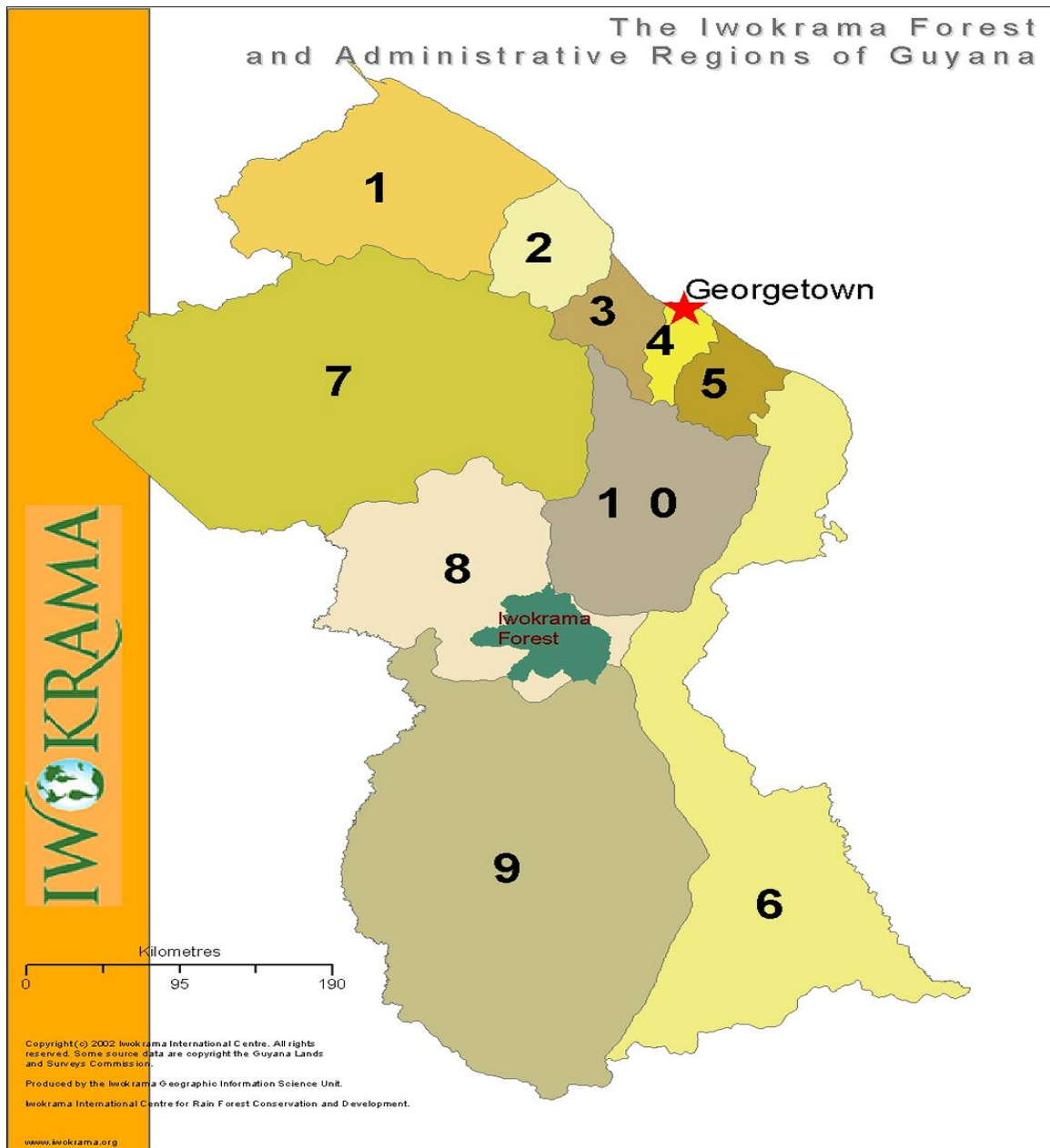
Data for Georgetown is sometimes included in Region 4 (such as NCERD data prior to 2007), as a subset of Region 4, and education expenditure reported under the Ministry. Some Ministry reports refer to Georgetown as "Region 11". This Review uses "Region 11".

Data sets: Major data sets used during this review were the Annual Statistical Digests, especially 2004/05 and the unpublished 2005/06 Digest. The Planning Department provided individual school data for some 350 secondary schools (including 242 Primary Tops), a teacher data set containing age, gender, qualification, trained status, and position for some 3,400 "Secondary" teachers, plus a table with individual school data on monthly attendance in 2004/05.

Student examination data for the Secondary Schools Entrance Examination (SSEE) and the Caribbean Examinations Commission (CXC) were from reports published by the National Center for Educational Resources and Development (NCERD).

Financial data by region was from MOF FreeBalance Financial Management System reports.

Questions about calculations and methods used to manipulate Guyana data in MS Access, including more detailed reports and the structured query language (SQL) used to generate reports, plus any spreadsheets using data are available from the author geoff_howse@yahoo.com.au.



The Iwokrama map is one of the simplest published maps of Guyana showing Regions 1-10 and Georgetown. It could be improved by showing Venezuela, Brazil and Surinam, plus the Atlantic Ocean. Region 6 may be misleading – it has a large hinterland area but the population is concentrated towards the Atlantic coast.

Abbreviations

BEAMS	Basic Education and Management Strengthening Project
CHS	Community High Schools
CSEC	Caribbean Secondary Education Examination
CXC	Caribbean Examinations Commission
DfID	UK Department for International Development
EFA	Education for All (MDG)
FTI	Fast Track Initiative (EFA)
GBET	Guyana Basic Education Teacher Training Project
GDP	Gross Domestic Product
GEAP	Guyana Education Access Project
GER	Gross Enrollment Rate
G\$	Guyana Dollar
GSS	General Secondary Schools
IADB	InterAmerican Development Bank
MDG	Millennium Development Goals
MOE	Ministry of Education
NCERD	National Center for Educational Resource Development
NER	Net Enrollment Rate
PTop	Primary Top (Secondary classes in a Primary School)
SSEE	Secondary Schools Entrance Examination
SSRP	Secondary Schools Rehabilitation Project
SIP	School Improvement Plan
UPE	Universal Primary Education
USE	Universal Secondary Education
WB	World Bank

Table of Contents

EXECUTIVE SUMMARY	vii
I. Context for a Review of USE	vii
II. Organization of this Report	vii
III. Key Findings	ix
IV. Guyana USE Scenarios	xi
V. Recommendations	xii
Chapter 1: Current Status of Secondary Education in Guyana	1
Four Strategic Options for USE 2008-2012	2
Trends in Secondary Enrollment	3
Creating Viable Secondary Schools	6
Chapter 2: Improving Access, Participation and Attendance	12
USE Strategy and Recommendations	23
Chapter 3: Upgrading and Qualifying Teachers	25
Staffing Small Secondary Schools	27
Staffing Schools with Trained/Qualified Teachers	30
Staffing is a Size of School Issue	38
Chapter 4: Improving Student Learning Outcomes	41
Grade 6 Examination Outcomes	41
Transition from Grade 6 to Grade 7	45
Student attendance	46
Grade 7 to Grade 11 Progression	50
CXC Examination outcomes	51
Comparisons between Guyana and Other CXC Countries	57
Summary of Challenges to Secondary Student Outcomes	58
Recommendations for further action	59
Chapter 5: Schools and Infrastructure	60
Chapter 6 Secondary Education Resources and Budgets	67
I. Measuring Education Shares of Budget and Gross Domestic Product	67
II. Using Existing Education Budgets more Efficiently	69
III. Whole School Plans and Budgets	76
Summary and Recommendations	77
Chapter 7: GUYANA USE 2008-2012	78
Three Scenarios	79
Demand for Secondary Education	81
Secondary Recurrent Expenditure “Gap”	84
Sensitivity Analysis	84
Five Risks	85

ATTACHMENTS	87
Attachment A1: Terms of Reference for Consultancy	87
Attachment A2: References	90
Attachment B: Core Issues for MOE Discussion 13 December 2007	91
Attachment C: Briefing Note on USE Review for meeting with Minister 19 December 2007	93
Attachment D1: Summary of Guyana Performance on 15 Measures	95
Attachment D2: Primary Completion using Grade 6 2005/06 Enrollment as percentage Grade 1 Enrollment in 2000/01	97
Attachment D3: Secondary Enrollment as percent Primary Enrollment, 2004/05	98
Attachment D4: Staffing and School Size	101
Attachment D5: Student Attendance	103
Attachment D6A: School Age Population Profile 2004/05 by Region and Gender	106
.....	108
Attachment D7: SSEE Examination Results by Region, 2001/02-2006/07	110
Attachment E: Projected Demand and Supply of Teachers	113
Attachment F: Teachers by Status and by Region	121
Attachment G: Education Finance	125
Attachment H: Summary of ODA Project Assistance	133
Attachment J: Summary of Baseline, Medium and High Outcomes Scenarios	134

UNIVERSAL SECONDARY EDUCATION (USE) IN GUYANA

EXECUTIVE SUMMARY

I. Context for a Review of USE

In 2002, Guyana adopted a broadly-based five year plan (2003-2007) to achieve universal secondary education, with a strategy to convert secondary classes in primary schools and grade 7-10 community high schools into General Secondary Schools (GSS) in which all students could present for the Caribbean Examination Certificate (CXC) or an alternative competency-based Certificate. Guyana had received extensive inputs from the Secondary Schools Rehabilitation Project (SSRP), the Guyana Education Access Project (GEAP), and the Basic Education and Management Strengthening Project (BEAMS), but achievements in 2007 remained well short of the 2002 objective.

At the beginning of November 2007, the World Bank commissioned a review¹ of all relevant documentation on Universal Secondary Education (USE) in Guyana, critical analysis of policies and proposed plans for achieving secondary education goals, development of a simulation model to estimate the costs of the major alternative policy options and to provide recommendations to Government for the finalization of the secondary education policy for Guyana.

Costing secondary education policy options required answers to questions about the 2003-2007 USE Strategy and the identification of the issues which the Government should consider in formulating a sector strategy which supports its broader poverty reduction strategy. The development of alternative scenarios with which Government could test policy options was complicated by the lack of a comprehensive education sector review. In a system where Ministry officials and the Minister have detailed knowledge about each of the 106 GSS and CHS (and 244 “primary” tops), Guyana required a more generalized analysis of the structural problems confronting its education system.

II. Organization of this Report

Current Status of Secondary Education (Chapter 1) summarizes the performance of public schools in Guyana against the MOE Policy on Universal Secondary Education (2002), trends evident in the annual Statistical Digests, and the broad issues presented to Senior MOE officers on 13 December and to the Minister on 19 December 2007. The first barrier to achieving USE is achieving sufficient primary school graduates with the competencies to succeed in secondary schools.

Improving Secondary Student Participation (Chapter 2) examines national and regional trends in population, enrollment, low levels of apparent transition from primary to secondary schools, poor secondary school entry examination (SSEE) results and issues related to the “size” of secondary schools. The “size” issue recurs in later chapters, with its effect on the number and quality/qualifications of secondary teachers, teacher attrition, the range of subjects that small schools can offer, poor student attendance, poor completion rates to Grade 11 and poor CXC examination results for the few students who complete Grade 11. Only 3.5% of secondary

¹ Terms of Reference (**Attachment A1**) included a review of comparable Caribbean countries. With five weeks available in the field and the additional time required for a comprehensive review of secondary education, the Bank agreed any visit/s to another country was unnecessary.

students in Primary Tops, 14.1% of Community High School students, and 50.6% of GSS reach Grade 11. More female students reach Grade 11 than do male students.

Summary of Secondary Education in Guyana, 2005/06 and “survival” to Grade 11

School Type	Region	N=	Grade						Students			Mean Enroll	G11/G7(%)	
			7	8	9	10	11	12	M	F	M+F		M	F
Primary	R1789	114	1146	861	766	411	23	4	1797	1481	3278	29	2	2
Tops	R2560	75	1070	828	727	486	70	0	2116	1436	3552	47	6	7
	R3411	53	1153	1162	629	226	26	11	1888	1333	3220	61	1	4
Comm	R1789	1	170	68	25	18	6	0	151	136	287	287	0	8
HS	R2560	5	366	358	248	214	82	0	733	535	1268	254	13	37
	R3411	18	2437	1917	1565	1271	331	0	4072	3449	7521	418	9	19
General	R1789	9	916	824	770	611	423	0	1540	2004	3544	394	43	49
SS	R2560	32	5516	4982	3793	3677	2617	111	9554	11142	20696	647	42	53
	R3411	41	5767	5506	4699	4109	3130	450	10721	12610	23331	569	48	61

Source: MOE data (GY0506S_Enr_Zone.sql)

Upgrading and Qualifying Teachers (Chapter 3) identifies small school enrollment issues in earlier chapters with the enrollment required to offer a viable secondary curriculum, improve teacher qualification/training and reduce attrition rates. The Chapter examines the combined effect of teacher attrition, student/teacher ratios and mean school enrollment with a changing mix in school types – fewer “primary tops” and an increase in general secondary schools. Factors affecting teacher supply and demand include projected enrollment, teacher attrition (loss) rates, retraining of untrained teachers, recruitment of trained teachers, improving student/ teacher ratios and the shift to increased GSS enrollment to achieve USE.

Student Learning Outcomes (Chapter 4) links poor student attendance, poor primary (SSEE) examination outcomes, limited secondary curriculum offerings, low rates of survival from Grade 7 to Grade 11 to the reported CXC results for Guyana. This chapter concludes with an analysis of better performing secondary schools – they presented more students/subjects, had higher average attendance, had higher percentage trained teachers, **and** were mostly schools in Georgetown and the adjacent regions 3 and 4. Recent data were not available to compare Guyana’s performance with other Caribbean countries.

Schools and Infrastructure (Chapter 5) presents the assessment that low student “demand” and a shortage of qualified teachers prevents Guyana achieving USE. Increasing the “supply” of secondary school places would not achieve USE unless other investments are made to improve the pool of suitably qualified students. Local factors justify new school construction (upgrading CHS to GSS, consolidating “tops”, replacing inadequate facilities) but this capital investment requires an equivalent investment in retraining, refreshing, upgrading, certifying and retaining teachers.

Secondary Education Resources and Budgets (Chapter 6) reviews education expenditure as a proportion of budget and the salary/non-salary recurrent expenditure for Primary (“Tops”) and Secondary schools. Regional differences in primary and secondary expenditure, and differences in expenditure by category contribute to variations in average expenditure per student. Small enrollment and higher residential costs distort per capita expenditure in hinterland regions. The salary expenditure “saved” by employment of untrained/unqualified teachers has been calculated to support an argument that these funds should be invested in upgrading teachers, improving curriculum and student learning outcomes.

Guyana USE Scenarios: For Guyana to approach universal secondary education, more students have to progress from primary to secondary and to remain in school to Grade 11. Chapter 7 identifies six “demand” assumptions – population aged 12-16, population loss, secondary Gross Enrollment Rate (GER), GSS share of total secondary enrollment, Grade 7 share of total secondary enrollment, and Grade 11 survival rates. Baseline, medium and high outcome scenario values for each assumption project the number of students presenting for CXC examinations to 2012. For any given student enrollment, the budget implications of each policy scenario depend on student/teacher staffing ratios, the retention of qualified teachers and success in upgrading qualifications of current teachers.

III. Key Findings

Achieving USE requires understanding of nine (9) key findings reported in Chapters 1-6:

- ③ **Quality primary education outcomes are the basis for achieving USE** - Grade 6 completion rates, primary student attendance, and secondary school entrance examination (SSEE) results determine the “demand” secondary education.

Primary completion rates² in 2004/05 were 96% for both boys and girls, but were 92% for boys and 90% for girls in the four riverine/hinterland regions (1, 7, 8 and 9). While performance should improve through Fast Track Initiative (FTI) activities, these four poor performing regions account for only 11% of total Guyana primary enrollment. (Georgetown, Region 3 and 4 account for 52%)³.

Primary student attendance reported as 76% for 2003/04 (Table 24 in 2004/05 MOE Statistical Bulletin) and limits initiatives to achieve better outcomes. There is some progress - Primary enrollments in hinterland regions increased 28% between 2001/02 and 2005/06 and SSEE candidature increased 37% over the same period.⁴

- ③ **Quality of primary school graduates.**

Combined hinterland and coastal rural regions average only 90% of the SSEE scores achieved in coastal urban regions (Georgetown, Region 3 and 4)⁵. Reducing this rural-urban gap will require improved performance in Math and English, as these subjects provide the foundations for success in secondary grades.⁶

- ③ **Demographic change points to a larger cohort passing out of Primary, but this may obscure performance on transition from primary to secondary.**

Students aged 7-11 years represent approximately 45% of combined primary and secondary enrollment in 2005/06 and will produce an increase in secondary enrollment as this larger cohort passes from primary grades to secondary⁷. Analysis of MOE statistics reveals that only 77% of 9-10 year-old students in 2001/02 were present as 13-14 year-olds in 2005/06. Poor transition exists across all regions, but appears to be greater for boys in Georgetown and Region 4.⁸

² Primary Completion Rate is the number enrolled in Grade 6 as a percentage of population aged 11. Population aged 11 used 2002 Census data (population aged 9 years).

³ See Table 1.2

⁴ See Chapter 4: Table 4.2

⁵ See Table 4.3 and Figures 4.3 and 4.4

⁶ See Chapter 2 (paragraph 2.17) and Chapter 4 (paragraph 4.18)

⁷ See Chapter 2: Table 2.2 and Figure 2.2

⁸ See Chapter 2: Table 2.6

- ③ **Secondary grade repetition, especially of males in Grade 7 remains high.**
High grade repetition rates (14.4% of male students and 8.8% of female students in 2004/05) are symptoms of poor system performance, including poor primary student outcomes above and reduce prospects of achieving USE. Hinterland Grade 7 repetition rates (17.6%) and coastal urban Grade 7 repetition (18.3%) are different phenomena, but each threatens the viability of secondary education. In a system with a shortage of qualified teachers, high repetition increases lower grade enrollment, adds to the numbers of teachers required, as well as aggravating poor attendance and “drop out”.⁹
- ③ **Retention of students from grades 7 through 11 remains too low.**
To achieve USE, Guyana has to improve on the 38% of Grade 7 students in 2001/02 who were still present in Grade 11 in 2005/06. There are three related concerns – males were 31.5% compared with 45.6% for females; overall retention has declined from 42.9% (of the 1997/98 Grade 7 intake), and greater male attrition in Georgetown and Regions 3 and 4 (only 29% survival to grade 11).¹⁰
- ③ **Student attendance rates of 60% in “Tops” and 80% in GSS are too low.**
The USE policy in 2002 should have had an attendance target which would have drawn attention to poor performance. Attendance remains around 60% in Primary Tops and Community High Schools (and male rates approximately 5% lower than female rates) and only 80% in GSS. Guyana cannot compete against CXC standards if one to two days are “lost” per week¹¹.
- ③ **Teacher qualifications and competencies limit student outcomes.**
In a system where attracting qualified teachers is a problem, there could be greater returns in helping “untrained” teachers achieve “trained” status and in encouraging teachers to upgrade their qualifications. Only 1-in-9 male teachers and 1-in-5 female teachers aged 16-30 are trained. Reducing recruitment of untrained teachers will be necessary if overall performance is to be improved. Secondary schools require teachers to be “qualified” in their teaching subject and this requires closer examination.¹²
- ③ **Losses of trained teachers increase pressure on education performance.**
Between 2004 and 2005, Guyana General Secondary Schools (GSS) lost 68 “trained” teachers and replaced them with 25 “untrained” teachers. Net losses understate the impact of teacher turnover – approximately 17% of teachers in 2004 “left” their school, including attrition by teachers who “transfer out” but do not take up an appointment at another school.¹³
- ③ **Subject offering and poor CXC outcomes limit overall education quality.**
Guyana reports increased CXC English A candidature between 2002 and 2003 but it has fluctuated around 8000 students over the past three years. Fewer than 30% candidates achieve Grade 1-3 passes in Math (against USE objective 35%). The National Center for Educational Resource Development (NCERD) does not report against the objective that 40% of secondary school leavers achieve Grade 1-3 proficiency in five subjects (but

⁹ Table 2.8 and paragraph 2.25 (Chapter 2) and Table 4.4 Grade 6/7 Transition.

¹⁰ Table 2.10, Tables 4.4, 4.8, 4.9

¹¹ Table 2.9, paragraph 2.32, Table 4.7 and Figures 4.7 and 4.8.

¹² Tables 3.1, 3.3, 3.4, 3.8, paragraph 3.26, and Figures 3.1, 3.9, 3.10.

¹³ Tables 3.14, 3.15, paragraph 3.42.

should analyze the unit record CXC data). Some 8000 English A candidates averaged only 2.7 Grade 1-3 passes in 2007.¹⁴

IV. Guyana USE Scenarios

The following table compares 2011/12 outcome using baseline, a medium outcome scenario and a high outcome, and compares the difference between the baseline and high outcome. The baseline is largely the “status quo” with 8 fewer CHS requiring conversion to GSS or new GSS construction.

The major difference between the “Medium” and “High” outcomes is a major reduction in Primary Tops requiring new GSS with boarding facilities and some “virtual” GSS with a core GSS serving a network of classrooms attached to Primary Schools. The difference between current “Primary Tops” and the proposed cluster or network school would be the students and the teachers “belong” to the GSS not to the host Primary schools.

PROJECTED 2011/12	Baseline	Medium Outcome	High Outcome	Difference High-Baseline
Population aged 12-16	79,000	87,900	90,500	+11,500
Secondary Students	67,900	77,600	81,400	+13,500
CXC Candidates	6,800	8,400	9,700	+ 2,900
GSS students as percent all Secondary	78%	79%	90%	
Students per Teacher (more GSS students)	20:1	23:1	26:1	
Percent trained (more GSS teachers)	61%	70%	80%	
Projected new teachers (over 5 years)	+226	+515	+660	+ 434
Recurrent Expenditure (G\$M constant)	\$4,290	\$4,631	\$4,646	+\$M 356
Recurrent Expenditure increase (5 years)	+4.4%	+8.3%	+8.5%	
Number of Primary Tops	181	178	36	- 130
Number of CHS	12	11	9	- 11
Number of GSS	89	92	96	+ 12
Recurrent Expenditure (G\$M constant)	\$4,290	\$4,631	\$4,646	+G\$M 356
Recurrent Expenditure increase (5 years)	+4.4%	+8.3%	+8.5%	
Additional GSS required over 5 years	+5 GSS	+8 GSS	+12 GSS	
Capital Expenditure required (G\$M)	G\$M5,250	G\$M8,400	G\$M12,600	+G\$M 7,350

Source: Scenario.XLS; Tables 7.2, 7.3, 7.4, 7.5; capital expenditure assumptions in Table 5.3

The High outcome scenario assumes that 90% of secondary students would be enrolled in a GSS, with more students per GSS. The ratio of Students per Teacher (STR) increases in almost equal steps from 20:1 in Baseline to 23:1 in Medium and to 26:1 for the High Outcome. The percentage of trained Teachers increases from 61% in the Baseline to 80% for the “High” outcome.

Even with the Baseline Scenario, Guyana requires five additional GSS, half the numbers of CHS and some reduction in the number of Primary Tops. The Medium scenario would require a further 3 GSS. The major difference between the Medium and the High outcome scenario is a major reduction in the number of Primary Tops and construction of a further 4 GSS.

The underlying assumption is that USE policy aim to get more students enrolled in (larger) GSS, fully-staffed by qualified teachers, higher student attendance and more students completing Grade 11 with successful CXC outcomes in five subjects. Without this educational USE focus,

¹⁴ Paragraphs 4.46-4.55, and Tables 4.10-4.13.

investment in new GSS construction would be difficult to justify. The efficiency outcomes are an important part of the financial justification for the additional capital required for upgrading CHS to GSS and consolidating “Primary Tops” into viable GSS.

Recurrent expenditure would be just over G\$4,600 million for both the Medium and the High outcomes, largely because of efficiencies of having 90% of secondary students in GSS and the higher STR requires fewer teachers. The average enrollment per CHS+GSS (“size”) in 2011/12 is 592 in the Baseline, 658 for the Medium outcome and 755 for the High outcome. These improvements in efficiency not only have larger numbers of students completing secondary but the average expenditure per student is lower.

While the capital expenditure for these scenarios is based on the number of new GSS required (at a standards less than Wisburg GSS), Guyana could identify better uses for these funds. Upgrading clusters of Primary Tops into a Regional GSS, with residential facilities where necessary, could meet student and community needs more effectively than construction of a new “green-fields” school. Some CHS could be upgraded to GSS with some classroom/facilities added at lower cost than construction of a completely new school. Chapter 5 suggests a framework for community, Regional Departments and MOE consultation about the best mix of schooling to achieve USE.

V. Recommendations

These nine findings suggest the Government should consider four strategies to improve student outcomes:

- (1) **Improve the viability of secondary schools:** Secondary schools with few students cannot deliver satisfactory outcomes – Primary Tops with an average 43 students cannot prepare students for transfer to a GSS to complete Grade 11. Consolidation of Primary Tops into a GSS may only be feasible in some coastal regions but not in the hinterland. CHS with an average 378 students and smaller GSS cannot attract qualified teachers, and prepare students to be competitive at CXC.

The better performing GSS at the CXC averaged more than 700 students, averaged 90% student attendance and had more than 60% trained teachers¹⁵. Larger GSS can achieve efficiencies in larger class size, better student/teacher ratios, attract qualified teachers and can form viable classes to offer a wider range of CXC subjects;

- (2) **Redirect funds in regional budgets**¹⁶ (using apparent “savings” in employing unqualified/untrained teachers) to fund retention and upgrading of existing teachers, attract new teachers, improve student attendance, achieve more students completing Grade 11 and presenting for CXC, and achieve better secondary school outcomes (or graduating with a diploma);
- (3) **Reduce regional differences** between hinterland, rural/coastal and urban/ coastal regions, and implement strategies to improve male learning outcomes and reduce gender differences; and

¹⁵ See Table 1.4

¹⁶ See Tables 6.8-6.9

- (4) **Achieve some balance between construction of new schools and increased recurrent investments** in upgrading, attracting and retaining qualified teachers to improve efficiency and quality student outcomes. Quality student outcomes delivered to the larger number of students can justify investment in new facilities.

The following diagram presents the performance in Section III and IV, and Section V Recommendations as a matrix which provides a framework to review effectiveness of USE 2002-2007 policy as a guide to USE 2008-2012 policy. These recommendations offer a coherent response to improving performance in the areas identified from this review of USE in Guyana.

Performance and Recommendation Matrix

Findings on USE Performance	Recommended Strategies to achieve USE			
	Improve GSS viability, with increased enrollment	Redirect funds in Regional Budgets	Reduce regional (and gender) differences in outcomes	Achieve capital and recurrent expenditure balance
Primary to Secondary Transition	Create GSS with better offering to attract more Primary students	Strengthen basic reading and math skills so more students succeed	Review SSEE age limit so that all able students can attend a GSS	Provide more <i>quality</i> GSS student places
Grades 7-8 Repetition	Create larger GSS to encourage progress to the next grade	Strengthen basic language/math skills so more GSS students can succeed	Improve Primary outcomes so that repetition is minimized	Use available student places for quality learning (not repetition)
Grade 11 Retention	Create GSS with better offering to retain students	Give priority to reinforcing basic language/math competencies	Encourage progress to next grade by reducing male repetition	Use available student places so more students can progress to the next grade
Student attendance	Create quality GSS learning for better attendance	Make better attendance a strategic target for all schools	Adjust school year to improve attendance	Develop school facilities to attract /retain students
Teacher qualifications /competency	Improve teacher skill so that all GSS focus on quality learning	Give priority to funds to attract qualified teachers	Use incentives to attract good teachers	Improve quality of teaching and learning
Teacher attrition and turn-over	Create larger GSS to retain teachers	Use funds to minimize loss of qualified teachers	Monitor/review FTI impact of investment in teacher housing	
CXC exam candidature	Create larger GSS for both better performance in core subjects and subject choice	Use funds to achieve at least Grade III passes in core subjects	Use better core CXC outcomes so rural/ Hinterland schools have more students and subject choice	Give equal weight to individual excellence and achieving Grade III passes in five subjects
Curriculum options	Expand elective subject offering after success in core subjects	Offer broader curriculum where it is feasible	Larger hinterland /rural GSS can offer more choice	Invest in facilities which promote quality and choice

Chapter 1: Current Status of Secondary Education in Guyana

1.1 This Chapter reviews recent performance of public secondary schools in Guyana against the Policy on Universal Secondary Education (2002), and broad trends evident in the annual Statistical Digests and unpublished data. The USE 2003-2007 Strategic Plan had six objectives, and Guyana has achieved the following outcomes:

USE OBJECTIVE	REPORTED OUTCOMES
1) 75% of primary school leavers will have access to a five-year secondary education program	<ul style="list-style-type: none"> Insufficient students complete Grade 6 with the learning competencies required to succeed in GSS and CXC. Grade 7 transition is reported at 93% (including Primary Tops but excluding Grade 7 repeats), but apparent attrition in Grades 8 and 9 suggest that only GSS students are likely to complete 5 years. Grade 11 completion calculated as 38% of Grade 7 intake in 2001/02 (Males 31.5% and Females 45.6%).
2) 25%-40% of primary school leavers will have access to the GTEE-Basic Competency Certificate Program	<ul style="list-style-type: none"> Students in Primary Tops unlikely to progression to GSS (and CXC) and located in small communities without access to an alternative Basic Competency Program. Students in CHS in Georgetown and regional centers may have “access” to technical subjects but have very poor attendance. Small GSS cannot offer viable technical subjects, have difficulty attracting qualified teachers and Industrial Training Centers and Technical Institutes cannot provide alternative pathways.
3) 35% of secondary school leavers, after 5 years of secondary education will have achieved CXC Grades 1-3 General Proficiency in Math.	<ul style="list-style-type: none"> 20-25% of CXC candidates achieve Grade 1-3 Math, but more students drop-out of secondary schools well before Grade 11.
4) 40% of secondary school leavers, after five years of secondary education will have achieved CXC Grade 1-3 General Proficiency in five subjects.	<ul style="list-style-type: none"> NCERD publishes CXC “subject” entry data and Grades but no analysis of numbers of candidates achieving Grade 1-3 in five subjects. (Analysis is recommended in Chapter 4). No CHS students presented CXC subjects in 2007 (unless they had transferred to a GSS¹⁷).
5) Conversion of the remaining Community High Schools to General Secondary Schools.	<ul style="list-style-type: none"> Most conversion occurred before the 2003-2007 USE Plan. GEAP Project funded consolidated of CHS at Wisburg (Region 10). Seven of the 24 CHS in 2005/06 are located in Georgetown (Region 11), and another 6 in Region 4.
6) Establishment of discrete General Secondary Schools by amalgamation of clusters of Primary Tops.	<ul style="list-style-type: none"> Half the 240 Primary Tops in 2005/06 are located in the Hinterland (Regions 1, 7, 8 & 9) where opportunities for amalgamation are limited. Different strategies are required to deliver quality secondary education for hinterland students. Amalgamation remains possible in some lowland/coastal regions

1.2 Of the wide range of observations presented to senior Ministry officers on 13 December 2007 and refined for a presentation to the Minister on 19 December 2007¹⁸, this Review of secondary education urges Guyana to consider four strategic options in developing its USE strategy for 2008-2012.

¹⁷The “status” of Cove and John School was unclear.

¹⁸See Attachments B and C.

Four Strategic Options for USE 2008-2012

- 1.3 The decline in the status and quality of education in Guyana did not occur in the last five years NOR can any strategic plan reverse the decline by 2012 (or some longer term target). The challenge is to identify those strategic investments which arrest decline and provide prospect for future improvement across the four elements – capacity, motivation, quality and facilities.
- **Achieving quality primary education outcomes**, especially performance in language, literacy and numeracy, are the foundation for universal secondary education;
 - **Reducing the apparent “drop out”** from schooling during the transition from primary to secondary and between Grade 7 and Grade 9, through a more flexible/modular curriculum which combines core competencies with practical skills which motivate less willing “learners” and encourages improved attendance;
 - **Improving competencies of existing teachers**, through shorter courses in subject content and teaching methodology, which may count as credit towards training and a formal teaching qualification, a post-secondary diploma or university degree;
 - **Achieving some balance between recurrent funding to improve and sustain quality and capital funding for the construction of new schools.** Without better primary outcomes, more motivated learners and better teaching, new school construction may be responding to the symptoms rather than the causes of poor secondary education.
- 1.4 **Looking beyond 2012**, the USE 2008-2012 Strategic Plan should seek an appropriate balance across these four outcomes. Taken separately, each option has merit, and each should demonstrate some success. As discussed in **Chapter 5**, increasing the supply (and quality) of secondary school places has not met the other quality outcomes. The physical conditions of existing schools (especially Primary Tops and Community High Schools) could justify construction of new schools, but relocating students from inferior to better facilities does not increase overall participation, nor does it improve the quality of learning without the other three conditions.
- 1.5 If the general community equates new buildings with better teaching and learning, and this encourages them to have their children continue in secondary school, the motivational impact should not be understated. School Improvement Plans (SIP) and community initiatives introduced through SSRP, GEAP and BEAMS help reinforce this community impact. Capital investment in buildings and textbooks cannot guarantee a better education for more children unless the secondary schools are staffed by trained and qualified teachers with sufficient command of the subject content to prepare all children for CXC in Year 11.
- 1.7 Different scenarios are presented in **Chapter 7**, draw on both recurrent and capital funds, but may take longer to demonstrate student learning benefits. Most of USE achievements in 2003-2007 were an outcome of SSRP and GEAP activity, and BEAMS and the EFA Fast Track Initiative (FTI) are contributing to achievements in 2008-2012. New capital funding to consolidate Primary Tops and upgrade CHS/GSS facilities will contribute to USE outcomes beyond 2012.

Trends in Secondary Enrollment

- 1.8 **Table 1.1** shows achievements over the past decade to upgrade CHS to GSS, including the absorption of Primary “Tops”. The SSRP, GEAP and BEAMS Projects assisted the Government in this move towards a quality secondary education system. Total secondary enrollment in public schools has fluctuated between 61,000 and 67,000 over the decade.

Table 1.1 Public Schools and Enrollment by Type of School, 1995/96 to 2005/06

Schools	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Primary	420	420	426	424	428	438	437	440	440	440	442
P.Tops	311	311	312	310	305	284	276	276	263	243	244
CHS	37	37	36	35	33	24	24	24	24	24	24
GSS	65	67	68	69	70	79	81	82	82	82	82
Students	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Ptops	15,056	13,439	13,162	12,376	12,653	11,267	10,531	10,170	9,916	10,133	10,300
CHS	13,294	14,083	12,421	12,764	13,787	10,369	10,187	9,294	9,326	9,202	9,256
GSS	35,015	34,521	35,670	36,776	36,055	43,526	43,873	42,960	46,149	46,303	47,585
Secondary	63,365	62,043	61,253	61,916	62,495	65,162	64,591	62,424	65,391	65,638	67,141
GSS%Secondary	55.3%	55.6%	58.2%	59.4%	57.7%	66.8%	67.9%	68.8%	70.6%	70.5%	70.9%

Source: Ministry of Education Annual Statistical Digests (MOE 1995-2006.xls)

- 1.9 The GSS share of public secondary enrollment has increased from 55.3% in 1995/96 to 70.9% in 2005/06 – with a major increase in 2000/01. Achievements represent some improved access to quality education:
- ③ improved net enrollment rates – especially in remote Regions and by gender,
 - ③ more children completing primary grades,
 - ③ student achievements in the Secondary School Entrance Examination (SSEE),
 - ③ transition from primary to secondary grades;
 - ③ student achievements in Caribbean Secondary Education Examination (CSEC);
 - ③ Training, appointment, retention and retraining of teachers (process measures which contribute to student learning outcomes),
 - ③ through the construction of new schools and classrooms,
 - ③ rehabilitation of existing schools/classrooms,
 - ③ average enrollment (“school size”), students per class (“class size”) and students per (qualified/trained) teacher (STR) are measures of system efficiency, and
 - ③ expenditure per student as a measure of public commitment to education.
- 1.10 Not all of the above achievements are “measurable”, due to lags in reporting and processing statistical data, incomplete data, and in the definition and interpretation of some of these measures. Other measures such as repetition and drop out are part of the school process and subsumed in measures of student progression.
- 1.11 In comparison with other Caribbean countries, Guyana does not perform as well. In a cross-country comparison using 2000 data, *Monitoring educational performance in the Caribbean*¹⁹ performance in primary grades is comparable but Guyana’s performance in secondary falls behind most other countries. Survival to Grade 11 was reported at 34% (of the school entry cohort) – 40% for female students and only 28% for males.

¹⁹ World Bank Report 24337, 2003: pages 34-35 and Annex 2 page 78. See **Chapter 4** below (4.61-4.65)

- 1.12 Guyana has been successful in enrolling more children of secondary school age, but that success has not (yet) resulted in a greater proportion of Grade 7 students completing Grade 11 with a quality education. Problems of access and (income) poverty in hinterland areas explain part of continuing this under-performance. In Guyana, this is compounded by urban poverty, many “out-of-school” males of school age, and a potentially self-fulfilling culture of hopelessness.
- 1.13 About the same time that Guyana adopted its “Universal Secondary Education” policy, Jamaica developed its second Reform of Secondary Education (ROSE II) Project – with a focus on youth “at risk”²⁰. There is a potential contradiction in many education strategies in that keeping more children in school longer will fail if those children are unable, under-prepared and unwilling to learn.
- 1.14 Making education “compulsory” should be unnecessary if schools offer a relevant and quality education. If reluctant learners are compelled to attend school (with fines and penalties), they are more likely to be behavioral problems and more likely to be suspended or expelled. School systems which measure success in the number of CXC passes and focus on the “survivors” to upper secondary grades are at risk of “failing” the majority of youth. High rates of repetition are discussed elsewhere in this review – repetition increases pressure on learning places, on teaching resources and increase costs of education without demonstrable gains in learning outcomes and progression to further levels of education.
- 1.15 **Fifteen measures:** This review uses existing MOE data to identify 15 measures²¹ which summarize the current situation in secondary education, and could guide the Ministry in its strategic choices. If performance on a measure is acceptable, this should be an indicator of USE success. If performance is unacceptable, the measure should suggest USE strategies to improve performance. A distinction should be drawn between “measures” of education process outcomes and an acceptable “standard” of performance. Measures of current performance against the “standard” would provide the Ministry (and Regional Departments) with performance “indicators”.

Fifteen measures of Education in Guyana	
1	Population aged 6-11 years (2002 Census and 2007 estimate)
2	Primary survival to Grade 6 (Grade 6 as %Grade 1 in 1999/2000)
3	Primary teachers trained (percentage, 2004/05)
4	Secondary Schools Entrance Exams (percentage Grade 5, 2004/05)
5	SSEE mean scores in Math and English (2007)
6	Primary/Secondary transition , Grade 7 as %Grade 6
7	Population aged 12-16 (2002 Census and 2007 estimate)
8	General Secondary Schools (GSS) as percent Secondary enrollment
9	Mean enrollment per GSS (“size” and number of schools)
10	Secondary teachers trained (percentage, 2005/06)
11	Secondary student attendance (percent attendance, by gender)
12	Attrition Grade 7-9, by gender (Grade 9 as percentage Grade 7)
13	Secondary survival to Grade 11 (Grade 11 as percentage Grade 7 in 2001/02)
14	Caribbean Examination results (percentage CXC candidates at Level I-III)
15	Secondary Expenditure and expenditure per secondary student

²⁰ World Bank Project Appraisal PAD Report 24783-JM pages 7-8.

²¹ See **Attachment D1** notes and definitions

- 1.16 Process outcomes are presented as a sequence of measures, so that USE strategy can target under-performance. Measures 1-5 (shaded green) are Primary Education outcomes which should contribute to quality secondary education. Measure 2 differs from the conventional measure of primary completion, and measures 6, 12 and 13 are used in **Chapters 2 and 4** to demonstrate where Guyana needs to improve performance if USE is to be achieved.
- 1.17 Improving student attendance (measure 11) and reducing student “attrition” (measure 12) are complementary strategies, provided that all continuing students have the core competencies for learning. The latter is both a curriculum and a teacher competency issue discussed in **Chapters 3 and 4**.
- 1.18 Available data for each measure are presented for Guyana by Region, with regions grouped as Hinterland/Riverine (Regions 1, 7, 8, 9), as Rural/Coastal (Regions 2, 5, 6, 10), and Urban/Coastal (Region 11, Georgetown, and adjacent Regions 3 and 4). This arbitrary grouping attempts to assist comparisons and contrasts.
- 1.19 Enrollments are a function of the school age population discussed in Chapter 2. Measure 1 shows the population aged 6-11 years as broadly stable from the 2002 Census to 2007, but enrollments in the hinterland regions are growing while the coastal areas are stable or declining and the proportion of students who complete 6 years primary school. The latter measure differs from the “completion” indicator used by UNESCO and other international agencies, which relate Grade 6 enrollment to the number of children of official school-age in the last year of primary (which in Guyana would be 11 years).
- 1.20 The simpler Grade 6/Grade 1 ratio demonstrated in **Table 1.2** would allow each Regional Department and individual school communities can “see” their performance without relying on an abstract measure and out-dated estimates of the school age population.

Table 1.2: Primary Education Survival to Grade 6 (2004/05)

MEASURE 2: SURVIVAL TO GRADE 6	Guyana Total	Hinterland Regions 1789	Rural/Coastal Regions 256 10	Urban/Coastal Regions 34 11
Grade 1 enrolled (1999/2000)	19,495	2,166	7,222	10,107
Grade 6 enrolled (2004/05)	17,606	1,889	6,505	9,212
Measure 2 (Grade 6/Grade 1)	90.3%	87.2%	90.1%	91.1%
Males	88.2%	85.8%	87.5%	89.2%
Females	92.6%	88.9%	92.8%	93.3%

Source: MONE Statistical Digests

- 1.21 With nine out of ten children who enter Grade 1 completing Grade 6 (and 8.6 males in Hinterland regions), **universal primary education (UPE) is a foundation for universal secondary education**. The quality of primary completion is important, with Measure 3 (Primary Teachers trained), Measure 4 (Students sitting SSEE) and Measure 5 (SSEE results) offering possible measures of primary education quality. Six out of ten Primary teachers trained is a major threat to quality USE, especially in the hinterland where only one-in-three primary teachers are trained.
- 1.22 Fewer hinterland primary students undertook SSEE (85.6% versus an average 89-90% in coastal regions), with mean Math and English scores only 72% and 75% of the national averages. As discussed with other measures, dispersed population in hinterland regions present problems for operating and staffing primary schools, but these schools require even greater resources per student if Guyana is to achieve universal quality secondary education for all children. Bringing hinterland students to the national average will not be sufficient – the national averages are still below a level which Guyana should accept.

- 1.23 Central to this review of USE performance in Guyana are questions about the quality of secondary education delivered through Primary Tops and Community High Schools. USE 2002-2007 objectives correctly identified strategies to consolidate primary tops into GSS and to convert CHS to GSS so that other USE outcome objectives could be achieved.
- 1.24 In this review of data gathered late in 2007, an additional measure (or a variation on measures 8 and 9) - **GSS enrollment as a percentage of Primary enrollment** - may assist the Ministry and Regional Education Departments measure their USE “shortfall” and identify strategies to achieve USE. In **Table 1.3**, total secondary students were 57.8% of Primary students in Guyana in 2004/05, with female students 59.3% compared with 56% for males, with little apparent regional variation. The tan shaded rows show a less satisfactory picture – only a quarter of Primary students in hinterland regions (R1, 7, 8&9) enroll in GSS in the same region.

Table 1.3 Secondary Enrollment as a Percentage of Primary Enrollment, 2004/05

		Regions 1,7,8&9	Regions 2,5,6&10	Regions 3,4&11	Guyana 2004/05
All Secondary students as a percentage of Primary students	F	52.8%	59.7%	60.6%	59.3%
	M	47.7%	56.3%	57.8%	56.0%
GSS students as a percentage of Primary students	F	28.4%	50.7%	43.1%	44.1%
	M	21.4%	43.2%	37.0%	37.3%

Source: MOE Statistical Digest Tables 22, 41A, 41B, 41C. See **Attachment D3**.

- 1.25 Students successful in SSEE are offered places in GSS in Georgetown, President’s College in Region 4 and better performing schools in Regions 2, 6 and 10. Georgetown averages 73% for Females and 65% for Males but this is overstated by Region 4 students who attend GSS in Georgetown. The combined Region 4 and Region 11 averages are 44.5% for females and 38.5% for males.
- 1.26 Fast Track Initiative (FTI) activities which improve access and participation in hinterland primary schools, and teacher training should improve learning outcomes, but Guyana will need to invest substantial resources if those gains are to be sustained into secondary grades. Table 1.3 indicates a need to increased GSS provision in hinterland regions. Transition from primary to secondary education (Measure 6) is discussed in more detail in **Chapter 2**.

Creating Viable Secondary Schools

- 1.27 With a small population dispersed across a large land area dissected by large rivers flowing into the Atlantic Ocean, secondary schooling in Guyana is characterized by many small secondary schools. In hinterland regions, there are almost as many students in Primary Tops as in GSS (and more boys in Tops than GSS). With an average about 43 students and few qualified and trained teachers, **small primary tops cannot offer a viable secondary education.**
- 1.28 Later chapters suggest that Guyana has three options for remote communities:
- ③ Staffing primary tops with qualified and trained teachers in Math and English so that students have skills to transfer to the nearest GSS in Grade 8 or Grade 9;
 - ③ Staffing primary tops with qualified and trained teachers in Math and English, as a “cluster” GSS where the most centrally located school provides itinerant specialist teachers in other subjects and specialist facilities for science and other subjects;
 - ③ Residential GSS provide quality educational and residential facilities to which remote Amerindian communities are happy for their children to attend.

- 1.29 **There is no “low cost” option** for the provision of a quality secondary education leading to enrollment to Grade 11 and CXC Grade I-III outcomes in at least five subjects.
- 1.30 The USE 2003-2008 objective to consolidate primary tops as GSS may be viable in more densely settled and accessible coastal communities but it is not feasible in hinterland areas. Community High Schools in lowland rural areas and in Georgetown do not offer quality secondary education leading to Grade 11 and CXC outcomes. Most CHS have fewer than 400 students and insufficient qualified and trained teachers. Upgrading CHS to GSS require fewer schools, with higher average enrollment and better qualified/trained teachers.
- 1.31 In addition to issues such as public expenditure per secondary student, which are common to many low income (and middle income) countries, the recurring issue in this review is **“What is a minimum viable secondary school?”** – defined not just as secondary student enrollment, but also whether the school delivers a “minimum viable secondary curriculum”. A parallel question about “minimum viable primary education” is outside the terms of reference for this review but is the foundation for effective secondary education.
- 1.32 The 2003-2007 USE policy assumed that “access to a five-year secondary education program” would be in a GSS. The distribution small schools suggests that viable GSS cannot be provided for all secondary students, and the implications for planning were discussed with senior officers in the Ministry and with the Minister.
- 1.33 With only GSS presenting CXC candidates, the structural challenge for Guyana is how to deliver viable, quality education *in GSS* to all students. Half of 348 secondary schools (including secondary classes in Primary Tops) in **Table 1.4** have fewer than 300 students. Most Primary Tops have <100 students. Hinterland (R1, 7, 8&9) has a total of 10 CHS or GSS, and only two with 500 or more students. Most CHS are in Regions 3, 4&11 with 400-600 students. Regions 2, 5, 6&10 have 23 GSS with more than 600 students.

Table 1.4 Secondary Schools by Enrollment, Type and Region, 2005/06

Size	Schools	Teachers /School	Percent Female	percent Attendance	Student/Teacher	Percent Trained	Primary Tops			CHS			GSS		
							R1,7,8&9	R2,5,6&10	R3,4&11	R1,7,8&9	R2,5,6&10	R3,4&11	R1,7,8&9	R2,5,6&10	R3,4&11
1	219	1	43.7	63.0	17.7	42.3	111	64	42		1	1			
101	21	7	42.0	53.3	22.1	49.6	3	7	7		1		1	1	1
201	14	12	43.7	59.3	20.2	46.3		2	4	1	1	3	1	1	1
301	17	19	50.5	68.7	19.1	54.1		2			1	3	2	3	6
401	17	24	50.9	68.5	18.6	53.1						6	3	3	5
501	21	27	50.4	70.9	20.1	53.4				1		5		3	12
601	13	33	56.3	80.5	19.6	60.9								9	4
701	16	33	54.1	76.8	22.0	55.0								8	8
801	5	38	54.7	84.2	22.3	64.5								2	3
901	3	38	52.9	81.8	24.6	61.7								2	1
1001	2	41	55.0	67.5	25.9	81.7							1	1	

Source: MOE data (Gy0506s_size2008.sql)

- 1.34 Primary Tops and the smallest secondary schools have more male students (<45% female), low attendance and less than half the teachers are trained. Schools with 300-600 students have 50% female students, about 65-70% attendance and 50-55% trained teachers. GSS with 600+ students have about 55% female students, more than 75% attendance, higher ratio of students to teachers and about 60% trained teachers.

- 1.35 There are apparent efficiency benefits in larger schools – higher ratios of students per teacher in Table 1.4 and more specialist subject teachers²².
- 1.36 **Table 1.5** reports NCERD data for 85 Guyana schools reporting CXC entries in 2007 against Grade 11 enrollment (in 2005/06) by total secondary enrollment. Only 5 out of 254 “schools” with less than 300 had students entered in CXC in 2007. Larger schools with more than 500 secondary students averaged 29% Level 1 or 2 outcomes and 61% had Level 3 passes or higher.

Table 1.5 Guyana Secondary Schools by Size 2005/06 and CXC Entries in 2007

Enrolled (size)	Schools with CXC entries	Total Enrolled 2005/06	CXC Entries 2007	Grade 11 as % Enrol	L1, L2 Percent Entries	L3% Entry	L4% Entry	Mean Entries/ Grade 11
<300	5	1061	483	9%	14%	33%	26%	5.0
301-500	26	10470	13111	11%	28%	27%	21%	6.4
501+	54	37646	22642	13%	29%	32%	22%	5.8
TOTAL	85	49,177	36,236	13%	29%	31%	22%	5.9

Source: MOE and NCERD data. (excludes one school <300 with no 2005/06 enrollment)

- 1.37 All 49 schools with 600+ secondary students in Table 1.5 are GSS, as are 15/21 schools with 501-600 students. The hinterland regions in **Table 1.6** have only one GSS with more than 600 students²³. Of the rural coastal regions, 22/33 schools are GSS with 600+ students, while 26/43 schools in Georgetown and adjacent regions 3 and 4 are GSS.

Table 1.6 Guyana Secondary Schools by “Region” and CXC Entries in 2007

Regions	Schools with CXC entries	Total Enrolled 2005/06	CXC Entries 2007	Grade 11 as % Enrol	L1, L2 Percent Entries	L3% Entry	L4% Entry	Mean Entries/ Grade 11
R1, 7, 8, 9	9	3729	2061	11.2%	15%	31%	25%	5.0
R2, 5, 6, 10	33	21038	15231	12.5%	25%	31%	23%	5.8
R3, 4, 11	43	24410	18944	12.7%	33%	31%	20%	6.1
TOTAL (a)	85	49177	36236	12.5%	29%	31%	22%	5.9

Source: MOE and NCERD data. (a) excludes one school <300 with no 2005/06 enrollment.

- 1.38 Tables 1.4-1.6 support the USE strategy to increase GSS student enrollment, especially if students are in GSS with 600+ students, with high attendance rates, a higher proportion of trained teachers and better CXC outcomes. The other part of the USE strategy requires a reduction in secondary enrollments in Primary Tops and the upgrading of CHS to GSS.
- 1.39 **Figure 1.1** uses available performance measures to summarize the situation in Guyana. The “tan” colored cells represent “progress” to the next step in the education system. The values on the arrow show the combined result of each step – If almost 97% of children of primary age enroll, and 88% complete primary school, this is 85.5% (=0.9670 x 0.8840). With 93% progression to secondary, 79.7% “survive to Grade 7, but only 38% progress to Grade 11, reducing participation in Grade 11 to approximately 30% of the cohort.

²² See Tables 3.3 and 3.4

²³ Bartica GSS has more than 1,000 students (but a second school is under construction)

Figure 1.1: Summary of Available Performance Measures for Guyana

(A) →	(A*B) →	(B*C) →	(C*D) →	= (E)
(A) 96.7% Primary net enrolment rate	0.9670			24
Teachers, qualifications, retraining	(B) 88.4% Grade 6 Completion Rate	0.8548		
Expenditure per Primary Student	Non-salary expenditure	(C) 92.3% Progression to Secondary (includesTops)	0.7890	
		Teacher qualifications, retraining	(D) 38.3% Secondary Completion Rate	0.3022 (M 0.2395)
		Expenditure per Secondary Student	Textbooks, non salary expenditure	(E) Secondary CXC outcomes Math 41.6% English 72.7%

1.40 **Table 1.7** presents regional differences on measures (A)-(E) in **Figure 1.1**, together with gender differences where data are reported. These differences are discussed in Chapters 2-4, together with more disturbing data on student attendance. Seasonal variations in attendance are to be expected, but fewer than one-in-four males appear to reach Grade 11.

Table 1.7 Regional and Gender Differences on Measures A-D

Measures	Primary Net Enrollment Rate (A)	Grade 6 Survival Rate (B)	Progression to Secondary (C)	Grade 11 Completion Rate (D)	Survival to Grade 11 (A*B*C*D)
R1,7,8,9	91.6%	90.6%	105.9%	23.2%	20.4%
R2,5,6,10	96.5%	86.1%	96.4%	46.9%	37.6%
R3,4,11	96.7%	89.8%	86.8%	36.0%	27.1%
Females	96.2%	89.6%	93.8%	45.6%	36.9%
Males	95.7%	87.4%	90.9%	31.5%	23.9%

1.41 **USE is a comprehensive policy, but it should not be seen as a single plan.** Different student, teacher and school needs may require each of the 11 regions to have a separate plan – with some common elements. The test for any Regional Plan will be whether it delivers the best educational outcomes for all children – access to a functioning school with good facilities, high student attendance and fully staffed by qualified teachers.

- ③ **Regions 17&9** (Hinterland) have many Primary Tops, one Community HS, and few GSS. With the exception of Bartica GSS in Region 7, GSS tend to be small, and depend on residential dormitories. Mainly Amerindian communities need to identify the best way of bringing secondary teachers to the community, taking secondary students to a central location, or some mixture of these strategies.

²⁴ Tan colored cells are measurable outcomes of student progress through the school system. The green cells are measurable recurrent inputs to the school system (A) Census 2002 data for 6-11 year-olds; (B) Grade6 (2005/06)/Grade1 (2000/01); (C) Note the difference between 93.2% (G7-Repeats)/Grade6 and analysis based on students aged 13/14 over aged 9/10 four years earlier. Older children may not be in secondary; (D) G11/G7 four years earlier; (E) NCERD (Sept 2007) modified from GEAP analysis. Seasonal variations in student attendance require careful analysis, as do measures of teacher attendance.

- ③ **Regions 5 and 6** in southern Guyana have many Primary Tops, a network of GSS, but few CHS. Communities should look for strategies to strengthen/consolidate Tops at the same time that GSS performance and outcomes are strengthened. **Regions 2 and 10** have some of each type of secondary school. Communities could borrow parts of the Hinterland strategy and parts of the southern Guyana strategy. The opening of Wisburg GSS could be a focus for other improvements in secondary education in Region 10.
- ③ **Regions 3 and 4** have many Tops, more CHS and different needs because of their proximity to Georgetown. Options could include transforming CHS into GSS, absorbing nearby Primary Tops or merging with an existing GSS. **Region 11** (Georgetown) is in a separate class, with an ill-defined private school sector which competes for students and makes planning public education less certain. Georgetown could be part of a Region 4+11 strategy - or even a Regions 3+4+11 strategy.

1.39 USE Outcomes 1 (75% access to Secondary), 5 (CHS → GSS conversion) and 6 (Amalgamating Primary Tops → GSS) are the major focus of this Review. Outcomes 2-4 depend on curriculum reforms which need to be put in place to parallel universal access to secondary education. All six policies depend on the availability of qualified teachers, extensive retraining of current teachers, and the annual recurrent funding to employ (and retain) teachers.

1.40 Policy issues confronting the Ministry include:

Has participation in Secondary education increased, (in rural schools and urban schools)?	Yes, marginally.
Has the standard of student performance on SSEE increased?	More students sit SSEE examinations, but mean performance has declined.
Has the curriculum offered to secondary students been broadened?	See Chapter 4.
Has the quality of teaching (and qualification of teachers) improved?	See Chapter 3.
Has average secondary student attendance increased?	Yes, in CHS, but male attendance 55% in Primary Tops and 60% in CHS.
Have student/teacher ratios changed?	Yes, in GSS with increased enrollment.
Has the efficiency of secondary school operations improved?	Yes, increased enrollment absorbed in the existing schools, and the average GSS enrollment increased from 542 in 2001/02 to 580 in 2005/06.
Has real expenditure per student improved?	See Chapter 5.
Has Guyana performance on Caribbean Examinations improved?	NCERD data show increased CXC candidature and 70% English pass rates. Math pass rates remain around 40%.
Have Community High Schools been upgraded to General Secondary Schools?	Nine GSS opened in 2000/01, with 9 fewer CHS. Numbers/total enrollment have been unchanged since 2002/03.
Have Primary Tops been consolidated into General Secondary Schools?	The major change occurred in 2000/01. There were 20 fewer Tops in 2004/05 with no reduction in total enrollment.

- 1.39 The last two issues relate to the specific objectives of the USE Policy Paper in 2002. School improvement plans, teacher training/retraining and regional centers (under SSRP, GEAP, BEAMS and GBET) supported these Government objectives. Sustaining initiatives introduced by externally-supported projects should be central to MOE planning for USE 2008-2012. Capital investment such as the Wisburg Secondary School is tangible and necessary, but the model will only be effective if the curriculum, teaching and support services are in place to deliver better secondary school outcomes for all students.
- 1.40 **Achieving USE requires better primary school outcomes and better secondary teacher knowledge and skills.** Governments and the community can “see” new school construction – teaching quality and learning outcomes are less visible, but require recurrent funding to realize the benefits of new construction.
- 1.41 On 19 December 2007, the Minister for Education, Mr. Shaik Baksh, indicated that a national meeting on teacher education would be held early in 2008. Changing pre-service education is a long-term strategy – it cannot provide an immediate benefit in new teachers with the skills and flexibility required, nor will it improve the knowledge, skills and competency of the majority of unqualified/ untrained teachers already in the system.
- 1.42 One option could be reducing the duration of pre-service primary teacher education to two years, followed by a two term “internship” – the first term teaching with a qualified teacher/mentor, the term semester having sole responsibility for the class while the qualified teacher undertakes mentoring and knowledge/skills development of other teachers on the school staff (and nearby schools). After two terms internship, the temporary qualified teacher returns to complete a final term at College/University before certification as a primary teacher. In systems already understaffed, teachers cannot undertake in-service training if their classes have no replacement – this model could meet both needs – giving real teaching experience to the new teacher and creating time for upgrading of existing teachers. Seasonal variations in student attendance may offer another opportunity for teacher upgrading without loss of student learning time.
- 1.43 There may be a parallel between “preventative” maintenance of school facilities and investment in professional development to maintain the quality of the teaching service. At some point, it can be decided that no further maintenance of a building is justified and a new building is required. Teachers are different to buildings, but ongoing in-service training is “preventative” maintenance!
- 1.44 In systems short of teachers, more resources tend to be spent on pre-service training rather than in-service. Guyana may have to reverse that policy – upgrading, qualifying, certifying, reinvigorating existing teachers will strengthen morale and encourage more teachers to remain in the profession, especially in difficult to staff locations. By contrast, even if the pre-service teacher training curriculum was changed in 2008, for the academic year 2008/09, the first graduates would not enter teaching until school year 2011/12 – when the new strategic plan ends.

Chapter 2: Improving Access, Participation and Attendance

- 2.1 The policy on Universal Secondary Education (2002) sought to ensure that, by 2010, 75% of primary school leavers would have access to a five year secondary education program, with 25-40% having access to the Basic Competency Certificate Program and 40% of secondary school leavers achieving Grade 1-3 proficiency in five subjects at the Caribbean Examination Commission (CXC) examinations. The USE Policy sought to improve access, participation and student outcomes by the conversion of the remaining Community High Schools (CHS) to General Secondary Schools (GSS) and the establishment of discrete GSS by amalgamation of clusters of Primary Tops (primary schools with secondary classes).
- 2.2 This chapter examines national trends in school-age population, enrollment, secondary school entry examination (SSEE) candidature, apparent transition from primary to secondary schools, repetition in secondary grades, and reported student attendance. Differences by gender, between riverine/hinterland regions and coastal regions and by “size” of school were examined where recent data were available. The “school size” issue recurs in later chapters, with its effect on the number and quality/qualifications of secondary teachers, teacher attrition, the range of subjects that small schools can offer, student attendance, completion rates to Grade 11 and CXC examination results for those students who complete Grade 11.
- 2.3 **Students enrolled in General Secondary Schools:** The major change over the past decade has been an increased proportion of students enrolled in public GSS which offer the full five years of secondary schooling leading to CXC examinations at Grade 11. The increase from 55.3% GSS students in 1995/96 to 70.9% in 2005/06 is one measure of USE progress. In **Table 2.1**, aggregate secondary enrollment fluctuated between 61,253 in 1997/98 and 67,141 in 2005/06 (the highest level over the past decade). The major shift occurred in 2000/01, when the GSS share increased from 57.7% to 66.8%. GSS enrollment in 200/01 increased by 7,471 with CHS declining 3,418 and primary tops by 1,386.

Table 2.1 Public Schools and Enrollment by Type of School, 1995/96 to 2005/06

School Type	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Nursery	288	288	305	334	320	324	322	322	323	325	325
Primary	420	420	426	424	428	438	437	440	440	440	442
Primary Tops	311	311	312	310	305	284	276	276	263	243	244
CHS	37	37	36	35	33	24	24	24	24	24	24
GSS	65	67	68	69	70	79	81	82	82	82	82
Public Schools	1121	1123	1147	1172	1156	1149	1140	1144	1132	1114	1117
Students	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
Nursery	29,306	30,736	33,366	36,212	36,955	35,558	34,886	33,006	32,226	31,730	30,136
Primary	100,252	102,000	100,998	105,320	105,800	108,311	109,005	110,776	115,172	113,971	110,828
Primary Tops	15,056	13,439	13,162	12,376	12,653	11,267	10,531	10,170	9,916	10,133	10,300
CHS	13,294	14,083	12,421	12,764	13,787	10,369	10,187	9,294	9,326	9,202	9,256
GSS	35,015	34,521	35,670	36,776	36,055	43,526	43,873	42,960	46,149	46,303	47,585
Secondary	63,365	62,043	61,253	61,916	62,495	65,162	64,591	62,424	65,391	65,638	67,141
Public School Enrollment	192,923	194,779	195,617	203,448	205,250	209,031	208,482	206,206	212,789	211,339	208,105
GSS%Secondary	55.3%	55.6%	58.2%	59.4%	57.7%	66.8%	67.9%	68.8%	70.6%	70.5%	70.9%

Source: Ministry of Education Annual Statistical Digests (MOE 1995-2006.xls)

2.4 Many education systems report increasing enrollment as a measure of success, but the enrollment may be distorted by students repeating grades. International comparisons use “gross enrollment rates” (GER²⁵) which link the number enrolled to school-age population. **Table 2.2** consolidates Guyana data on public school enrollment by age for the past five years²⁶ to show the following GER:

- Nursery schools: 88.3% of the population²⁷ aged 4-5 (in 2005/06)
- Primary schools: enrollment equals 96.5% of population aged 6-11
- Secondary schools: enrollment equals 80.7% of population aged 12-16.

Note differences in reported age in annual schools data and in the population census – more 8 year-olds were enrolled in 2005/06 than the number of five year-olds at the 2002 Census.

2.5 The major application of **Table 2.2** is to demonstrate the progression by cohorts of 20,000 students through primary grades and apparent attrition from age 12. The increase in the number of 11 year-olds from around 15,000 in 2001/02 to almost 18,500 in 2005/06 is a “demographic effect” of the larger primary cohort and some of the USE initiatives.

Table 2.2: Enrollment in Guyana Public Schools by Age, 2001/02 to 2005/06

Age at Report	2001/02	2002/03	2003/04	2004/05	2005/06	Percent 2005/06 Enrolled	Enrolled as percent Population
<4	3574	3325	3976	3431	3308	1.6%	
4	15808	14664	14474	14399	14582	7.0%	89.5%
5	18041	18256	17472	16450	15857	7.6%	89.0%
6	19345	18385	19166	18065	16343	7.8%	93.2%
7	19633	19674	18636	18925	18174	8.7%	92.3%
8	18836	19993	19829	18534	18883	9.1%	102 %
9	17806	18259	20055	20011	18495	8.9%	98.2%
10	16455	17534	18353	19588	19196	9.2%	95.1%
11	15281	15563	17648	18353	18450	8.9%	91.9%
12	16405	14153	15654	15910	15541	7.5%	84.7%
13	14558	14126	13148	13419	13836	6.6%	80.3%
14	12669	12102	13057	12311	12616	6.1%	79.9%
15	9756	10838	10633	10894	10552	5.1%	68.0%
16	6456	6193	6976	6690	7945	3.8%	48.5%
>16	3859	3141	3712	4359	4637	2.2%	30.2%
Public	208,482	206,206	212,789	211,339	208,415	100%	
Nursery	34,886	33,006	32,226	31,730	30,136	14.5%	88.3%
Primary	109,005	110,776	115,172	113,971	110,828	53.2%	96.5%
Secondary	64,591	62,424	65,391	65,638	67,141	32.2%	80.7%

Source: Guyana MOE Statistical Digests (+draft 2005/06). Private school data are excluded.

2.6 The decline from 18,353 students aged 11 in 2004/05 to only 15,541 aged 12 in 2005/06 should be of greater concern, together with the loss of a further 2,000 students between age 12 and 13. From about 100% of 8 and 9 year-olds enrolled (see green shaded cells in **Table 2.2**), Guyana public schools lose about 5% per year at each age 10, 11, 12 and 13. **Effective USE sector planning should build upon an understanding of this process**

²⁵ GER is the number of students enrolled divided by the population in the relevant age-range. GER may be inflated by repetition. Net Enrollment Rate (NER) reduces the impact of repetition by expressing students in the relevant age-range as a percentage of the population.

²⁶ The Ministry of Education reports incomplete data on private schools and their enrollment.

²⁷ Children aged 1-2 at the September 2002 Census.

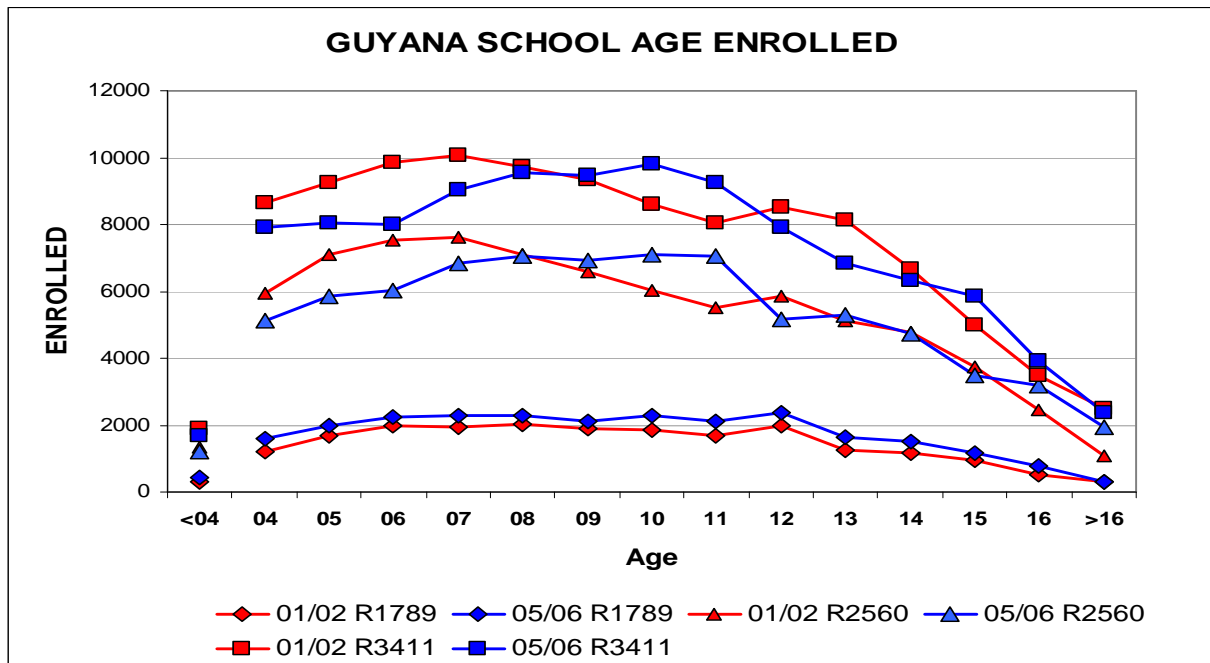
2.7 **Table 2.3** shows an emerging change in age-structure of public school enrollments from 2001/02 to 2005/06. Percentage of students in “primary” ages 6-8 has declined and those aged 10-11 increase.

2.8 Regional patterns in **Figure 2.2** show 2001/02 enrollment (red lines) and 2005/06 enrollment (blue lines). The hinterland regions (1, 7, 8 &9) have greater numbers enrolled at each age, while the more densely settled coastal regions including Georgetown (3, 4, 11²⁸) show fewer children enrolled aged 4-7 years and more children enrolled ages 10-11. Regions 2, 5, 6 &10 combine the coastal regions other than Georgetown and its two neighbors. This categorization generalizes patterns of population and enrollment, but is used elsewhere in this Review of USE to discuss access, participation and outcomes data.

Year	01/02	02/03	03/04	04/05	05/06
Age<4	1.7%	1.6%	1.9%	1.6%	1.6%
Age04	7.6%	7.1%	6.8%	6.8%	7.0%
Age05	8.7%	8.9%	8.2%	7.8%	7.6%
Age06	9.3%	8.9%	9.0%	8.5%	7.8%
Age07	9.4%	9.5%	8.8%	9.0%	8.7%
Age08	9.0%	9.7%	9.3%	8.8%	9.1%
Age09	8.5%	8.9%	9.4%	9.5%	8.9%
Age10	7.9%	8.5%	8.6%	9.3%	9.2%
Age11	7.3%	7.5%	8.3%	8.7%	8.9%
Age12	7.9%	6.9%	7.4%	7.5%	7.5%
Age13	7.0%	6.9%	6.2%	6.3%	6.6%
Age14	6.1%	5.9%	6.1%	5.8%	6.1%
Age15	4.7%	5.3%	5.0%	5.2%	5.1%
Age16	3.1%	3.0%	3.3%	3.2%	3.8%
Age>16	1.9%	1.5%	1.7%	2.1%	2.2%
TOTAL	100%	100%	100%	100%	100%

Source: Calculated from annual MOE Statistical Digests

Figure 2.2



2.9 The blue-lines in **Figure 2.2** (and the tan shaded cells in Tables 2.2 and 2.3) highlight this structural change in the school-age population. Fewer students aged 6-7 between 2000/01 and 2005/06 is a demographic effect, increased numbers aged 10-11 are a combined effect of demography and improved primary participation, but **the decline in each age group after age 11 is a major threat to achieving USE**. Improved primary completion rates and better teaching contribute to increasing numbers of Grade 6 students sitting the Secondary Schools Entrance Examination (see **Table 2.5** and **Figure 2.3** below).

③Regions 1, 7, 8 &9 average about 2,000 students in each primary age group and the **hinterland numbers enrolled have expanded for each age** over the period.

③Regions 2, 5, 6 &10 averaged 6,000-7,000 students in each primary age, but there are **fewer 5-7 year olds** and the number of 9-11 year-olds has increased.

③Regions 3, 4 &11 averaged 8,000-10,000 in each primary age, with **fewer aged 4-7**, and more aged 10-11.

2.10 **Primary completion rates** divide enrollment in the last year of Primary (Grade 6) by the number of children aged 11²⁹. **Table 2.4** reports 96% for both boys and girls in 2004/05. The hinterland regions averaged 92% for boys and 90% for girls. Performance is expected to improve through the Fast Track Initiative (FTI), but the hinterland regions account for 11% of total Guyana primary enrollment. Georgetown, Region 3 and 4 account for 52%. Primary Completion Rates should be used with care³⁰.

Table 2.4: Primary Completion Rates by Region, 2004-05

Region	2004-05			2002 Census			Primary		
	Enrolled Grade 6			Age 9 (=11 in 2004)			Completion Rate		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
R01	331	342	673	328	357	685	1.01	0.96	0.98
R02	598	591	1189	655	667	1322	0.91	0.89	0.90
R03	1153	1141	2294	1214	1210	2424	0.95	0.94	0.95
R04	1668	1664	3332	2041	2027	4068	0.82	0.82	0.82
R05	680	711	1391	650	699	1349	1.05	1.02	1.03
R06	1506	1496	3002	1539	1438	2977	0.98	1.04	1.01
R07	212	197	409	235	240	475	0.90	0.82	0.86
R08	101	95	196	157	115	272	0.64	0.83	0.72
R09	319	292	611	332	320	652	0.96	0.91	0.94
R10	454	469	923	549	543	1092	0.83	0.86	0.85
R11	1830	1756	3586	1548	1485	3033	1.18	1.18	1.18
Guyana	8852	8754	17606	9248	9101	18349	0.96	0.96	0.96
1,7,8,9	963	926	1889	1052	1032	2084	0.92	0.90	0.91
2,5,6,10	3238	3267	6505	3393	3347	6740	0.95	0.98	0.97
3,4,11	4651	4561	9212	4803	4722	9525	0.97	0.97	0.97
Guyana	8852	8754	17606	9248	9101	18349	0.96	0.96	0.96

Source: MOE Statistical Digest 2004-05; Population Census data, 2002

²⁹ Population aged 11 in 2004/05 assumed equal to population aged 9 years (September 2002 Census).

³⁰ This analysis of Guyana data examined the ratio of Grade 6 enrollment to Grade 1 enrollment as a proxy measure of Primary “completion”. See Table 1.2 and Attachment D3. The 17,606 students in Grade 6 in 2004/05 were 90.3% of the Grade 1 enrollment in 1999/2000. High grade repetition in Grade 1 may understate “completion”.

- 2.11 Single year of age estimates from a population census data become even less reliable each year after the census. Internal migration reduces further the reliability of regional measures. Many students living in Region 4 attend primary schools in Georgetown, inflating the Region 11 PCR to 118% and deflating the Region 4 PCR (82%). The combined Region 4+11 PCR was 97.3%.
- 2.12 The number of Grade 6 students completing the Secondary Schools Entrance Examination (SSEE)³¹ provides an alternative measure of primary completion, with numbers increasing in most Regions over the past decade. The Ministry identified a potential problem, where the maximum age at which a primary student can sit SSEE may exclude over-age students (mostly boys) from GSS. A review of the age limit on SSEE candidature appears necessary.
- 2.13 **Table 2.5** and **Figure 2.3** show how Region 4 (which includes Georgetown, shaded tan, up to 2006), with some 7,000 candidates, dominates SSEE - about 44% in 1996 and 40% in 2007. The combined Hinterland candidature (Regions 1, 7, 8&9, shaded light green) increased from 1,100 in 1996 to 1,900 candidates in 2007.

Table 2.5: Secondary Schools Entrance Examination Candidates by Region, 1996-2007

YEAR	R04	R06	R03	R05	R02	R10	R01	R09	R07	R08	Total
1996	6487	2423	1933	1085	920	827	339	290	354	155	14813
1997	6107	2370	1686	909	1018	773	259	308	283	138	13851
1998	6133	2227	1689	992	1049	777	260	306	291	137	13861
1999	6487	2423	1933	1085	920	827	339	290	354	155	14813
2000	6962	2502	2029	1147	1058	791	392	376	361	163	15781
2001	6748	2414	1946	1036	1056	811	401	378	346	240	15376
2002	6326	2336	1871	1111	959	798	358	409	351	173	14692
2003	6090	2414	1942	1046	1021	871	472	452	410	239	14957
2004	6668	2639	2165	1180	1154	1013	507	528	434	206	16494
2005	7239	2896	2243	1294	1176	1042	512	519	439	234	17594
2006	7500	3122	2445	1297	1322	1082	541	516	490	225	18540
2007	7011	3044	2212	1231	1167	989	675	508	476	221	17534

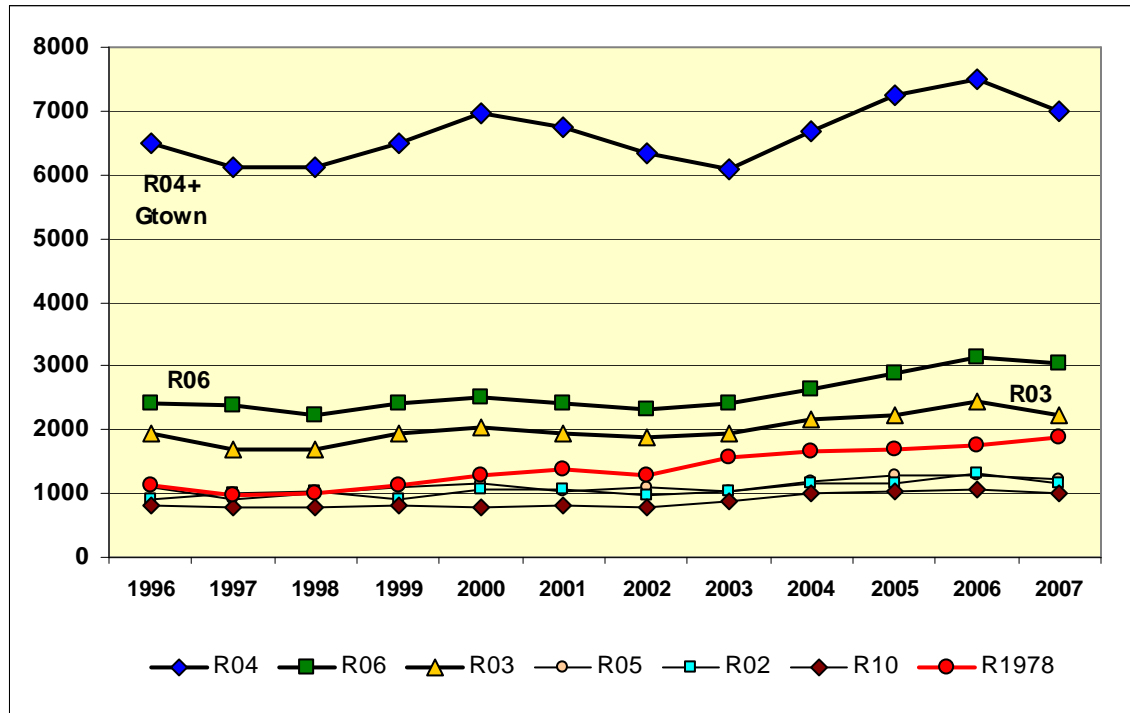
Note: Region 4 included Georgetown prior to 2007.

- 2.14 SSEE data are neither reported nor analyzed gender. The National Center for Educational Resource Development (NCERD) analysis of 2007 SSEE Results (published in August 2007) does not include analysis of SSEE participation rates by region. Student performance by region is discussed below (Chapter 4), and analysis by gender and by “size” of primary school is recommended.
- 2.15 This USE Review has concentrated on the average secondary school enrollment (“size”), but a similar analysis of average Primary school size and SSEE results could provide a useful focus for discussions between the Ministry and Regional Education Departments.
- 2.16 **Guyana should not expect to achieve USE (and be competitive at CXC examinations) if Grade 6 students lack the literacy and numeracy skills to succeed in secondary school.** As noted in Chapter 4 Student Outcomes, the Ministry, Regional Departments and NCERD should discuss the quality and competencies of primary Grade 6 graduates.

³¹ Note that SSEE (and CXC) candidate data include private school students.

2.17 If an expanded pool of students inadequately prepared for SSEE has contributed to declining scores (**Figure 4.4** in Chapter 4), this decline should be arrested as more primary teachers are trained (and retrained) and the quality of learning in primary grades improves.

Figure 2.3: Secondary Schools Entrance Examination Candidates by Region, 1996-2007



Source: Analysis SSEE/NGSA Results 1996-2007, August 2007, Volume 1, pages 10-15.

2.18 Persistent attrition from school after age 10 is one of the major challenges to the implementation of USE. Emigration may exaggerate the slope showing declining enrollment in Figure 2.2. With more children completing Primary school, the larger numbers aged 10 and 11 in 2005/06 will increase demand for secondary school places in 2006/07 and 2007/08, and they should stabilize in 2008/09 and 2009/10. Smaller cohorts aged 4-7 years (where blue line is above red line for all regions except the hinterland) suggest that new entrants to Secondary grades may decline after 2010/11.

2.19 Improving the primary-secondary transition is one of the measures identified in Chapter 1 to improve USE and could offset the potential demographic effect identified above. Table 2.6 illustrates apparent attrition between primary and secondary schools. Of the 34,261 primary students aged 9-10 years reported in the 2001/02 school statistics, only 26,452 or 77% were present as 13-14 year olds in secondary schools in 2005/06. Some of the “missing” students may be in Private schools³², some may have emigrated but an unknown number have “dropped out” out of the school system. Hinterland regions (1,7,8&9) averaged 84% apparent survival to secondary schools, with approximately half continuing in Primary Tops and half in GSS.

2.20 This analysis excluded ages 11 and 12, both of which have some primary and secondary enrollment. Regions 3, 4 & 11 have more 11 year-olds in secondary schools. There is a caveat to Table 2.6 – students from regions other than 3, 4 & 11 who are successful in the

³² MOE will have authority in the new Education Act to obtain comprehensive data for Private schools.

Secondary Schools Entrance Examination and gain a place at one of the preferred colleges/schools **inflate the Region 3, 4&11 survival rate** (and deflate the rate in their own Region). Improving the quality of rural secondary schools should reduce this impact.

Table 2.6: Age 9/10 survival to Ages 13/14 by Region

		2001/02		2005/06		2005/06		Mean
AGE:		9	10	13	14	9→13	10→14	13+14
R1,7,8,9	F	957	926	842	760	0.880	0.821	0.851
R1,7,8,9	M	935	905	796	734	0.851	0.811	0.832
R2,5,6,10	F	3259	2959	2748	2350	0.843	0.794	0.820
R2,5,6,10	M	3313	3079	2603	2429	0.786	0.789	0.787
R3,4,11	F	4673	4155	3508	3292	0.751	0.792	0.770
R3,4,11	M	4669	4431	3339	3051	0.715	0.689	0.702
Guyana	F	8889	8040	7098	6402	0.799	0.796	0.797
Guyana	M	8917	8415	6738	6214	0.756	0.738	0.747

Source: MOE Statistical Digests (ZZRYSNAS_X15MARCH.SQL)

2.21 A greater proportion of female students “survive”, and the pattern is consistent across these Regional “groups”. Higher attrition of male students may exaggerate female retention. Survival rates from age 9 to age 13 are higher than survival from age 10 to age 14 – except for females in Regions 3, 4 and 11, where the latter reflects transfers to secondary schools in Georgetown (and to President’s College in Region 4).

2.22 **Table 2.7** disaggregates transition rates by gender and by the type of school. More males who progress to secondary do so in Primary Tops (0.170 and 14.3) compared with females (0.126 and 0.103) or in CHS (males 0.117 compared with 0.095 and 0.100 for females).

Table 2.7: Transition from 9/10 to 13/14 years, by Gender and Secondary Type

		9→13	10→14	
Female students not continuing		0.201	0.204	
Transition to Primary Tops	F	0.126	0.103	
Transition to CHS	F	0.095	0.100	
Transition to GSS	F	0.578	0.593	Female rate 10% above Male rate
Total Females Continuing		0.799	0.796	Female rate 4-6% above Male
Male students not continuing		0.244	0.262	
Transition to Primary Tops	M	0.170	0.143	Male rate 5% above Female
Transition to CHS	M	0.117	0.117	Male rate 2-3% above Female
Transition to GSS	M	0.469	0.479	
Total Males Continuing		0.756	0.738	Source: RYSNAS_26NOV_SECY.sql

2.23 For USE, transition to GSS is strategic – with almost 60% of girls aged 9-10 being in GSS by ages 13-14. Males are more than 10 percentage points lower (0.469 and 0.479). These patterns explain why regions other than Georgetown and Region 4 have higher transition rates in Tables 2.6. The exception already noted is the higher female transition 10/14 which is also apparent in higher GSS transition.³³

2.24 **Transition rates of 10-17% for both Primary Tops and CHS should be of concern** - especially as few students would complete the USE target of five years secondary schooling. In the Primary Tops, male transition is almost 5% above female transition. In

³³ See also paragraph 2.15-2.17 (need for NCERD analysis of SSEE data by gender and by region).

CHS, male transition is approximately 3% higher. This may not be due to poorer performance by girls, but successful girls had already achieved their GSS places.

2.25 **Repetition inflates apparent transition from Grade 6 to Grade 7** (109% gross transition is reduced to 92.3% when Grade 7 repetition is excluded). **Table 2.8** demonstrates divergent patterns of repetition. Students who repeated in 2003/04 are expressed as a percentage of 2004/05 enrollments to approximate repetition rates³⁴.

- ③ 11.6% of all secondary students repeated, with males averaging 14.4% and females 8.8%, representing 2811 out of 18263 students in Grade 7.
- ③ 17.5% of CHS students repeated (38% in Region 3; 20% in Region 11), and 226/910 CHS students in Grade 7 in Region 11.
- ③ 14.9% GSS students repeated, but half the GSS students in Region 8, and 43% of the 198 Grade 7 students in Region 8.

Table 2.8 Secondary Grade Repetition Rates by Region

2004/5	R01	R07	R08	R09	R02	R05	R06	R10	R03	R04	R011	TOTAL	R1789	R2560	R3411
%R07	0.20	0.03	0.43	0.12	0.09	0.09	0.10	0.15	0.18	0.08	0.24	0.15	17.6%	10.3%	18.3%
%R08	0.22	0.00	0.21	0.09	0.04	0.05	0.11	0.09	0.11	0.09	0.18	0.12	12.4%	8.0%	14.2%
%R09	0.16	0.01	0.04	0.16	0.03	0.05	0.12	0.07	0.11	0.10	0.17	0.12	10.7%	8.3%	13.9%
%R10	0.18	0.00	0.14	0.07	0.03	0.13	0.14	0.06	0.11	0.14	0.13	0.11	8.4%	9.9%	12.5%
%R11	0.06	0.02	0.00	0.04	0.00	0.01	0.04	0.00	0.03	0.01	0.01	0.02	3.1%	1.9%	1.5%
Female	0.17	0.01	0.18	0.09	0.03	0.06	0.08	0.05	0.09	0.07	0.12	8.8%	10.4%	6.3%	10.2%
Male	0.21	0.02	0.31	0.13	0.05	0.08	0.13	0.12	0.16	0.11	0.21	14.4%	14.9%	10.4%	17.0%
PTOP	0.22	0.03	0.16	0.10	0.11	0.03	0.01	0.02	0.00	0.03	0.00	6.8%	14.4%	3.9%	1.8%
CHS									0.38	0.07	0.20	17.5%			20.4%
GSS	0.23	0.01	0.51	0.13	0.06	0.09	0.12	0.15	0.07	0.16	0.22	14.9%	17.3%	11.0%	17.8%

Source: Calculated from MOE Education Digest 2004/05 data. Old Gold cells report >15% repetition.

2.26 Repetition complicates enrollment forecasts, but has much wider implications for educational effectiveness, increases the total staffing required, and reduces the probability that students will reach Grade 11.

2.27 Overlaying each of the above issues about enrollment, primary completion rates, transition from primary to secondary and grade repetition rates, **student prospects for achieving USE by completing Grade 11 also depend on time which students spend in school.** Guyana may be unique in the amount of detail most schools report on monthly attendance, the care with which schools information is stored in a data base and summary tables are generated for the annual MOE Statistical Digest³⁵. Guyana, as a result, has a long series of average annual attendance by region, by gender and by level of schooling.

Table 2.9: Average Attendance, by level of schooling

Percent Attendance	2000/01	2001/02	2002/03	2003/04	2004/05
Nursery	F73% ; M72%	F74%; M71%	F68%; M65%	F74%; M71%	F78% ; M76%
Primary	F77%; M76%	F77%; M76%	F70%; M69%	F77%; M76%	F80%; M78%
Pmy Top	F60%; M55%	F59%; M54%	F58%; M53%	F61%; M55%	F61%; M55%
CommHS	F62%; M56%	F64%; M60%	F56%; M50%	F61%; M54%	F67%; M60%
GSS	F78%; M75%	F80%; M77%	F75%; M71%	F78%; M75%	F79%; M77%

Source: MOE Statistical Digests report average attendance for previous year (including draft 2005/06);

³⁴ The denominator should be 2003/04 enrollments, but similar patterns would be expected.

³⁵ MOE Statistical Digest Tables 8, 24 and 43.

- 2.28 Average student attendance varies by level of schooling and by region. Female student attendance exceeds male student attendance at each level of education. Primary and GSS average about 80% attendance. Primary Tops and CHS average only 60% attendance (shaded tan), with an improvement reported for CHS in 2004/05 (shaded gold).
- 2.29 Detail on variations in attendance by level of schooling, by gender, by region as well as seasonal patterns in monthly attendance are included as **Attachment D5**. The major findings which affect USE outcomes are summarized as follows:
- ③ Average primary attendance of 80% may contribute to poorer performance in SSEE examinations and lower transition rates to secondary schools;
 - ③ Attendance of 61% for girls and 55% for boys in Primary Tops in 2004/05 increases the likelihood that students will lack either competencies or aspirations to transfer to a GSS;
 - ③ CHS attendance improved in 2004/05 (female attendance to 67%, up from 61% in 2003/04; male attendance from 54% to 60%) but represents a large loss in learning time;
 - ③ GSS attendance (79%F; 77%M) has fluctuated around 80% over the period.
- 2.30 Local knowledge such as industrial action by teachers in one year and the flooding in 2004/05 may “explain” some annual variations, but there should be further analysis of the valuable data MOE holds on monthly/seasonal attendance patterns and how they vary across regions. Such analysis could assist the Ministry in issues relating to the school year, vacations and compulsory attendance in the new Education Act.
- 2.31 More importantly for USE, an analysis of seasonal patterns reveals a pattern which shows attendance as a threat to effective secondary education. Enrollment and staffing data are resource inputs – but do not show the quality of the inputs. Primary and secondary curricula define the number of hours per subject or days instruction per annum, but the *effective curriculum* is the number of days students and trained teachers are present and “on task”. The nominal school year is approximately 39 weeks (in three terms).
- 2.32 **USE should include an attendance target.** Achieving at least 80% attendance in CHS/Primary Tops and more than 90% in General Secondary Schools could be considered as initial targets. Even on the aggregate data published in the Statistical Digests, Primary Tops and Community High Schools **lose the equivalent of two days each school week.**
- 2.33 As planning for USE, the Ministry should ask whether low transition and retention reflects longer-term trends or are a shorter term response to perceived economic prospects. Expanding secondary schools capacity in Georgetown/Region 4 may be necessary to reduced reported over-crowding, but it should be undertaken with great care, as apparent attrition in **Table 2.6** averaged 26% (100 minus 74%). Over-crowding may be contributing to greater attrition in urban schools, but no data were available.
- 2.34 Attention should be given to alternative curriculum pathways, linking secondary grades and Practical Instruction Centers to Technical Education and the GTEE Basic Competency Certificate Program. Expanded offerings of commercial training courses (in computing, business, and other areas) appear unregulated and acceptable courses could be integrated as an alternative pathway.
- 2.35 **Completing Grade 11:** If better primary SSEE outcomes and strategies to improve transition from primary to secondary are successful, **Guyana should focus USE on improving retention of students from Grade 7 through Grade 11.**

2.36 In Chapter 1, the ratio of Grade11 students to Grade7 enrollment 4 years earlier provided a measure of secondary school completion. **Table 2.10** presents these data by region and by gender. Data for Grade 7 in 1997/98 at the foot of the table provide a comparison with an earlier cohort. Guyana should examine why performance 2001/02 to 2005/06 was lower than for the previous five year period.

Table 2.10: Secondary Grade Completion: Region and Gender

Regions Schools		Enrolled 2001/02		Enrolled 2005/06		SURVIVAL 2001/02 - 2005/06		
		M07	F07	M11	F11	M11/07	F11/07	G11/07
R01	40	321	300	27	53	8.4%	17.7%	12.9%
R07	18	209	202	102	100	48.8%	49.5%	49.1%
R08	18	128	142	2	29	1.6%	20.4%	11.5%
R09	42	302	286	62	64	20.5%	22.4%	21.4%
R1789	118	960	930	193	246	20.1%	26.5%	23.2%
R02	27	596	553	280	405	47.0%	73.2%	59.6%
R05	26	536	564	262	339	48.9%	60.1%	54.6%
R06	30	1438	1393	493	638	34.3%	45.8%	40.0%
R10	25	448	406	150	215	33.5%	53.0%	42.7%
R2560	108	3018	2916	1185	1597	39.3%	54.8%	46.9%
R03	36	1235	1083	384	497	31.1%	45.9%	38.0%
R04	44	1549	1340	289	384	18.7%	28.7%	23.3%
R11	32	2288	2179	803	1130	35.1%	51.9%	43.3%
R3411	112	5072	4602	1476	2011	29.1%	43.7%	36.0%
Guyana	338	9050	8448	2854	3854	31.5%	45.6%	38.3%
97/98		8096	7657					
01/02				2840	3758	35.1%	49.1%	41.9%

Source: MOE Statistical Digest data 1997/98, 2001/02, 2005/06

- 2.37 Regions 2 and 5 average more than 50% retention to Grade 11 in 2005/06, and, with Region 11, were also above 50% for the cohort which reached Grade 11 in 2001/02. By gender, Region 2 performance was even more marked – 73% of girls survived to Grade 11 in 2005/06, compared with 60% in Region 5, 53% in Region 10 and 52% in Region 11.
- 2.38 This is not an age-structure effect because it is the same cohort being measured. Net movement of students to Georgetown may have declined between the 1997/98 and 2001/02 intakes into Grade 7. Private schools and emigration of secondary students from Guyana may have contributed, but **the most disturbing conclusion is that more students in Georgetown “dropped out” of school.**
- 2.39 For USE planning in Georgetown, a cross-section of the 25 GSS and 7 CHS could be asked to compare their current list of Grade 11 students with their Grade 7 intake in 2003/04. Such a review could improve understanding of drop-out and assist the school, its community and the Ministry to implement more effective USE strategies. It is understood that the Ministry is examining such an analysis.
- 2.40 **Access issues identified by Ministry of Education:** Improving secondary provision in hinterland regions will be necessary to accommodate growth in primary enrollments, but the hinterland regions account for approximately 10% of national enrollments. Accommodating secondary school students in available school places in Georgetown and other coastal regions is an equally pressing priority.

- 2.41 Through SSEE, students from other regions with best performance are offered places in schools in Georgetown and Region 4. *This process may be counter-productive* – the quality of secondary education in more remote regions cannot improve if the most able primary students continue to be offered places in Georgetown schools. Better performing Georgetown schools are more attractive to teachers, add to difficulties in attracting (and retaining) teachers in rural regions, and will further delay improvement in the quality of secondary education in more remote regions.
- 2.42 The Ministry should monitor the impact of the new high school in Wisburg on improving secondary enrollments in Region 10. This model may not be replicable in more sparsely settled regions, where residential provision would add to the capital cost of establishing a new school. Schools with new facilities **and better teaching** may be a powerful incentive to attract and retain students, to retain teachers, to improve student attendance, to improve CXC outcomes, and to increase community confidence in its school.
- 2.43 Increases in secondary participation reflect the demographic changes evident in Figure 2.2 and more primary students undertaking the Secondary Schools Entrance Examination (Figure 2.3). Total Secondary enrollment has increased from 62,424 in 2002/03 to 67,141 in 2005/06 (Table 2.1), plus an unknown change in private school enrollment. **Table 2.11** shows a grade distribution of secondary enrolment by Region which mirrors the age-profile in Figure 2.4. Regions are ranked by their total secondary enrollment, from over 17,000 in R11 (Georgetown) to less than one thousand in Region 8.
- 2.44 On a number of measures, Region 2 out-performs the rest of Guyana – in Table 2.11 this is evident in it having 13.8% of secondary enrollment in Grade 11, higher than Georgetown at 11% and the national average 10.1%. It also has a high proportion of girls continuing (53.6% in Region 8 is the same, but it has very few students and, as noted elsewhere, boys are underrepresented in Region 8 schools).

Table 2.11: Secondary Students by Grade, Type of School and Region, 2005/06

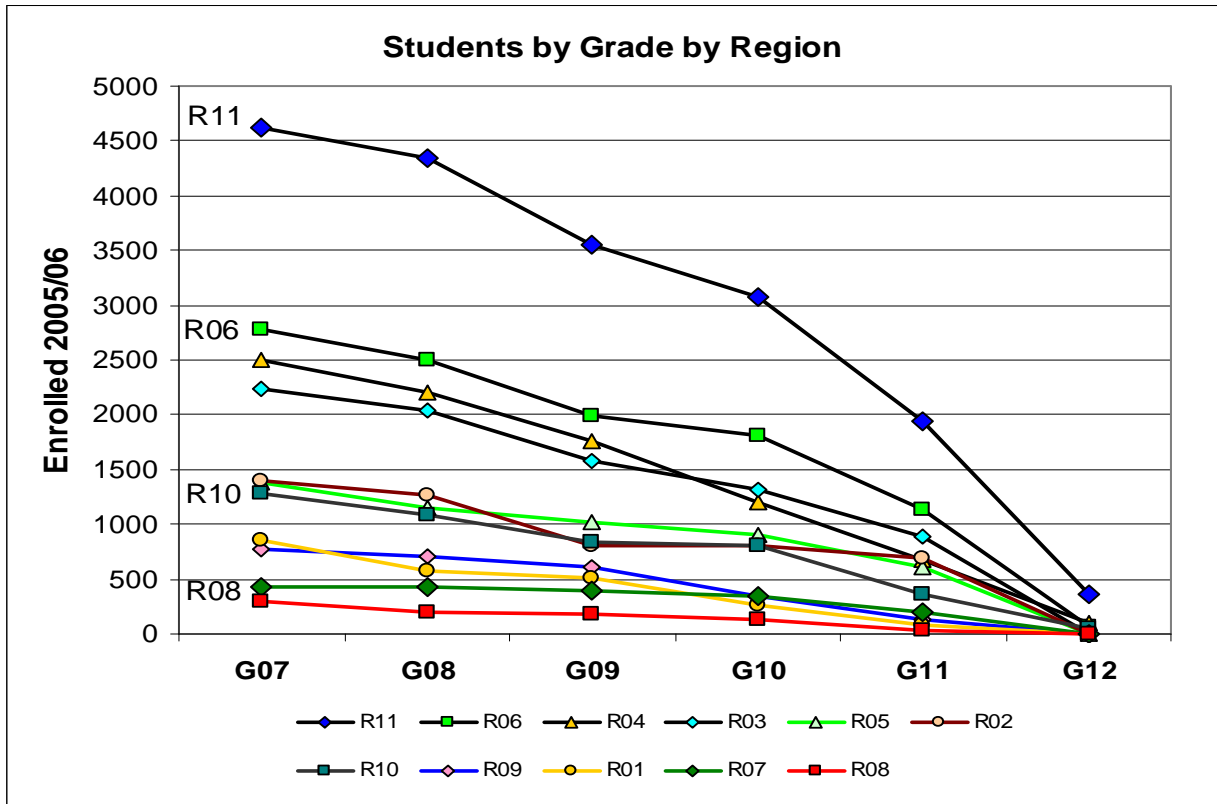
Region	G07	G08	G09	G10	G11	G12	Male	Female	Total	%G11	%F	Schools	Size
R11	4629	4349	3550	3081	1933	365	8408	9169	17577	11.0%	52.2%	32	549
R06	2776	2504	1998	1808	1131	59	4983	5293	10276	11.0%	51.5%	30	343
R04	2496	2201	1766	1203	673	96	4211	4224	8435	8.0%	50.1%	44	192
R03	2232	2035	1577	1322	881	0	4062	3999	8060	10.9%	49.6%	36	224
R05	1381	1152	1021	898	601	0	2534	2519	5053	11.9%	49.9%	26	194
R02	1400	1271	802	812	685	0	2305	2665	4970	13.8%	53.6%	27	184
R10	1280	1088	840	804	365	52	2313	2487	4800	7.6%	51.8%	25	192
R09	768	705	603	348	126	4	1340	1214	2554	4.9%	47.5%	42	61
R01	856	579	502	260	80	0	1137	1207	2344	3.4%	51.5%	40	59
R07	427	428	389	352	202	0	894	904	1798	11.2%	50.3%	18	100
R08	296	194	174	135	31	0	385	445	830	3.7%	53.6%	18	46
Total	18541	16506	13222	11023	6708	576	32572	34126	66697	10.1%	51.2%	338	197

Source: MOE Statistical Digests. Note higher Grade 11 share in Region 2 (old gold shading)

- 2.45 Region 2 appears to have achieved higher participation and CXC results above the Guyana average even though the Region 2 schools have an average enrollment of only 184 students. Further study of success in Region 2 may help other Regions improve their performance and move towards USE.

2.46 USE 2008-2012 should aim at moving regional profiles in **Figure 2.4** higher and to the right. The USE challenge is to identify the initiatives (by government, by the community, and by the international community) to lift national performance higher at each step - especially from Grade 8 to Grade 9 and Grade 9 to Grade 10. Inclusion of private schools and colleges would lift national performance, as would the inclusion of students who continue in technical education.

Figure 2.4:



- 2.50 The **maximum age of SSEE entry** should be reexamined, so that no students are kept in Primary Tops because they were “too old” to undertake SSEE.
- 2.51 NCERD (and the Ministry) should analyze **differences in SSEE participation rates** by region and by gender, and differences in SSEE performance by region. In Chapter 4, it is recommended that NCERD examine differences in SSEE performance, especially regional differences in specific competencies in English language and in Math. Analysis of performance by size of school should be considered. Teacher retraining and professional development should target competencies which require strengthening.
- 2.52 If **seasonal variations in student attendance** are monitored, consideration could be given to adjusting school terms to minimize time lost due to seasonal flooding and high river levels.
- 2.53 Guyana should examine a **90% attendance rate** in Grades 10 and 11 as a requirement for CXC candidature. The objective should be to improve attendance not exclude students from candidature.
- 2.54 **Secondary completion rates** (using G11/G7 ratios or CXC Entries as a percentage of G7 enrollment four years earlier) should be monitored by communities and regions so that high attrition is identified, reasons are examined and local action taken to reduce attrition.
- 2.55 Chapter 7 examines USE strategies and the following five elements in the demand for secondary education places:
- ③ **Demand** flowing from age-structure of the population, improved primary education participation, improved primary school learning outcomes, access issues in hinterland regions, improved transition from primary to secondary schools, and student placement/migration to Georgetown schools;
 - ③ **Demand** if CHS ⇄ GSS and Tops ⇄ GSS improve completion/transfers;
 - ③ **Demand** if secondary school attendance rates improve, and Grade 7 repetition is reduced. This may not increase aggregate demand, but will compete with new enrollments for available teachers and classroom places;
 - ③ **Demand**, estimate of new enrollments in private schools which potentially reduce demand for places in public secondary schools;
 - ③ **Demand**, clarifying links between secondary schools, Practical Training Centers, technical education and commercial/business colleges which potentially reduce demand for places in secondary schools.

Attachment E provides further detail on demand and supply issues and assumptions.

- 2.56 Many of these elements are beyond the direct control of the Ministry, and an initiative in one area may be offset by other changes – success in the Fast Track Initiative, for example, should improve primary completion rates in Hinterland Regions, but will also require an expansion in secondary school places which are accessible to students and acceptable to the Amerindian communities. USE requires a strategy to provide sufficient secondary places with staffing by qualified and experienced teachers to meet improved demand from FTI activities.

Chapter 3: Upgrading and Qualifying Teachers

- 3.1 Secondary teachers are the link between students and the curriculum, drawing on their qualifications, training and experience to enrich student learning and understanding, and to prepare students for formal examinations. The number of teachers required by a school depends on enrollment, class size standards, the way the secondary curriculum is divided into subjects, and the maximum teaching hours per subject per week. Student/Teacher Ratios (STR) are an outcome of the staffing process based on the above factors³⁶.
- 3.2 Guyana faces three strategic problems in managing the supply of trained teachers:
- (1) For **schools with fewer than 300 secondary students**, providing trained teachers qualified to teach in the required subjects is a recurring problem. Most Primary Tops and small secondary schools are located in hinterland regions which are difficult to staff, staff are difficult to retain, and tend to employ more unqualified/untrained teachers;
 - (2) Guyana cannot reduce its dependence on untrained teachers while it has a **shortage of teachers** and it continues to recruit untrained teachers to replace qualified and experienced teachers who leave the public system; and
 - (3) There appears to have been **no improvement in issues (1) and (2)** over the past decade. Recommendations prior to the USE 2003-2007 Plan based on 1997/98 teacher qualifications data appear just as applicable to USE 2008-2012 based on 2005/06 data.

Primary-Secondary Transition

Main issue: From the quality perspective, this is the key issue upon which the success of the change to a unified system will hinge. In 1997/1998 the percentage of trained teachers was 50%.³⁷ The goal under the National Development Strategy is for 80% of all teachers to be trained by 2010. See Table Five for specific data from the '1997-1998 Education Statistics' that illustrates the severity of the problem:

Type of secondary schools	# of teachers	# of trained teachers	% of teacher population that is trained
Secondary departments in Primary Schools	669	335	50
Community High Schools	615	343	51
Government Secondary Schools	1744	1004	58
Total (1997/98)	3028	1682	56

Suggested inputs: The professional development needs of USE cannot be tackled in isolation from the other sub-sectors. It is recommended that a ten year Education Professional Development Plan (EPDP) be drawn up and that the goals and targets developed under this EPDP are incorporated as a sub component of the GOG overall Education Development Plan (2001-2006). This Plan will need to provide the following:

- (i) agreement on the basic minimum professional qualifications for those teaching within each sub-sector;
- (ii) recommendations regarding the qualifications and realistic salaries for specialist educators (e.g. advisory teachers; inspectors; principals; heads of department);
- (iii) define norms and standards that will govern the work, conduct and performance of educators;
- (iv) set a deadline for the elimination of unqualified teachers within the Form 1 through 5 classes;
- (v) integrate in-service and pre-service courses (certification and delivery) across UG, CPCE and NCERD.

Source: Latham M, Final Report Nov Revised, 2000: 15-16

³⁶ STR are **not** a resource allocation mechanism, but provide a summary measure of resource usage.

³⁷ The 2000 Report quoted 60% of hinterland teachers as "trained" in 1997/98. "Untrained" is more likely.

- 3.3 Most of the issues identified in report by Latham (2002) still apply – **Table 3.1** compares data for 2005/2006, success in upgrading secondary education in GSS expansion, more students (+9.6%), an increase in mean GSS size (525 to 580), and a fewer Primary “Tops” and CHS enrollment. **Quality may not have matched the expanded quantity – the percentage trained teachers has declined from 55.5% to 53.7%**, the STR declined from 20.2 to 19.5, and STTR³⁸ remained unchanged at 36.4.

Table 3.1: Secondary Teachers in 2005/06 and change since 1997/98

Type of Secondary Schools	Teachers	Trained Teachers	Percent Trained	Schools	Students
Primary Tops	459	202	44	244	10,300
Community High Schools	499	243	49	24	9,256
General Secondary Schools	2479	1399	56	82	47,585
Total Secondary (2005/06)	3437	1844	53.7	350	67,141
<i>Change 1997/98 to 2005/06</i>			(a)		
Primary Tops	-210	-133	-63.3	-68	-2,862
Community High Schools	-116	-100	-86.2	-12	-3,165
General Secondary Schools	+735	+395	+53.7	+14	+11,915
All Secondary	+409	+162	+39.6	-66	+5,888

Source: MOE Statistical Digests; (a) “trained” marginal rate of change (absolute change -1.8%).

- 3.4 There are some related issues: In developing the new Education Act, its **teacher employment requirements** should be strengthened – establish post-secondary education and training as the (desirable) requirement for new Primary teachers and a university qualification in their subject area/s for new Secondary teachers³⁹.
- 3.5 Secondary schools require teachers who are “trained” teachers and “qualified” in the **subject being taught**. A “trained” primary teacher who teaches secondary math but has no subject specific math training or a graduate teacher with a university degree in a different subject area may not meet their students’ needs.
- 3.6 Analysis undertaken for this Review suggests that the supply of qualified subject specialists with teacher training for their subject is considerably below the 53.7% trained secondary teachers reported. Each Region requires **an audit** of secondary teacher qualifications, experience and skills against the classes and subjects that they are teaching. This audit could be linked to targeted recruitment and the development of Regional training plans.
- 3.7 Achieving USE will require a program to provide **in-service training** for qualified but untrained teachers and to examine incentives to encourage unqualified teachers to become qualified, such as formal recognition of *Escuela Nueva* and multi-grade teaching initiatives as teacher “training” and as credit towards a teaching qualification for unqualified teachers.
- 3.8 In parallel with recruitment and qualifications issues, the Ministry requires better information on levels of **teacher attendance**.⁴⁰ In Chapter 2, improving student attendance is a step towards improving learning outcomes, so any USE strategy should target at least 95% teacher attendance to strengthen learning quality.

³⁸ STTR is Students per Trained Teacher

³⁹ The proposed Act defines the rights and responsibilities of students and teachers, but does not appear to define the rights, responsibilities and duties of teachers (and principals).

⁴⁰ There is no reported data or analysis of teacher attendance.

- 3.9 In Table 3.1, secondary student numbers increased by 5,888 since 1997/98, secondary teachers by 409 but trained teachers by only 162. **Table 3.2** points to broad stability in teacher numbers without improvement in the proportions trained. Trained teacher share depends on *which teachers leave* the public school system and which teachers are recruited. The percentage trained “improves” if more untrained teachers leave, and vice-versa.

Table 3.2 Trend in Teacher numbers and Trained Teachers, by level of schooling

TEACHERS	2001/02	2002/03	2003/04	2004/05	2005/06
Nursery	2279	2190	2103	1958	1992
Primary	4243	4098	4069	4013	4043
Primary Top	602	606	529	464	459
Community HS	505	566	531	510	499
General SS	2501	2556	2541	2421	2479
Total Public	9528	10016	9773	9366	9472
TRAINED	2001/02	2002/03	2003/04	2004/05	2005/06
Nursery	971	1014	993	959	998
Primary	2324	2346	2273	2291	2326
Primary Top	297	286	240	199	202
Community HS	244	271	247	240	243
General SS	1396	1444	1411	1351	1399
Total Secondary	1937	2001	1898	1790	1844
Total Public	5232	5361	5164	5040	5168
Percentage Public School Teachers Trained					
Nursery	42.6%	46.3%	47.2%	49.0%	50.1%
Primary	54.8%	57.2%	55.9%	57.1%	57.5%
Secondary	53.7%	53.7%	52.7%	52.7%	53.7%

Source: MOE Statistical Digests (including unpublished draft 2005/06 data);

- 3.10 Between 2003/04 and 2005/06, teachers in Primary Tops declined by 70, the number of trained teachers declined by 38, so the Primary Tops proportion declined from 49% to 43%. CHS remained 48%-47% and the GSS proportion trained remained unchanged about 56%.

Staffing Small Secondary Schools

- 3.11 Guyana differs from more densely settled/more urban countries in its dependence on untrained teachers to staff many schools, and the persistence of “primary tops” to provide students in rural areas with access to some secondary education. **Table 3.3** shows school enrollment, school type and the proportion of secondary teachers who are “trained”.
- 3.12 As noted at Table 1.4 in Chapter 1, there is a **direct relationship between school “size”, school type and the proportion of teachers “trained”**:

- More than half the teachers in schools with <300 secondary students are untrained, with most Primary Tops with <50 students having only 45% trained teachers. Smaller CHS also have a majority of untrained teachers. Between 300 and 600 students, the one large Primary Top and several CHS have less than 50% trained, while GSS average more than 55%. Between 600 and 900, GSS teachers trained average around 60% and GSS over 900 students average two-thirds teachers trained.
- Above some 300-400 students, total teacher numbers are linked closely to student enrollment and the student teacher ratio (STR) is more stable, with only small increases with increasing enrollment. The proportion of “trained” teachers stabilizes between 50%

and 60%. This stability may be an illusion – it is a contrast between mostly GSS (+larger CHS) and Primary Tops (mostly <50 students and all less than 300).

3.13 **Table 3.3 points to an organizational “boundary” for schools above/below 300 students**, with percentage teachers trained less than 50% (green cells). Between 301 and 600, the percentage trained generally 50-60% for a mix of CHS and GSS, while in the 9 GSS above 850 students, two-thirds or more of the teachers are trained⁴¹. For all secondary schools <300 students, less than half the teachers are trained, less than 10% are trained graduates and, upper secondary students represent less than 20% of enrollment.

Table 3.3: Guyana Secondary Teachers 2005/06 by Percent Trained, School Type and Size

Size /50	Schools	Students Enrolled	STR	Trained Teachers	Total Teachers	percent Trained	Primary Tops	CHS	GSS
1	141	2700	12.2	100	221	45	45	43	
51	34	2518	25.7	35	98	36	36	31	
101	10	1140	28.5	24	40	60	64		25
151	11	1893	19.5	44	97	45	54	36	31
201	10	2235	19.6	54	114	47	39	54	50
251	4	1079	21.6	22	50	44	50	42	
301	4	1366	19.5	40	70	57		60	56
351	13	4834	19.0	136	255	53	40	55	55
401	10	4256	17.7	121	240	50		39	54
451	7	3372	19.8	97	170	57		53	63
501	10	5266	20.8	135	253	53		48	56
551	11	6297	19.6	172	321	54		44	55
601	7	4397	19.5	147	226	65			65
651	6	3986	19.7	114	202	56			56
701	12	8594	21.6	207	398	52			52
751	4	3110	23.2	86	134	64			64
801	1	812	33.8	13	24	54			54
851	4	3478	20.7	111	168	66			66
901	2	1842	25.6	39	72	54			54
951	1	988	23.0	32	43	74			74
1001	1	1040	24.2	31	43	72			72
1051	1	1080	27.7	36	39	92			92
	304	66283	20.2	1796	3278	55	46	48	58

Source: MOE Statistics. (GY0506S_x004_Type.sql 9 December 2007) See Attachment D4. Excludes 28 Primary Tops where teachers are reported in Primary.

3.14 The broad **relationship between enrollment and staffing above 300 students** is presented in **Table 3.4** as a matrix of enrollment (rows) and teachers per school (columns), with the number of schools the value in each cell. The shading of the cells makes the table into a “graph” showing effective staffing ratios, and the above-300/below-300 boundary described above. Cells with 4 or more schools are shaded “gold” and the number in bold and cells with 1-3 schools shaded “tan”.

⁴¹ In **Attachment D4** similar data are presented with schools grouped by enrollment in 150 student bands. Grade 10-12 students are more than 30% of total enrollment in GSS>300 students, and Trained Graduate teachers more than 10% of all teachers in secondary schools with 301-750 students.

3.15 A column showing percent teachers trained is included (Primary tops and CHS<300 students have more “untrained” teachers, GSS> 300 students have a majority of “trained” teachers), as well as a column showing the average number of teachers per school.

Table 3.4: Matrix of Secondary Schools by Enrollment (“size”) and Teachers per School

Type	SIZE	Schools	Total Teachers	percent Trained	Teachers /School	Number of Teachers per school								
						<5	5	10	15	20	25	30	35	40+
3GSS	>900	5	197	70%	39	0	0	0	0	0	1	0	1	3
3GSS	801	5	192	65%	38	0	0	0	0	1	0	1	1	2
3GSS	701	16	532	55%	33	0	0	0	0	2	5	3	4	2
3GSS	601	13	428	61%	33	0	0	0	0	1	4	3	4	1
3GSS	501	15	449	55%	30	0	0	0	0	5	4	1	4	1
2CHS	501	6	125	46%	21	0	0	0	3	3	0	0	0	0
3GSS	401	11	256	56%	23	0	0	2	1	5	2	1	0	0
2CHS	401	6	154	48%	26	0	0	0	1	2	1	2	0	0
3GSS	301	11	223	55%	20	0	1	1	4	3	2	0	0	0
2CHS	301	4	77	56%	19	0	0	1	2	1	0	0	0	0
1PTop	301	2	25	40%	13	1	0	0	0	1	0	0	0	0
3GSS	201	3	38	50%	13	0	0	3	0	0	0	0	0	0
2CHS	201	5	71	48%	14	1	0	2	2	0	0	0	0	0
1PTop	201	6	55	42%	9	1	3	2	0	0	0	0	0	0
3GSS	151	2	26	31%	13	0	1	0	1	0	0	0	0	0
2CHS	151	1	14	36%	14	0	0	1	0	0	0	0	0	0
1PTop	151	8	57	54%	7	3	3	2	0	0	0	0	0	0
3GSS	101	1	4	25%	4	1	0	0	0	0	0	0	0	0
1PTop	101	9	36	64%	4	9	0	0	0	0	0	0	0	0
2CHS	51	1	13	31%	13	0	0	1	0	0	0	0	0	0
1PTop	51	32	82	38%	3	30	2	0	0	0	0	0	0	0
2CHS	26	1	7	43%	7	0	1	0	0	0	0	0	0	0
1PTop	26	43	101	46%	2	41	1	0	0	0	0	1*	0	0
1PTop	1	98	116	44%	1	98	0	0	0	0	0	0	0	0
GUYANA		304	3278	55%	11	185	12	15	14	24	19	12	14	9
3GSS		82	2345	58%	29	1	2	6	6	17	18	9	14	9
2CHS		24	461	48%	19	1	1	5	8	6	1	2	0	0
1PTop		198	472	46%	2	183	9	4	0	1	0	1	0	0

Source: MOE Statistics 2005/06; *School with 2 Top teachers reports 30+ Primary Teachers.

3.16 It is recommended that the Ministry identify the minimum number of (trained and qualified) teachers a school requires to offer a viable range of subjects leading to CXC or the Basic Competency Certificate Program. If a “viable” secondary school requires >300 students and 15+ teachers, the challenge is how to deliver secondary education to students in most Primary Tops and about half the CHS which may fall below this “standard”.

Staffing Schools with Trained/Qualified Teachers

3.17 The analysis for this Review was to identify how secondary education functions in Guyana so that strategies to achieve universal secondary education can be examined and costed. There are three levels of teacher data – (1) aggregated data reported in annual MOE Statistical Bulletins, (2) school level summary reports which contribute to (1), and (3) unit record teacher data. **Table 3.4** used level-2 data for 334 schools, excluding 16 Primary Tops with “no teachers”⁴². The following analysis used unit-record data (level-3) from the MOE Planning Department for 3297 secondary teachers.

3.18 MOE teacher status⁴³ is abbreviated in **Table 3.5** and a separate field (sex) created to identify female teachers so that no data are lost. Light green shading in Table 3.5 approximates the “trained” status in aggregate MOE statistics. Status is a variable attribute of a teacher – a teacher can become “trained” and, less frequently, become “qualified”.

Table 3.5: Secondary Teachers 2005/06 by Status and by Region and Gender⁴⁴

Status (Master=Mistress)	mean AGE	N=	R1789 Female	R1789 Male	R2560 Female	R2560 Male	R3411 Female	R3411 Male
Headmaster	49	119	5	22	18	18	36	20
Deputy Head	49	67			18	13	26	10
Head of Department	40	401	3	8	119	57	153	61
Senior Master	42	210	7	2	50	29	101	21
Senior Assistant Master	40	76	1		24	5	38	8
Assistant Master	29	916	47	40	282	102	340	105
Teacher Aide (Trained)	42	1					1	
Temporary Qualified Master	22	1					1	
Temporary Assistant Master	53	15		1		1	9	4
TRAINED (A1:B3)		1806	63	73	511	225	705	229
Assistant Master	32	1				1		
Head of Department	34	3					1	2
Temporary Assistant Master	43	3					3	
Temporary Qualified Master	26	578	13	13	126	91	208	127
Untrained Graduate	33	149		2	17	17	75	38
Temporary Unqualified Master	26	301	14	14	86	34	111	42
Acting Teacher	33	331	33	27	79	31	117	44
Part Time Teacher	44	10		2		2	2	4
Junior Teacher	26	7					7	
Pupil Teacher	19	79	9	8	32	11	15	4
Teacher Aide	35	28	14	11			3	
Teacher-in-charge	28	1					1	
UNTRAINED (B4:C3)		1491	83	77	340	187	543	261
SECONDARY TEACHERS		3297	146	150	851	412	1248	490
Percentage Trained		54.8%	43.2%	48.7%	60.1%	54.6%	56.5%	46.7%

Source: MOE statistical data for 3297 Secondary teachers in 2005/06. (STeach_StatusReg3.sql) (Teachers.XLS)
Data for 3,297 teachers is 140 fewer than the 3,437 in the draft 2005/06 Statistical Digest.

⁴² These Primary Tops had secondary classes are staffed by primary teachers.

⁴³ “/Mistress” removed from the field descriptions. Annual school level reports used in the Statistical Digests mirror previous year data and may lag behind the salary status upon which teachers are paid.

⁴⁴ **Attachment F** shows distribution by individual Regions 01-11.

- 3.19 More than half of the secondary teachers in Guyana are “trained” teachers (54.8%), being as high 68% in Region 2 and 75%⁴⁵ in Region 7. At the other extreme, only 23% in Region 8 are trained, 37% in Region 9 and 45% in Region 1. In aggregate, **only 46% of Hinterland secondary teachers are trained** (Females 43%; Males 49%).
- 3.20 **If USE is to be achieved and results in CXC examinations are to be improved, training existing teachers is more immediate and more cost effective than strategies which attempt to recruit new trained teachers.**
- 3.21 Of those “untrained”, many of 578 “Temporary Qualified Masters” and 147 Untrained Graduates could become trained through external/distance units of study, short vacation courses and credit for effective teaching experience. Achieving trained status through full-time formal study is not a viable option – it is of no immediate use to the classroom teacher, it takes too long, it is too expensive to pay teachers during training and to pay for replacement teachers, especially if rural teachers have to attend University of Guyana or Charles Potter College of Education.
- 3.22 The highest proportion untrained is aged 16-30 (**Table 3.6:** 19% trained) – to target this group for training would have the dual benefit of encouraging them to remain in teaching and improve the quality of student learning. The largest numbers untrained are aged 31-45, and targeted training would encourage them to remain in teaching.⁴⁶

Table 3.6: Summary of Teachers Trained/Untrained by Sex and Age (2005)

Status and Sex	Teachers	n.s.	16-30	31-45	46-60	61+
Females Trained	1279	85	100	677	381	36
Males Trained	527	36	22	244	189	36
Females Untrained	966	93	360	403	92	18
Males Untrained	525	36	171	236	63	19
Secondary Teachers	3297	250	653	1560	725	109
Females % Trained	57%	48%	22%	63%	81%	67%
Males % Trained	50%	50%	11%	51%	75%	65%
Total % Trained	54.8%	48%	19%	59%	79%	66%

Source: MOE Statistics. Source: Steach_StatusRegion_bsex.sql

- 3.23 The “trained/ untrained” distinction may make the staffing situation appear more grim than necessary. **Table 3.7** used unit record teacher data to identify teachers with some academic qualification but no teaching qualification.

Table 3.7: Secondary Teachers by Professional Qualification and Age in 2005

Prof ⁴⁷	Age	N=		NS	16	21	26	31	36	41	46	51	56	61+
MBD	39	220	7%	17			22	34	25	31	50	32	6	3
TTC	33	1586	48%	105	15	256	391	236	119	132	170	144	12	6
UNO	25	1268	38%	121	231	417	236	97	44	37	37	35	8	5
UNT	32	223	7%	7	3	51	63	29	25	18	13	9	3	2
		3297		250	249	724	712	396	213	218	270	220	29	16

Source: MOE teacher data; Attachment F (Tch56_X005.xls) “Age” is the mean for teachers in the row.

⁴⁵ Bartica Secondary School has 92% trained and it accounts for 39/63 of Region 7 secondary teachers

⁴⁶ Years of untrained service warrants MOE examination (it was not in the data set used for this Review).

⁴⁷ MBD=Masters, Bachelors, Diploma, TTC=Trained Teacher Certificate, UNO= Untrained with Other qualification, UNT= neither qualification nor teacher training.

- 3.24 Some 55% of secondary teachers in **Table 3.7** have a professional teaching qualifications (Masters, Bachelor or Diploma in Education, shown as MBD) or with a Teacher Training Certificate (TTC). “Untrained” teachers have been subdivided between 38% of teachers with some qualification but “untrained” (UNO) and teachers with neither an academic qualification nor any teacher training (UNT 7%).
- 3.25 Most UNO are under 26 years-of-age (shaded tan in Table 3.7). In-service training which leads to a teaching qualification for this UNO group should improve teaching, encourage teachers to remain in the profession and contribute to the overall USE strategy. This is a potential target for school-based, region-based in-service training to upgrade these teachers to “trained” status. The first objective of in-service should be to improve teaching and learning, but improving reported qualifications also demonstrate national commitment to better quality education.⁴⁸
- 3.26 **Untrained/Unqualified 7% understates the problem in Hinterland regions** (26%), in Primary Tops (22%) and where teaching subject is not stated (12%). As noted at paragraph 3.5, the quality of secondary education depends not only on the “trained/untrained” distinction, but also on whether **teachers are “trained” in subjects they are teaching**.⁴⁹
- 3.27 For a school to offer a **viable secondary curriculum** – up to CXC in Grade 11 – it requires teachers with the knowledge and skills to prepare students in CXC subjects. This is at the core of the USE 2003-2007 rationale to upgrade Community High Schools to General Secondary Schools and to consolidate Primary Tops into GSS. Some upgrading and consolidation was achieved through the Secondary Schools Rehabilitation Project (SSRP), the Guyana Education Access Project (GEAP) and the Basic Education Access and Management Support (BEAMS) Project. In Chapter 5 (Schools and Infrastructure), the contribution of these projects to creating new secondary school places is reviewed.
- 3.28 The curriculum component in upgrading CHS and consolidating Primary Tops is captured in **Table 3.8** and in **Figure 3.1**. Teachers with English as their first or second teaching subject are shown as “English (1,2)” and Math teachers as “Math (1,2)”. To avoid any understatement of Math teachers, any English teacher who also teaches Math is counted as a “Math” teacher.
- 3.29 **The school size “boundary” about 300 students identified in Table 3.4 is reinforced by the subjects offered in Table 3.8**. Below 300 students, most Primary Tops and CHS have few subject teachers, especially in English and Math. Classes are taught by general teachers with Primary training and possibly no teaching training. Above 400 students, specialist subject teachers are the norm⁵⁰.
- 3.30 **Figure 3.1** plots the distribution of English teachers (red line) and Math teachers (yellow diamond on solid black line) against schools ranked by mean enrollment (pink squares on blue diagonal line sloping from left to right). The thin blue line represents average number of teachers per school (against the right hand scale) – so schools 800 and above average around 40 teachers per school or a STR around 20:1.

⁴⁸ An audit of teaching qualifications (see paragraph 3.6) would be an appropriate starting point.

⁴⁹ School data used for Table 3.4 does not include “subject” (which is an attribute of teacher, but it may vary from year to year – and many secondary teachers teach more than one subject).

⁵⁰ This “boundary” effect may be exaggerated because data on subjects is not reported in all school returns. Analysis using teaching subject data may encourage better reporting by schools to MOE.

Table 3.8 Secondary Teachers by School Type, Size and Teaching Subject

GCP	SIZE	mean size	mean teachers /school	Total Teachers	ENGLISH (1,2)	MATH (1,2)	Other Subjects	None /Not Stated
SE	901	995	40.4	196	27	25	89	55
SE	801	859	40.0	208	37	27	121	23
SE	701	733	34.5	527	75	63	221	168
SE	601	645	33.7	439	58	52	214	115
SE	501	555	31.4	447	67	51	199	130
CH	501	547	22.3	109	19	16	47	27
SE	401	441	24.8	254	45	34	121	54
CH	401	478	25.0	121	23	20	59	19
SE	301	365	22.1	234	36	31	96	71
PR	301	351	21.1	22	2	5	8	7
CH	301	371	19.6	77	13	13	37	14
SE	201	210	12.9	38	10	7	17	4
PR	201	236	10.4	55	7	12	16	20
CH	201	245	17.1	81	12	19	39	11
SE	151	188	9.0	9	1	1	0	7
PR	151	172	8.3	57	8	8	19	22
CH	151	166	14.0	14	3	2	9	0
SE	101	102	4.0	4	1	1	2	0
PR	101	115	4.1	36	4	4	6	22
PR	051	76	3.5	83	3	5	12	63
CH	051	76	13.0	12	3	3	1	5
PR	026	37	3.1	71	2	0	10	59
CH	026	30	7.0	7	2	0	3	2
PR	001	12	1.4	112	0	3	3	106
				3213	458	402	1349	1004

Source: MOE Teacher data from 2005/06 school returns (TCH56_XCode02.sql 15 Dec 2007)

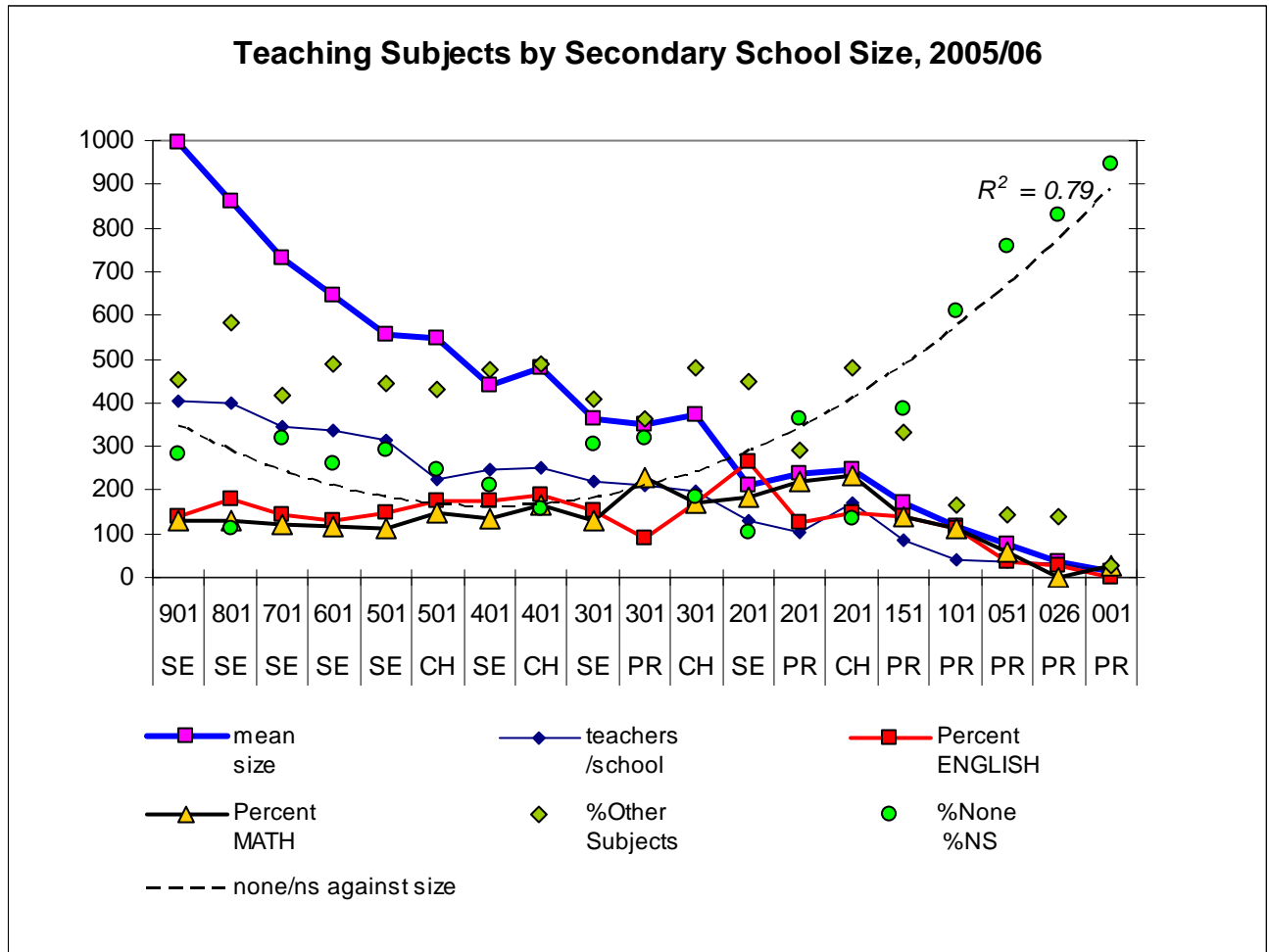
3.31 In addition to showing English and Math teachers, **Figure 3.1** includes the percentage of teachers in subjects other than English and Math (lime green diamonds) and the percentage of teachers with no subject specialty or not stated (bright green circles). For schools with fewer than 200 students, subject teachers “disappear”, and dotted black trend line summarizes the distribution of “No-specialty”/Not stated” subjects. The bright green circles are highly correlated with school “size” ($R^2=0.79$ or a 0.89 correlation).

3.32 **Table 3.9** condenses data in Table 3.8 by Type of School and the percentage distribution of teachers by subject. GSS have 15% of teachers teaching English, 12% teaching Math and 46% in Other Subjects. CHS report higher proportions of English (18%) and Math (17%). **Primary Tops have a markedly different profile** – English teachers (only 6%) and Math teachers (9%) but 68% as “no subject”, “all subjects” or “not stated”.

3.33 The same data are reported by Region in **Table 3.10**, with the differing mixes of secondary schools. Hinterland Regions (1, 7, 8&9) have many small Primary Tops and 11 GSS, only 19 Math teachers (6.5% of secondary teachers) and 60% general teachers with no specific subject. Other rural regions (2, 5, 6 &10) outside the more densely settled region (3, 4) around Georgetown (11) have a similar average profile. Regions 2, 5, 6 and 10 have many

Primary Tops, GSS and few CHS. Georgetown and its neighboring regions have half Guyana's GSS, 18/24 CHS and some Primary Tops. USE requires the conversion of the 7 remaining CHS in Georgetown to GSS and this will require a substantial increase in the numbers of teachers trained in relevant subjects/disciplines.

Figure 3.1



	ENGLISH (1,2)	MATH (1,2)	Other Subjects	None/ Not Stated	Total Teachers
GSS	357	292	1080	627	2356
CHS	75	73	195	78	421
Primary Tops	27	39	78	303	447
Guyana	459	404	1353	1008	3224
GSS	15.2%	12.4%	45.8%	26.6%	100%
CHS	17.8%	17.3%	46.3%	18.5%	100%
Primary Tops	6.0%	8.7%	17.4%	67.8%	100%
Guyana	14.2%	12.5%	42.0%	31.3%	100%

Source: MOE Teacher data 2005/06. TCH56_XCode03.sql (15 Dec 2007)

Table 3.10: Subject Teachers by Regional Grouping

Regions	ENGLISH (1,2)	MATH (1,2)	Other Subjects	None n.s.	Total Teachers
Regions 1, 7, 8, 9	31	19	67	174	291
Regions 2, 5, 6, 10	178	165	531	370	1244
Regions 3, 4, 11	250	220	755	464	1689
Guyana	459	404	1353	1008	3224
Regions 1, 7, 8, 9	10.7%	6.5%	23.0%	59.8%	100%
Regions 2, 5, 6, 10	14.3%	13.3%	42.7%	29.7%	100%
Regions 3, 4, 11	14.8%	13.0%	44.7%	27.5%	100%
Guyana	14.2%	12.5%	42.0%	31.3%	100%

Source: MOE Teacher data 2005/06. TCH56_XCode04.sql (15 Dec 2007)

3.34 Beyond these “descriptions” of teachers by subject specialty in Tables 3.8-3.10, **quality learning requires qualified teachers in each subject discipline.** With 55% of all secondary teachers “trained” (Tables 3.4-3.6), **Table 3.11** reports trained teacher status by subject area and school type. General Secondary Schools have higher overall trained teachers, especially in English (67%), Math (64%) and other subjects (61%). Community High Schools have more untrained teachers in subjects other Math.

Table 3.11: Subject Teachers by School Type and Trained Status

	Type	Status code	Teachers	English (1,2)	Math (1,2)	Other Subjects	None /n.s.
Trained	GSS	A,B	1376	240	187	658	291
Untrained	GSS	B4,C	980	117	105	422	336
%Trained	GSS		58.4	67.2	64.0	60.9	46.4
Trained	CHS	A,B	207	40	44	95	28
Untrained	CHS	B4,C	214	35	29	100	50
%Trained	CHS		49.2	53.3	60.3	48.7	35.9
Trained	Ptop	A,B	195	21	25	25	124
Untrained	Ptop	B4,C	252	6	14	53	179
%Trained	Ptop		43.6	77.8	64.1	32.1	40.9
Trained	All	A,B	1778	301	256	778	443
Untrained	Schools	B4,C	1446	158	148	575	565
%Trained			55.1	65.6	63.4	57.5	43.9

Source: MOE data. Attachment F⁵¹.

3.35 In Primary tops, the problem may not be the qualification of Math and English teachers but **there are too few specialist Math and English teachers.** With Primary Tops concentrated in Hinterland regions (R1,7,8&9), there are only 19/291 trained teachers teaching Math, but they may not be “trained” to teach Math! Almost 41% of Primary Top teachers with no or not stated teaching area are untrained.

⁵¹ Status code A includes Heads, Deputies, Senior Masters and Heads of Departments. Code B (except B4) are trained teachers, B4 are mostly untrained graduates and qualified but untrained teachers. Code C are mostly unqualified and untrained

Table 3.12: Subject Teachers by Region and Trained Status, 2005/06

Region	Status code		Teachers	English (1,2)	Math (1,2)	Other Subjects	None /n.s.
R1,7,8,9	A,B	Trained	135	21	12	34	68
	B4,C	Untrained	156	10	7	33	106
		%Trained	46.4	67.7	63.2	50.7	39.1
R2,5,6,10	A,B	Trained	725	124	100	335	166
	B4,C	Untrained	519	54	65	196	204
		%Trained	58.3	69.7	60.6	63.1	44.9
R3,4,11	A,B	Trained	918	156	144	409	209
	B4,C	Untrained	771	94	76	346	255
		%Trained	54.4	62.4	65.5	54.2	45.0
Guyana	A,B	Trained	1778	301	256	778	443
	B4,C	Untrained	1446	158	148	575	565
		%Trained	55.1	65.6	63.4	57.5	43.9

3.36 For USE to be effective, Guyana needs to both more trained teachers and more graduate teachers. If the quality of both education and CXC examination results are to improve, Guyana will need more trained graduate teachers in Math and Science. This highlights yet another dilemma confronting Guyana – if Georgetown absorbs more of the better qualified teachers, there will be even fewer available in the rural communities which already lack skilled and experienced teachers.

3.37 As noted at above, the proportion “trained” depends on *which teachers leave* the school system and which teachers are recruited. Percentage trained “improves” if more untrained teachers leave, and vice-versa. **Table 3.13** reports MOE data for 2005/06 by region (grouped) and by type of secondary school. Guyana has very few graduate teachers (14.8%; two-thirds with a teaching qualification), mostly in GSS in Regions 3, 4 and 11.

Table 3.13 Secondary Teachers by Training/Qualification by Region and School Type

Region	R1,7,8&9				R2,5,6&10				R3,4&11				Guyana
Type	PTop	CHS	GSS	Total	PTop	CHS	GSS	Total	PTop	CHS	GSS	Total	Total
Schools	114	1	9	124	75	5	32	112	53	18	41	112	348
Trained Graduate	2	0	9	11	3	2	90	95	10	40	156	206	312
Untrain Graduate	1	1	1	3	0	0	40	40	2	8	121	131	174
Trained Qualified	47	2	76	125	78	37	518	633	75	140	511	726	1484
Untrain Qualified	32	1	46	79	69	27	322	418	58	162	396	616	1113
Untrained	62	0	14	76	22	5	28	55	11	35	17	63	194
Teachers 2005	144	4	146	294	172	72	998	1242	156	385	1201	1742	3278

Source: MOE Statistical Bulletin (2005/06 draft). Teacher status at October 2005.

3.38 **Table 3.14** uses the same data to show net teacher turnover between October 2004 and October 2005. Net outflow was only 21 teachers or 0.6% of total teachers in 2004. At the school level, turnover of trained teachers is mostly “transfers”. Inflow and Outflow include untrained teachers, but detail is not shown to simplify the table. Attachment F presents the same data in enrollment bands (<300, 301<600, 601+).

Table 3.14 Inflow and Outflows of Teachers by Training/Qualification, 2004-2005

<i>Region</i>	R1,7,8&9				R2,5,6&10				R3,4&11				Guyana
<i>Type</i>	PTop	CHS	GSS	Total	PTop	CHS	GSS	Total	PTop	CHS	GSS	Total	Total
GT New/ReEmply	0	0	0	0	0	0	1	1	1	0	2	3	4
GT Transfers In	2	0	1	3	3	1	14	18	6	8	24	38	59
TQ New/ReEmp.	1	0	0	1	0	0	6	6	1	1	6	8	15
TQ Transfers In	6	0	5	11	10	2	43	55	21	15	53	89	155
INFLOW	31	0	24	55	30	9	149	188	55	41	186	282	525
GT Loss	0	0	0	0	0	0	3	3	0	0	4	4	7
GT Transfers Out	0	0	0	0	0	1	14	15	4	4	37	45	60
QT Loss	1	0	1	2	1	2	17	20	1	0	3	4	26
QT Transfers Out	11	0	10	21	7	4	69	80	10	22	65	97	198
OUTFLOW	39	0	23	62	18	14	194	226	25	48	185	258	546
Teachers 2004	152	4	145	301	131	77	1010	1218	126	392	1200	1718	3237
Net Trained	-3	0	-5	-8	5	-4	-39	-38	+14	-2	-24	-12	-58
Net Untrained	-5	0	+6	+1	7	-1	-6	0	+16	-5	+25	+36	+37

Source: MOE school level data. (Tchr_Loss.XLS; TCH05_003TRF_Region.sql).

3.39 **Reported change between October 2004 and October 2005 shows little net change in Trained Graduates (GT-4), greater losses of Other Qualified Teachers (TQ -54 or 4%) and losses of untrained teachers (Inflow 192-Outflow 254= net loss 62, or 4%).**

3.40 The 9 GSS in the Hinterland regions had a net loss of 5 trained teachers and a net gain of 6 untrained teachers. Rural Coastal Regions GSS had a net loss of 39 trained teachers and 6 untrained teachers, while GSS in Regions 3, 4&11 lost 24 trained teachers and gained 26 untrained teachers.

3.41 There may be lags in the way in which education systems respond to changing enrollments. **Table 3.14** shows that the 53 Primary Tops in Regions 3 and 4⁵² had a net increase of 30 teachers between October 2004 and October 2005, when **Table 3.15** shows an increase of 331 students enrolled (+11.4%) in the same period. This increase appears to be at the expense of the 15 CHS in Regions 3, 4&11 which declined by 374 students (-7 teachers). GSS in Regions 3, 4&11 had a net gain of only 11 students, and +1 teacher.

⁵² There are no Primary Tops in Georgetown.

Table 3.15 Changes in 2004-2005 Secondary Enrollments by Type of School and Region

Type	Region	Size	Schools	Enrolled 2005	Enrolled 2004	Change 04-05	%Grades 10,11,12	Trained Teachers	STR
1PTop	R1789	1	108	3278	2915	363	13.4%	34.0%	22.76
1PTop	R2560	1	69	2845	2439	406	16.0%	48.3%	19.35
1PTop	R2560	301	2	707	56	651	14.4%	40.0%	28.28
1PTop	R3411	1	53	3220	2889	331	8.2%	54.5%	20.64
2CHS	R1789	1	1	287	108	179	8.4%	50.0%	71.75
2CHS	R2560	1	3	407	391	16	37.1%	51.2%	9.93
2CHS	R2560	301	2	861	809	52	16.8%	60.0%	28.70
2CHS	R3411	1	4	848	902	-54	13.6%	38.3%	14.13
2CHS	R3411	301	14	6673	6993	-320	22.3%	48.3%	20.53
3GSS	R1789	1	3	492	520	-28	31.9%	25.0%	17.57
3GSS	R1789	301	5	1972	1879	93	26.3%	53.2%	24.96
3GSS	R1789	901	1	1080	1085	-5	33.2%	92.3%	27.69
3GSS	R2560	1	1	212	180	32	22.2%	50.0%	17.67
3GSS	R2560	301	9	4094	4233	-139	30.5%	56.6%	19.31
3GSS	R2560	601	19	13457	12486	971	30.8%	61.3%	20.36
3GSS	R2560	901	3	2933	2768	165	32.9%	68.1%	25.96
3GSS	R3411	1	2	390	409	-19	6.9%	53.6%	13.93
3GSS	R3411	301	23	11084	11146	-62	33.1%	55.6%	17.40
3GSS	R3411	601	15	10920	10827	93	34.3%	55.6%	22.24
3GSS	R3411	901	1	937	937	0	25.6%	55.6%	20.82
			338	66697	63972	2725	27.4%	54.8%	20.35

Source: MOE school level data. Attachment F (Tchr_Loss.XLS; TCH05_003TRF_Size300.sql).

3.42 **Minimizing attrition should be a strategic USE issue.** Every teacher retained (and every untrained teacher trained) is one less teacher that has to be recruited. The Ministry and Regional Departments should note with concern that GSS in Regions 3, 4&11 lost 24 trained teachers and gained 25 untrained teachers. Tables 3.13 and 3.14 are based on analysis on only 2004/2005 changes – similar analysis for more years could help the Ministry and Regions to target areas of greatest attrition.

3.43 Analysis of enrollment and staffing data over several years would also provide an understanding of USE implementation and the lags between enrollment and staffing.

Staffing is a Size of School Issue

3.44 Tables 3.4 and 3.8 above show staff allocation issue linked closely to size of school. Without a formula which ensures adequate staffing, **small one or two teacher Primary Tops do not appear to be viable educational institutions**, especially if combined with low student attendance rates reported in Chapter 2. Small schools in **Table 3.16** have the least trained teachers, especially for the majority of small schools in Hinterland Regions. **Table 3.17** presents the “subject” dimension (see also Figure 3.1)

3.45 USE 2003-2007 Objective 6 requiring amalgamation of Tops into discrete General Secondary Schools may be the most difficult of all USE objectives. Identifying a central location with sufficient students to operate a viable secondary school will remain a problem.

It may be feasible in Region 4, but is unlikely in Region 9, where the three existing GSS have fewer than 300 students.

Table 3.16: Percentage of trained teachers by Subject and Size of School

	Guyana	R1789	Percent	R2560	percent	R3411	Percent
SIZE	Teachers	Teachers	Trained	Teachers	Trained	Teachers	Trained
<200	405	155	34.2%	143	46.2%	107	50.5%
201	507	47	42.6%	150	54.0%	310	54.5%
401	931	49	53.1%	155	55.5%	727	54.3%
601	966	0	0.0%	587	57.8%	379	53.8%
801+	404	39	92.3%	199	71.4%	166	57.8%
	3213	290	46.6%	1234	58.5%	1689	54.4%

Source: MOE Teacher Data, 2005/06 (Tch56_X005.XLS)

Table 3.17: Percentage of trained teachers by Subject and Size of School

Size	Total Teachers	English Teachers	English percent Trained	Math Teachers	Math percent Trained	Subjects Teachers	Subjects percent Trained	Other Teachers	Other percent Trained
001	112	0	0.0%	3	0.0%	3	0.0%	106	0.0%
026	78	4	50.0%	0	0.0%	13	23.1%	61	37.7%
051	95	6	66.7%	8	50.0%	13	23.1%	68	35.3%
101	40	5	80.0%	5	80.0%	8	50.0%	22	50.0%
151	80	12	75.0%	11	54.5%	28	35.7%	29	48.3%
201	174	29	69.0%	38	57.9%	72	38.9%	35	37.1%
301	333	51	68.6%	49	61.2%	141	53.9%	92	50.0%
401	375	68	66.2%	54	66.7%	180	50.6%	73	45.2%
501	556	86	55.8%	67	59.7%	246	58.9%	157	43.9%
601	439	58	70.7%	52	69.2%	214	66.8%	115	40.9%
701	527	75	60.0%	63	60.3%	221	58.4%	168	42.9%
801	208	37	81.1%	27	66.7%	121	62.8%	23	56.5%
901	196	27	66.7%	25	76.0%	89	75.3%	55	60.0%
	3213	458	65.7%	402	63.4%	1349	57.6%	1004	44.0%

Source: MOE Teacher Data, 2005/06 (Tch56_X005.XLS);

3.46 **If Primary Tops are to continue in Guyana, they should be better resourced and better staffed.** If there is no reasonable access to a GSS, the Ministry and the Regional Departments have to invest more in Primary Tops – ensuring that trained and experienced teachers are appointed, providing itinerant specialist teachers to support classroom teacher/s, and providing funds for student and teacher travel to the nearest accessible GSS.

3.47 The above analysis suggests a minimum viable size for a Primary Top of 40-50 students , with at least two trained teachers, one qualified in teaching English and the second qualified in teaching Math. **It is recommended that each Region assess its current Primary Tops against such a standard.** Training in teaching English and Math should be a priority for in-service courses. In rural Regions already short of qualified English and Math teachers, this would appear an unrealistic standard but it is the minimum for students in Primary Tops to have any prospect of transferring to a GSS in Grade 8 or Grade 9.

3.48 If neither consolidating Tops nor achieving the recommended staffing are feasible, the next best alternative would be the creation of a “cluster” secondary school, where teachers and students in “satellite” classes are part of a centrally located school. Itinerant specialist

teachers would support satellite classes, teacher professional development could be provided for the cluster, and students could participate in “whole school” activities several times per year.

- 3.49 A more expensive option would be to establish a national quality school with boarding facilities in one of the hinterland regions so that the best SSEE students from across the country compete to attend. This would dramatically improve secondary education in Region 9 (for example) but would also reduce excess demand for places in Georgetown.
- 3.50 **Increasing teacher supply** is a long term process, especially where curriculum change increases the need for in-service/retraining of existing teachers. Expanding capital expenditure on new school places require a greater recurrent investment in training and continuing recurrent expenditure to employ (and retain) skilled teachers. **Annex E** summarizes teacher supply and demand issues.
- 3.51 Analysis of Ministry and Regional expenditure on education delivery (Chapter 6) shows limited resources allocated to teacher in-service training. Budget line item 6302 Training includes Scholarships but represents less than 0.5% of recurrent expenditure. There may be other expenditure in 6261 Local Travel and Subsistence, but this is also less than 0.5% of recurrent expenditure.
- 3.52 Managing existing and future staffing is shown in this Chapter to be central to achieving USE objectives. In Chapter 4 it is also central to better learning outcomes. To achieve USE Objectives 2, 3 and 4, Guyana requires a clear strategy to upgrade and refresh teacher skills, especially if SSEE/CXC examination performance is to improve. Involving more teachers from outlying regions in examination marking could be an effective retraining activity, and contribute to better examination performance.

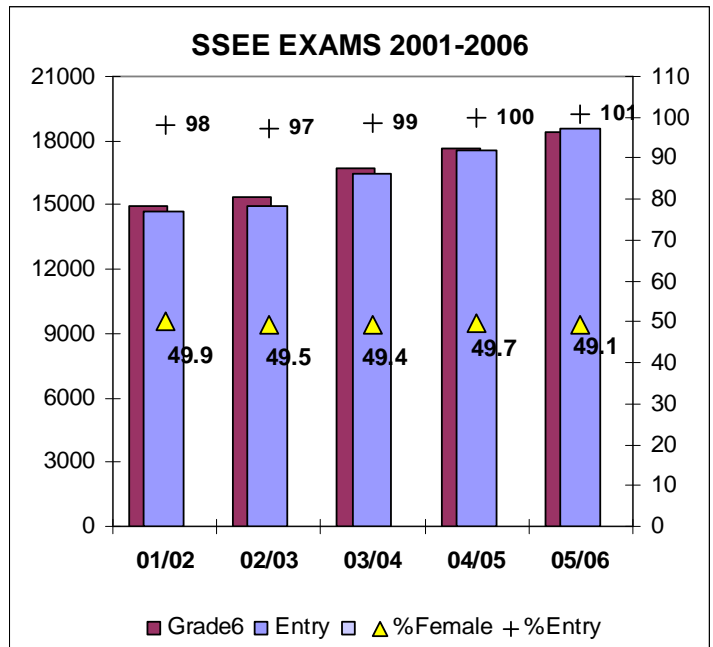
Chapter 4: Improving Student Learning Outcomes

- 4.1 Universal Secondary Education in Guyana seeks to give all students in Guyana access to quality learning opportunities, but the **accessible curriculum**⁵³ depends on how well prepared Grade 6 students have been prepared for secondary education, how may progress to Grade 7, and the type of education to which they have access. In Chapter 2, enrollment patterns, student attendance patterns, gender differences in entry to the Secondary Schools Entrance Examination (SSEE) limit potential participation beyond Grade 6. In Chapter 3, the availability of qualified and trained teachers have a bearing on primary outcomes, success at SSEE, placement in GSS and the quality of learning opportunities available. Chapter 5 examines whether the availability of secondary school places limit participation.
- 4.2 This Chapter examines the quality of Grade 6 graduates (using SSEE results), attrition during transfer from Grade 6 to Grade 7, student progression to Grade 11 and CXC examinations, seasonal variations in student attendance⁵⁴, and student performance at CXC. USE Objective 3 required at least 35% achieving Grades 1-3 in CXC Math (NCERD reported 23.9% against this objective at 2007 CXC). A secondary school system cannot be effective without qualified, trained and experienced teachers, and without student and teacher attendance in excess of 90%.

Grade 6 Examination Outcomes

- 4.3 Primary students sitting the Secondary Schools Entrance Examinations (SSEE) are presented in **Figure 4.1** and **Table 4.1**. This is the first requirement for a viable secondary education system. SSEE candidature increased from 14,692 in 2001/02 to 18,540 in 2005/06 (and 18,538 entries in 2006/07).⁵⁵
- 4.4 **Table 4.1** uses MOE statistics on public school enrollments between 2001/02 and 2005/06 to compare female students as a percentage of Grade 6 and the number of SSEE entries as a percentage of Grade 6 enrollments the previous October. Female students fluctuate between 49% and 50% of SSEE entries.

Figure 4.1



⁵³ The formal curriculum is what a society believes its students should learn, the taught curriculum is what teachers plan to teach, the received curriculum is what skills, competencies and knowledge (beyond the rote learning of facts) that each student takes away from schooling, and the assessed curriculum is what external examiners think should be tested in terminal examinations.

⁵⁴ The impact of student attendance on the effective curriculum is discussed in Chapter 2. There is no analysis of teacher attendance reported for Guyana.

⁵⁵ SSEE data reported by NCERD include private school entrants.

Table 4.1: Grade 6 Enrollment in Public Primary Schools

Year	Male Entries	Female Entries	Females % Total	Enrolled Grade 6	SSEE Entry % Enrolled	SSEE Entry
01/02	7,496	7,479	49.94	14,975	98.11	14,692
02/03	7,754	7,600	49.50	15,354	97.41	14,957
03/04	8,471	8,265	49.38	16,736	98.55	16,494
04/05	8,852	8,754	49.72	17,606	99.93	17,594
05/06	9,377	9,035	49.07	18,412	100.70	18,540

Source: MOE Statistical Digests. Attachment D7 data by region (SSEE_Exams.xls)

- 4.5 The National Centre for Educational Resource Development (NCERD) publishes an analysis of SSEE results, with mean scores in Math, English, Social Studies and Science. Analysis of gender differences in performance would strengthen the NCERD publication, especially if poor educational performance by boys is a policy issue for Government and a potential barrier to achieving USE. NCERD analysis of results by “size” of school would assist USE planning⁵⁶. Poor outcomes for students from the smallest Primary schools should be a strategic issue for USE.
- 4.6 Guyana has had success in more students completing primary school, especially in the hinterland regions. In **Table 4.2**, Grade 6 enrollment in the hinterland increased +28% between 2001/02 and 2005/06 and SSEE entries increased +37%. Rural coastal regions (2, 5, 6 & 10) had +28% increase in Grade 6 and +31% at SSEE. Georgetown and adjacent regions 3 and 4 account for more than half Grade 6, and enrollment increased +19% and SSEE entries by +21%.

Table 4.2: Regional Trends in Grade 6 Enrollment and SSEE Entries

Year	R1789 Hinterland			R2560 Rural Coastal			R3411 Urban Coastal			Guyana		
	Grade 6	% Entry	SSEE Entry	Grade 6	% Entry	SSEE Entry	Grade 6	% Entry	SSEE Entry	Grade 6	% Entry	SSEE Entry
01/02	1542	83.72	1291	5383	96.67	5204	8050	101.83	8197	14975	98.11	14692
02/03	1688	93.19	1573	5582	95.88	5352	8084	99.36	8032	15354	97.41	14957
03/04	1888	88.72	1675	5988	99.97	5986	8860	99.70	8833	16736	98.55	16494
04/05	1889	90.21	1704	6505	98.51	6408	9212	102.93	9482	17606	99.93	17594
05/06	1978	89.59	1772	6881	99.16	6823	9553	104.10	9945	18412	100.70	18540
change	+28%		+37%	+28%		+31%	+19%		+21%	+23%		+26%

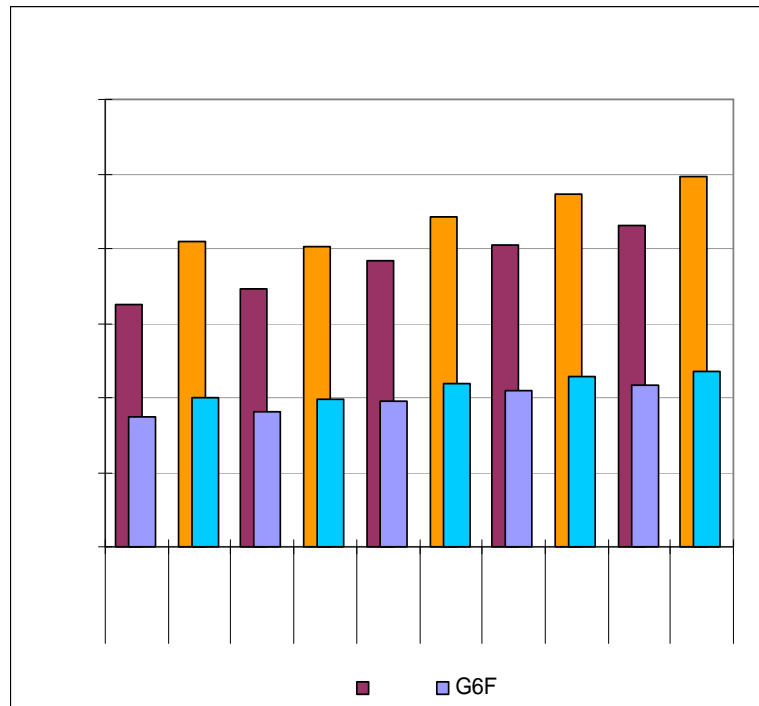
Source: SSEE Exams.XLS (SSEE2007_002.sql)

- 4.7 **Figure 4.2** compares the combined hinterland and rural/coastal regions with Georgetown/Regions 3&4. Combined rural (columns colored purple) entries increased from 6,495 to 8,595 while urban/coastal regions (orange) increased from 8,197 to 9,945. Female students in Grade 6 (Figure 4.2 blue columns) increased 24% in rural regions compared with +18% in Regions 3, 4&11. **Grade 6 male students increased +32% but SSEE entries increased by only +19%.**

- 4.8 **One impact of increased rural enrollment and SSEE entry has been a decline in average SSEE scores.**

⁵⁶ NCERD could use SSEE entries as a proxy for Grade 6 and total school enrollment (“size”).

Figure 4.2



4.9 NCERD publishes SSEE data by region from 1996 through 2007, with mean scores for Math, English, Social Studies and Science.

4.10 Guyana needs an *analysis* of these data to assist the Regional Departments (and Ministry) understand why the hinterland regions have consistent averages below 20/40 in Math, English and Social Studies and under 10/40 in Science.

4.11 In this Review, the SSEE scores used are weighted averages of each region score and its SSEE entries. Aggregation emphasizes contrasts, especially any implications for educational management and achieving USE. **“Rural” is a generalization** – there are marked differences between Hinterland (R1, 7, 8&9) and rural/coastal (R2, 5, 6&10) and within urban/coastal (R3, 4&11)⁵⁷.

4.12 The interaction between SSEE performance and Grade 7 repetition requires further analysis, especially if it reduces the probability of students completing five years secondary schooling⁵⁸. If primary performance predicts secondary outcomes, Guyana needs a more effective educational strategy to improve primary school outcomes. NCERD analysis of the particular SSEE competencies where rural students consistently under-perform could guide in-service education for teachers and pre-service training at CPCE and the University of Guyana.

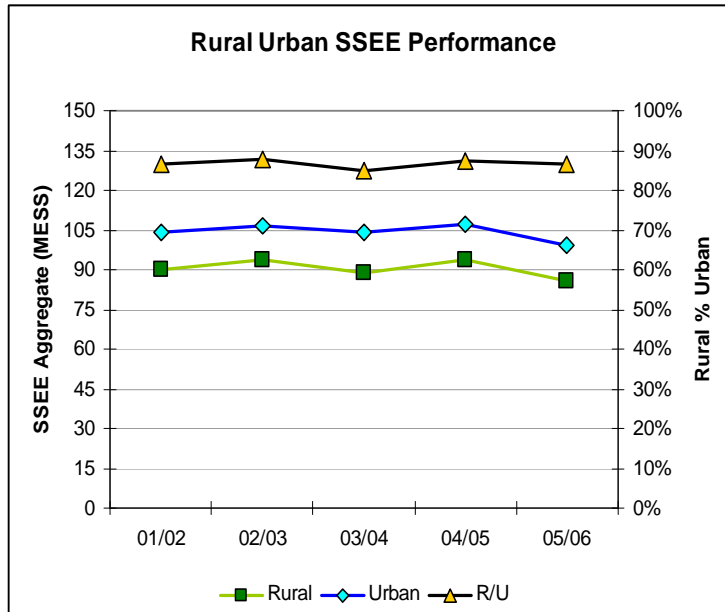
4.13 Coastal/urban regions (R3, 4&11) had aggregate Math, English, Social Studies and Science (MESS) scores around 104-107 from 2001/02 to 2004/05, declining to 99 in 2005/06 (blue line in **Figure 4.3**). Rural regions averaged 89-94 from 2001/02 through 2004/05, declining to 86% in 2005/06 (green line).

⁵⁷ Regional Departments need separate regional data (and in most cases individual school data).

⁵⁸ For example, analysis of the proportion of “ever repeaters” in students in Grade 11.

4.14 Guyana requires some analysis of the relationship between increased student entry (Figure 4.2) and declining outcomes⁵⁹ in Figure 4.3.

Figure 4.3



4.15 The black line (right hand scale) shows combined rural regions as a percentage of coastal/urban regions 3, 4&11, with the rural regions in a narrow 85-88% range.

4.16 **Table 4.3** contrasts separate subject means and an aggregate score for the four subjects, including SSEE scores in 2006/07.⁶⁰

Table 4.3 Contrasting Rural and Urban/Coastal Subject Means 2001/02-2006/07

Year	Region	Entry	Math	English	SStudy	Science	MESS
01/02	Rural	6,495	20.86	21.34	22.27	25.30	89.76
01/02	R3411	8,197	24.99	24.89	25.63	28.29	103.80
02/03	Rural	6,925	21.18	21.99	23.07	27.20	93.44
02/03	R3411	8,032	24.49	25.78	26.08	30.37	106.71
03/04	Rural	7,661	22.36	20.19	21.10	24.91	88.56
03/04	R3411	8,833	26.14	23.97	25.30	28.80	104.21
04/05	Rural	8,112	24.97	23.39	20.46	24.86	93.67
04/05	R3411	9,482	28.13	27.13	23.89	27.98	107.14
05/06	Rural	8,595	20.85	21.16	19.19	24.60	85.80
05/06	R3411	9,945	24.17	24.95	22.47	27.77	99.36
06/07	Rural	8,311	20.96	17.56	22.23	21.07	81.82
06/07	R3411	9,223	25.02	21.64	26.70	24.97	98.34

Source: NCERD Volume 1 (2007) data; (SSEE_Exam.xls)

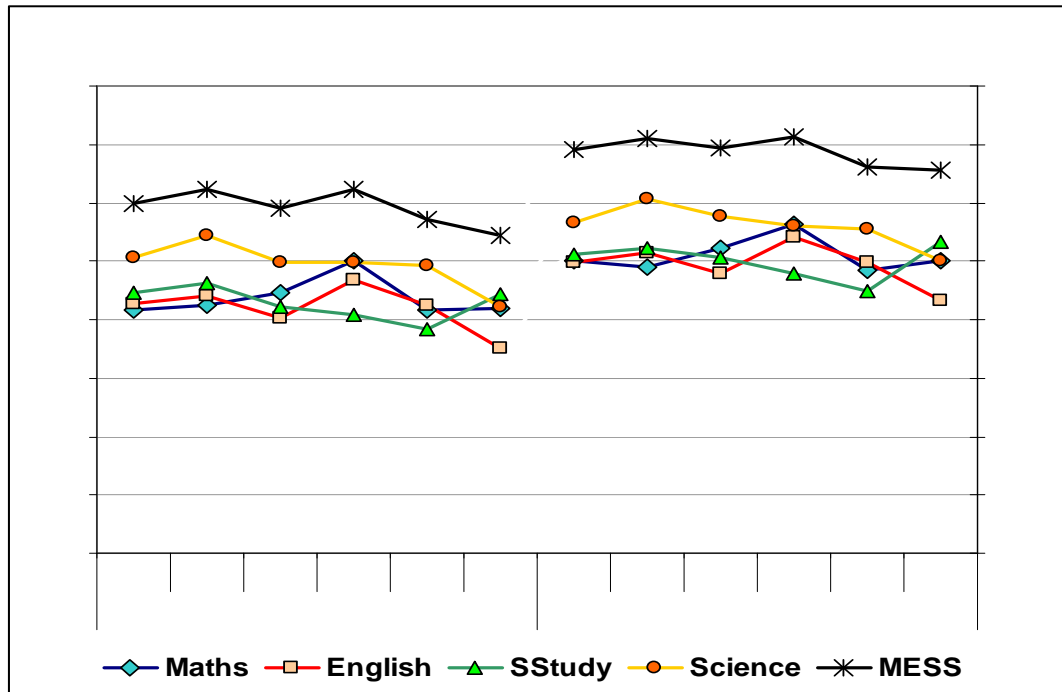
MESS= Math + English + Social Studies + Science (ssee2007_0003b.sql)

4.17 The black lines in **Figure 4.4** are the same as the blue and green MESS lines shown in Figure 4.3 above, with the addition of 2006/07 SSEE subject scores. Figure 4.4 includes the individual subject means (on the left hand scale) which make up the aggregate MESS score (on the right hand scale). Regions 3, 4 & 11 (Georgetown) consistently average more than the weighted rural region average. The apparent decline in 2005/06 has continued in 2006/07 in English and Science scores, Math has a level similar to 2005/06 and Social Studies were at their highest level since 2001/02.

⁵⁹ Age of students sitting SSEE could be examined – especially if some schools are encouraging Grade 5 students to sit SSEE as experience practice for sitting SSEE at the end of Grade 6.

⁶⁰ . Enrollment data for 2006/07 were not available (Table 4.2).

Figure 4.4



Source: Table 4.3 data

4.18 **Poor primary outcomes provide a poor foundation for achieving USE.** English scores in 2006/07 are lower than their 2001/02 level. The reasons for this decline warrant further examination by NCERD, especially if identification of poor performance on particular competencies can assist teacher in-service and student learning. If the decline is attributable to higher primary completion rates and the increased numbers entering SSEE, the Ministry requires a national strategy to improve Primary teaching and to attempt to arrest this decline in student outcomes.

Transition from Grade 6 to Grade 7

4.19 The end of primary school is the first transition at which students may be “lost” from the education system. It is also a transition in which Primary Tops have a distinct advantage – students do not have to change school to proceed to Grade 7. There may be an offsetting disadvantage – overage students in Grade 6 progress to Grade 7 because they are too old to sit SSEE for entry to GSS. The age-limit on SSEE warrants review so that older students in rural schools are not penalized.

4.20 **Transition measures are distorted by high repetition rates** – in Grade 6, high repetition may overstate apparent “drop out” and, in Grade 7, high repetition may overstate the real level of progression. The model in **Table 4.4** is approximate, as only 2003/04 Grade 7 repetition data were available (from the 2004/05 Statistical Digest). Values in green-shaded cells require updating from the new Statistical Digest, and could affect the values in cells shaded tan.

4.21 There are wide variations between Regions in Grade 6 and Grade 7 repetition rates and discussion of these rates should be included in the analysis of SSEE outcomes recommended above.

Table 4.4: Grade 6/7 Transition Rates (excluding Grade 7 repetition)

Region	Grade 6 2003/04 (A)		Grade 7 2004/05 (B)		Grade 7 Repeats 2003/04 ⁶¹ (C)		Net Progression (B-C)/A		
	Male	Female	Male	Female	Male	Female	Male	Female	Total
R1789	976	912	1279	1148	260	167	104%	108%	106%
R2560	3010	2978	3280	3141	438	221	94%	98%	96%
R3411	4485	4375	4961	4454	1122	603	86%	88%	87%
Total	8471	8265	9520	8743	1820	991	91%	94%	92%

Source: MOE Statistical Digests

- 4.22 As net progression rates should not exceed 100%, the Hinterland net progression rates require further examination to identify Grade 7 “first” enrollments or re-enrollments by students not in Grade 6 the previous year.
- 4.23 The net transfer of better performing students from hinterland and rural schools to Georgetown (and to President’s College in Region 4) should reduce hinterland progression rates and the R3, 4&11 rates could exceed 100% (or be closer to 100%). Alternative explanations could be even greater attrition in the more rural parts of Regions 3 and 4 or that 2003/04 repetition rates were higher than in 2004/05. This warrants further examination by the Ministry and discussion with Regions.
- 4.24 **A serious implication for USE would be that students in the urban/coastal regions are not continuing into secondary education.**⁶²
- 4.25 In summary, an average progression rate of 92% suggest that **Guyana will have difficulty achieving the USE target that 75% of primary school leavers will have access to a five-year secondary education program.** Poor primary learning outcomes and high attrition between Grade 6 and Grade 7 may already determine that many primary students lack the competencies to succeed in secondary schools. This could explain part of the lower male student participation in urban/coastal areas.

Student attendance

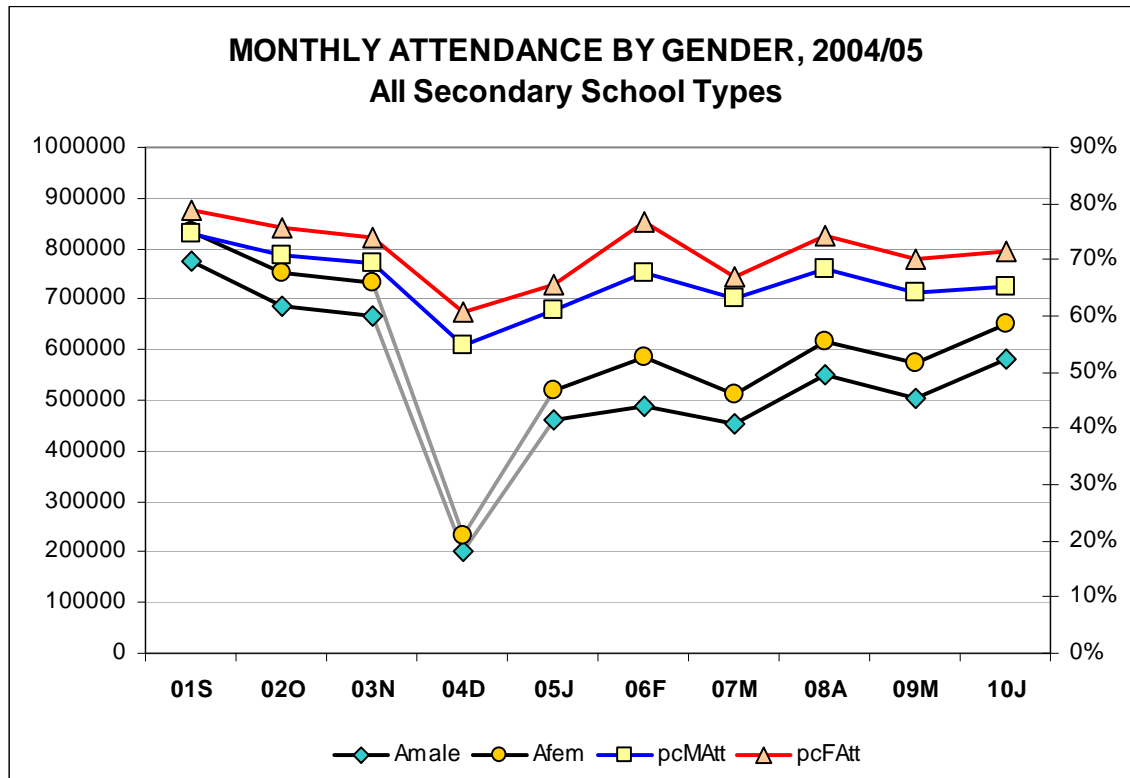
- 4.26 Chapter 2 examines Student attendance by region and level of schooling. Major observations include:
- Female students have higher attendance than males at each level of education;
 - GSS average 80%, but Primary Tops and Community High Schools only 60%;
 - USE should include an attendance target.
- 4.27 **Figure 4.5** shows the 2004/05 pattern of monthly attendance, by gender for 235 out of 348 secondary schools⁶³. The black lines show numbers of sessions attended by gender, and the impact of flooding in December/January in that school year. The red line shows female attendance rates above male attendance rates (blue line) each month.

⁶¹ Update with 2004/05 data when available in the 2005/06 Statistical Digest.

⁶² There is no published data on Grade 6 students who leave Guyana for secondary education in other Caribbean countries.

⁶³ With 159/240 Primary Tops, 17/24 CHS and 59/82 GSS, it is assumed that they “represent” all schools.

Figure 4.5



Month Sessions	Sept	Oct	Nov	Dec	Jan 05	Feb	March	April	May	June	TOTAL (a)
M: attend	774532	687206	668069	202914	461946	490254	455108	550023	503000	581464	5395741
M: enroll	1036876	971591	964566	371562	756094	725759	719205	804197	783672	890351	8051321
%Attend	74.7%	70.7%	69.3%	54.6%	61.1%	67.6%	63.3%	68.4%	64.2%	65.3%	67.0%
F: attend	832501	751736	733243	231159	521135	583460	511435	617379	575577	649881	6035657
F: enroll	1057574	991032	993279	380550	794216	760148	761874	832765	820134	909868	8331426
%Attend	78.72%	75.85%	73.82%	60.74%	65.62%	76.76%	67.13%	74.14%	70.18%	71.43%	72.44%

Source: MOE data. Attachment D5 (a) Total includes July attendance (mostly Grade 12)
 Attendance = sessions attended as a percentage of enrollment times the nominal number of sessions.
 Months are numbered 1=September through 10=June to facilitate sorting results by month.

4.29 Regional patterns by gender in **Figure 4.6** reflect the aggregate trends in Table 4.6, with some notable variations – Sessions attended are on the left-hand scale and the lines in the bottom half of Figure 4.6. The Coastal/Urban regions including Georgetown (R3, 4&11) have more sessions attended (black=Female; red=Male) except following the flooding when they took longer to recover. Regions 2, 5, 6&10 had more sessions until a seasonal downturn in March 2005. The hinterland regions (R1, 7, 8&9) were less affected by the lowland/coastal flooding but have fewer students resulting in fewer total sessions. R1, 7, 8&9 has more male students so that male and female sessions are approximately equal.

Figure 4.6

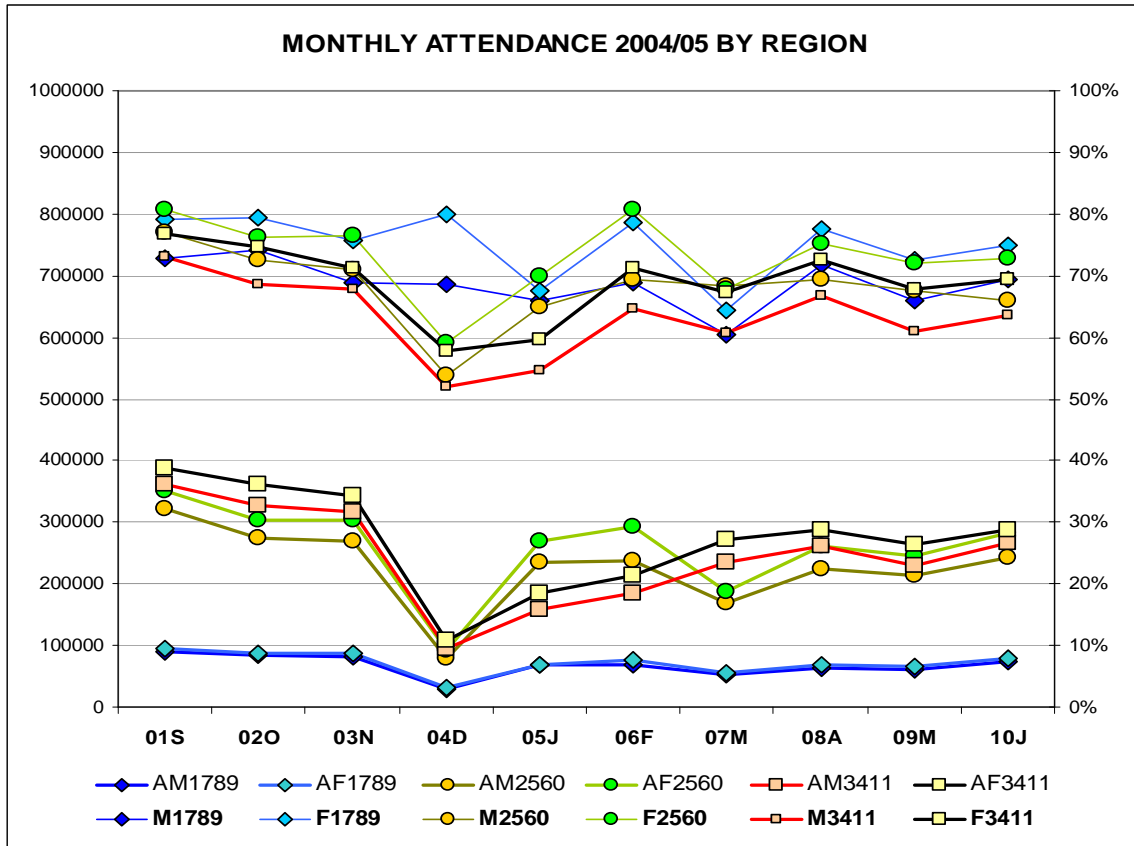
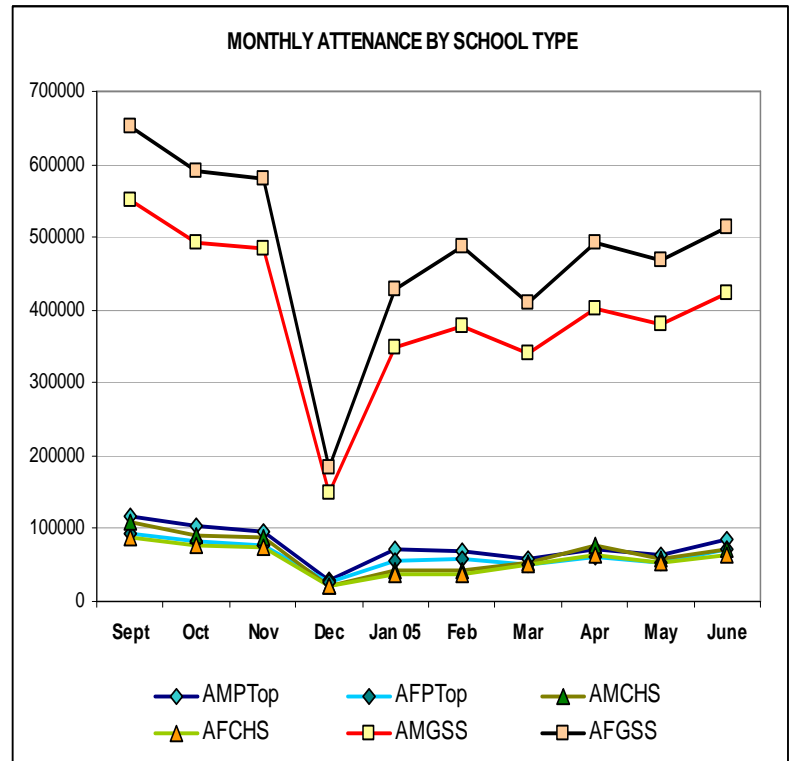


Figure 4.7

4.33 Being larger and urban, GSS account for most students and most of the attendance sessions in **Figure 4.7** (Female black lines; Male red lines). Primary Tops and CHS account for fewer than 100,000 student sessions for males and females in almost every month.

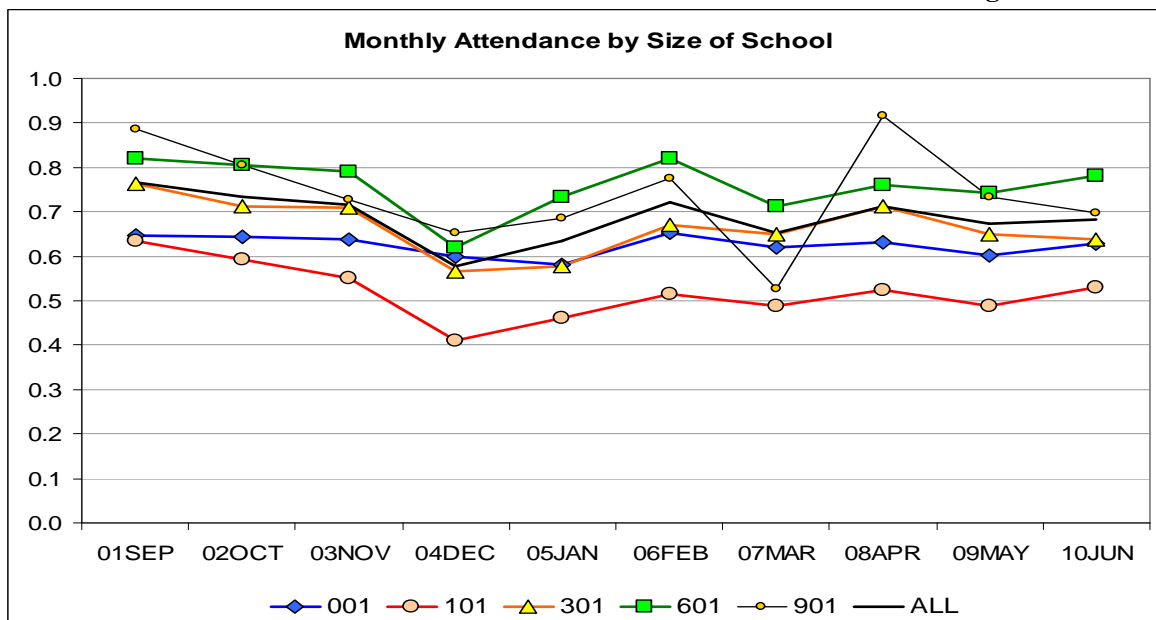


4.34 Female attendance exceeds male attendance in every month. In **Attachment D5**, attendance by male students in Primary Tops exceeded 60% in September 2004, while Female attendance exceeded 60% in September, October and February 2005. CHS had a similar pattern with December 2004 under 40% (flooding in R3, 4&11).

4.35 GSS, by contrast with CHS and primary tops, reported no month less than 60% and several months >75%. Monthly attendance rates are plotted in Attachment D5.

4.36 As these tables/graphs use individual schools data, **Figure 4.8** can present the same data by size of school. This could also provide a check on the point at paragraph 4.27 about whether reported data are representative of all schools.

Figure 4.8



- 4.37 If CXC does not include an attendance requirement for candidates, it would be difficult to see the average student meeting external examination requirements with less than 80% face-to-face contact time with their teachers⁶⁴. Able students may have skills in self-directed learning, but should perform better with contact time with skilled, experienced teachers.
- 4.38 External examinations (CSEC) as a goal for USE may determine the Grade 11 calendar but that should not determine term dates for Nursery, Primary and lower Secondary classes. As suggested at 4.44, Regional Departments should have sufficient flexibility so that the school calendar in their region can be adjusted to maximize student instructional time.
- 4.39 Possible responses to seasonal variations in student attendance:
- **Option A:** Some regions could start their school year at the beginning of August, or operate Mondays through Saturdays in “dry” months, and adjust term dates to minimize the school weeks lost in “rainy” seasons, high river flows, flooding, planting and harvest seasons. This is not a cosmetic or “band-aid” solution, but an effective response to particular needs in some Regions. Other than community negotiations and information about approved school calendar, the effective school year and curriculum could be improved **with no additional** cost to Budget.
 - **Option B:** A more radical option could be to use residential school facilities for intensive CSEC preparation courses during January-February, enabling students from smaller rural schools access to facilities such as science laboratories, resources and experienced teachers not otherwise available. There are budget implications – transporting students to and from the residential schools, the need to rearrange the school calendar for lower grade students in dormitories, and possibly combining in-service training/retraining for rural teachers in parallel with the CSEC preparatory courses.

Grade 7 to Grade 11 Progression

- 4.40 In Chapter 2, Table 2.11 presented data on progression from Grade 7 in 2001/02 school year to Grade 11 in 2005/06, by region and by gender. **Table 4.7** presents cohort survival rates *using the same data* for the three broad regions used in this Review, as well as corresponding data for the 1997/98-2001/02 cohort.

Table 4.7: Grade 7 to Grade 11 Cohort Progression (Survival) Rates

Year	Region	Schools	Males G07	Female G07	Male G11	Female G11	Male Students	Female Students	Total Students
05/06	R1789	118	1226	1121	193	246	3723	3736	7459
05/06	R2560	108	3465	3372	1185	1597	11925	12803	24728
05/06	R3411	112	4883	4474	1476	2011	16826	17563	34389
05/06	Guyana	338	9574	8967	2854	3854	32474	34102	66576
01/02	R1789	122	960	930	78	80	2750	2793	5543
01/02	R2560	135	3018	2916	1204	1651	11584	12151	23735
01/02	R3411	124	5072	4602	1558	2027	17476	17837	35313
01/02	Guyana	381	9050	8448	2840	3758	31810	32781	64591
97/98	R1789	109	751	701	57	80	2331	2277	4608
97/98	R2560	165	3044	3020	1087	1606	11430	12212	23642
97/98	R3411	143	4301	3936	1332	2053	16245	16758	33003
97/98	Guyana	417	8096	7657	2476	3739	30006	31247	61253

Source: MOE Statistical Digests. Attachment D6 (G7_G11_completion.xls)

⁶⁴ *Teacher absenteeism* has greater impact because all children in the class are disadvantaged, and other grades may be disrupted by children present without a teacher. There is no published data on attendance.

4.41 Of 17,498 students in Grade 7 in 2001/02, some 6,708 or 38.3% were still present in Grade 11 in 2005/06 (tan cells). Comparable data for Grade 7 intake in 1997/98 (light green cells) showed that 41.9% of students continued. Part of the decline in the overall rate is the increased number of Grade 11 students who continued in Hinterland regions (R1, 7, 8&9) – from 158 in 2001/02 to 439 in 2005/06. Cells colored light yellow in **Table 4.8** show R1, 7, 8&9 completion increased from 10.9% to 23.2% - a major USE achievement, but still well below the national average.

Table 4.8 Cohort Survival Rates

2001/02 - 2005/06			
Region	M11/ M07	F11/ F07	All 11 /All 07
R1,7,8,9	20.10%	26.45%	23.23%
R2,5,6,10	39.26%	54.77%	46.88%
R3,4,11	29.10%	43.70%	36.05%
Guyana	31.54%	45.62%	38.34%
1997/98 - 2001/02			
Region	M11/ M07	F11/ F07	All 11 /All 07
R1,7,8,9	10.39%	11.41%	10.88%
R2,5,6,10	39.55%	54.67%	47.08%
R3,4,11	36.22%	51.50%	43.52%
Guyana	35.08%	49.08%	41.88%

4.42 *Decline in male and female completion rates in Region 3, 4&11 should be of greater concern* – Male completion was down from 36.2% in the 1997/98-2001/02 cohort to only 29.1% (pink cells) in 2005/06. Female rates in R3, 4&11 also declined (from 51.5% to 43.7%).

4.43 Elsewhere this Review asks whether the declining participation is an economic /market (pull) factor or a curriculum/ competency (push) factor. The Ministry cannot control market forces but its USE strategies should respond to any educational factors which affect completion of secondary school.

CXC Examination outcomes

4.44 The SSEE commentary at paragraphs 4.12, 4.18 and 4.25 recommended an analysis of results to identify those competencies where students from rural schools under-perform. The same issues apply to CXC performance, especially as **CXC outcomes are a major USE objective**.

4.45 **Tables 4.9 and 4.10** compare Guyana performance in English and Math over the past 8 years, and show the marked increase in total candidates since 2002. These tables update data reported in the GEAP Project Completion Report (December 2006) with 2007 scores. The percentage Grade I-III passes are also shown, as Grade III is the minimum standard for university admission.

4.46 At 70%, overall Grade I-IV passes in English may appear satisfactory, but Grade I-III passes were less than 50% in most years. **Math performance should be of even more concern**. In 2005, Guyana achieved 50% at Grades I-IV but only 30% at Grades I-III (the USE target for 2010 is 35%). CXC performance declined in 2006 and 2007.

4.47 There is a limitation in the NCERD analysis of CXC results – **the analysis is of subject entries rather than candidates** – the USE objectives refer to 35% of secondary school leavers after five years of secondary education will have achieved CXC Grades 1-3 General Proficiency in Math and 40% achieving CXC Grades 1-3 in five subjects. The Ministry should request NCERD to report candidate performance against these USE outcomes.

Table 4.09

Year	English Entries	Passes	%Grade 1-4	%Grade 1-3
2000	5546	3147	56.7%	25.8%
2001	5561	3564	64.1%	36.1%
2002	5474	3305	66.6%	34.5%
2003	7749	5275	68.1%	37.4%
2004	7791	5077	65.2%	33.2%
2005	8047	6429	77.9%	51.9%
2006	7608	5448	71.6%	39.5%
2007	8011	5824	72.7%	40.1%

Table 4.10

Year	Math Entries	Passes	%Grade 1-4	%Grade 1-3
2000	4838	1944	40.2%	24.5%
2001	5020	1672	33.3%	19.6%
2002	4980	1480	38.7%	23.1%
2003	7450	3343	44.9%	24.8%
2004	7571	3401	44.9%	25.7%
2005	7739	4022	52.0%	30.2%
2006	7474	3241	43.4%	25.2%
2007	7841	3262	41.6%	23.9%

Figure 4.09

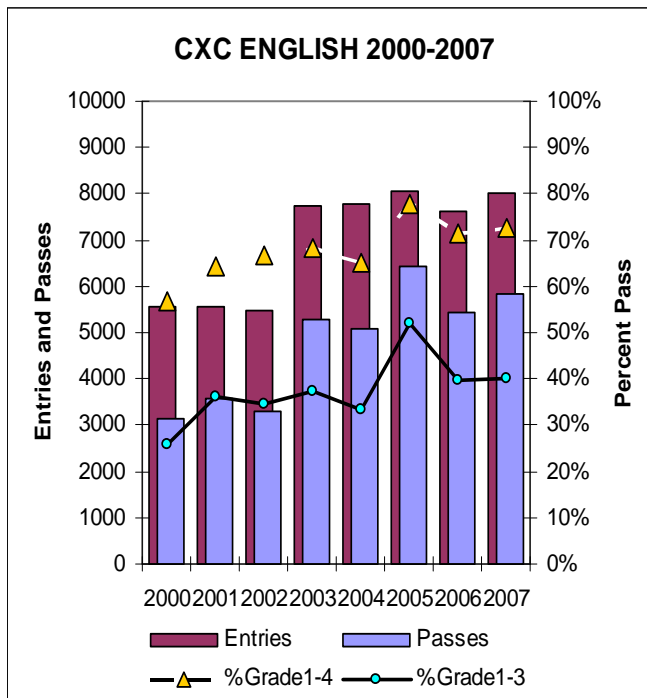


Figure 4.10

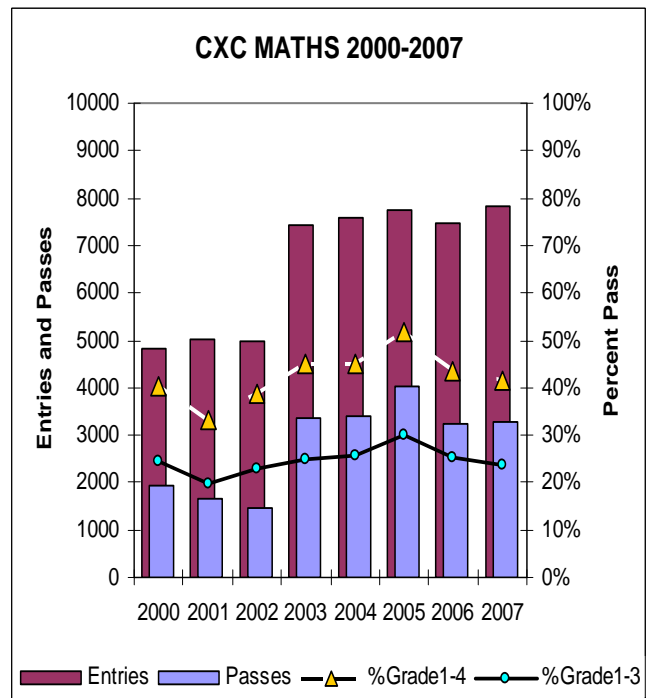


Table 4.11 Performance against USE 35% Math Objective

	2000	2001	2002	2003	2004	2005	2006	2007
Grades 1-3	1435	2006	1590	2898	2583	4280	3004	3214
Grades 1-4	3147	3564	3305	5275	5077	6429	5449	5824
English A	5550	5560	4962	7746	7787	8253	7610	8011
Grades 1-3	1185	982	862	1856	1942	2435	1886	1876
Grades 1-4	1944	1672	1480	3343	3401	4022	3241	3262
Mathematics	4836	5006	3814	7462	7558	8060	7468	7841
Against 35% USE Objective	21%	18%	17%	24%	25%	30%	25%	23%

Source: NCERD Volume 1 (September 2007); CXC2007.XLS

Tables 4.09 and 4.10 differ from 4.11 due to rounding.

Table 4.12 Reported CXC Passes by Public Schools in Guyana, by Region, 2007

Region	R1789	R02	R03	R04	R05	R06	R10	R11	Guyana
Level I	41	329	231	269	68	462	115	1450	2965
Level II	275	818	819	772	260	1290	491	2814	7539
Level III	633	1046	1423	1282	906	2033	795	3265	11383
Level IV	521	754	1011	798	835	1382	489	2162	7952
Level V	521	571	786	563	689	1174	354	1471	6129
Level VI	70	76	96	81	100	171	23	117	734
%PASS	0.7755	0.8200	0.7980	0.8290	0.7239	0.7935	0.8337	0.8592	0.8130
W PASS	2.28	2.66	2.46	2.62	2.02	2.51	2.60	2.89	2.59
Schools	9	5	9	9	6	16	6	26	86

Source: NCERD September 2007 (Volume1); “w Pass” is weighted Pass rate. (CXC2007.XLS)

- 4.50 Understanding where Guyana students are underperforming is an important step in identifying how CXC performance can be improved. This should be linked to teacher in-service and retraining.
- 4.51 NCERD (Volume 1, pages 31-33) reports total Grade 1-4 passes by school and by region in 2007. Hinterland regions (R1, 7, 8&9) have been aggregated because of the small number of schools in each Region.
- 4.52 The percentage Grade 1-4 passes in **Table 4.12** may be misleading because the only Grades 1-3 count for university admission. NCERD analysis counts “passes” but not the “quality” of the passes. The 26 schools in Georgetown (R11) had a “weighted” pass score⁶⁵ of 2.89 followed by 2.66 in Region 2, 2.62 in Region 4 and 2.60 in Region 10. At the other extreme, the Hinterland schools averaged 2.28 and Region 5 averaged 2.02.
- 4.53 Regional CXC variations within Guyana are presented in **Figure 4.11**, showing Level III as the modal value in each region. Georgetown (Region 11; shaded orange) has the highest numbers at each level I-V (but not Level VI) and a greater proportion of Level I and Level II passes. As already noted, Georgetown schools attract the best students from rural regions. The high outcomes for these “selected” students need to be balanced against poor outcomes for 7 CHS with 16.1% of Georgetown’s 17,824 secondary students in 2004/05. Grade 10 and 11 students represent 22.6% of CHS enrollment in Georgetown but NCERD data

⁶⁵ Passes weighted with a maximum 5.0 if all candidates achieved Level I passes. This “weighted” value has been added to the NCERD analysis by counting each Grade 1 pass as 5, each Grade 2 pass as 4, each Grade 3 as 3 and Grade 4 passes as one. The sum is divided by the total candidates (including Grades 5 and 6) to show the weighted pass rate.

indicate that no Georgetown CHS school presented students for CXC (or they transferred to a GSS to sit CXC). Region 6 had the second highest CXC subjects presented, and second highest number of passes at each level (except VI).

Figure 4.11

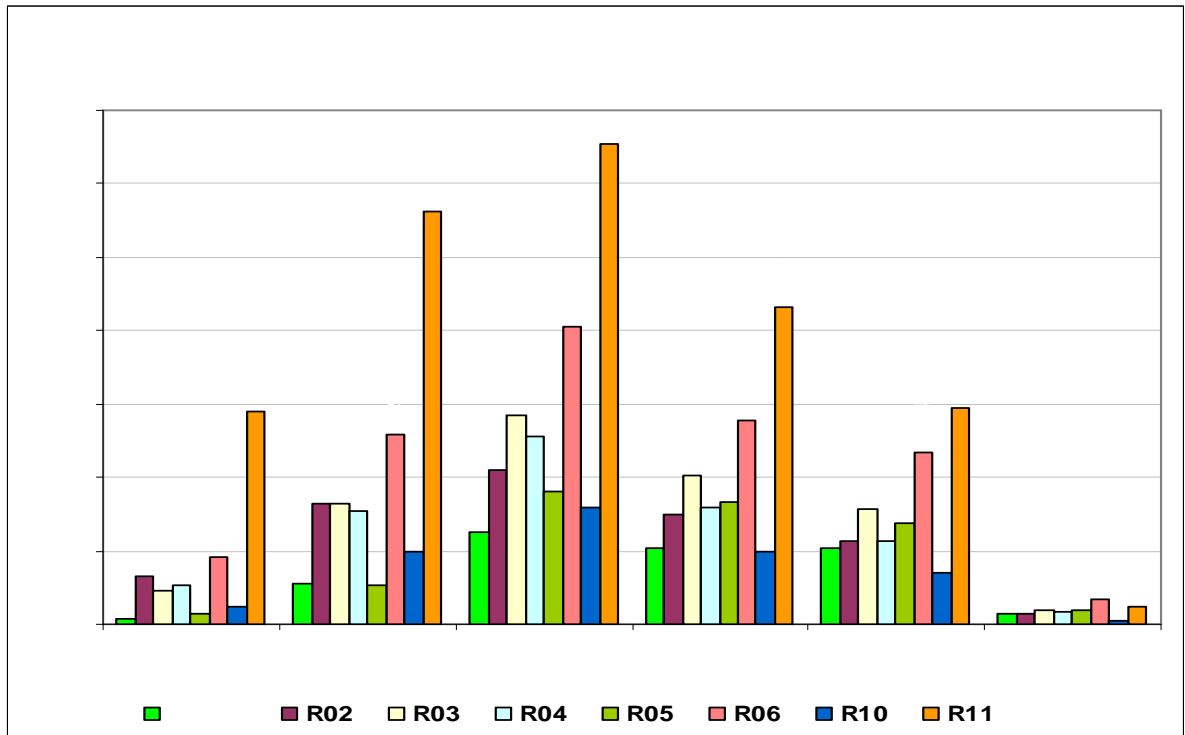
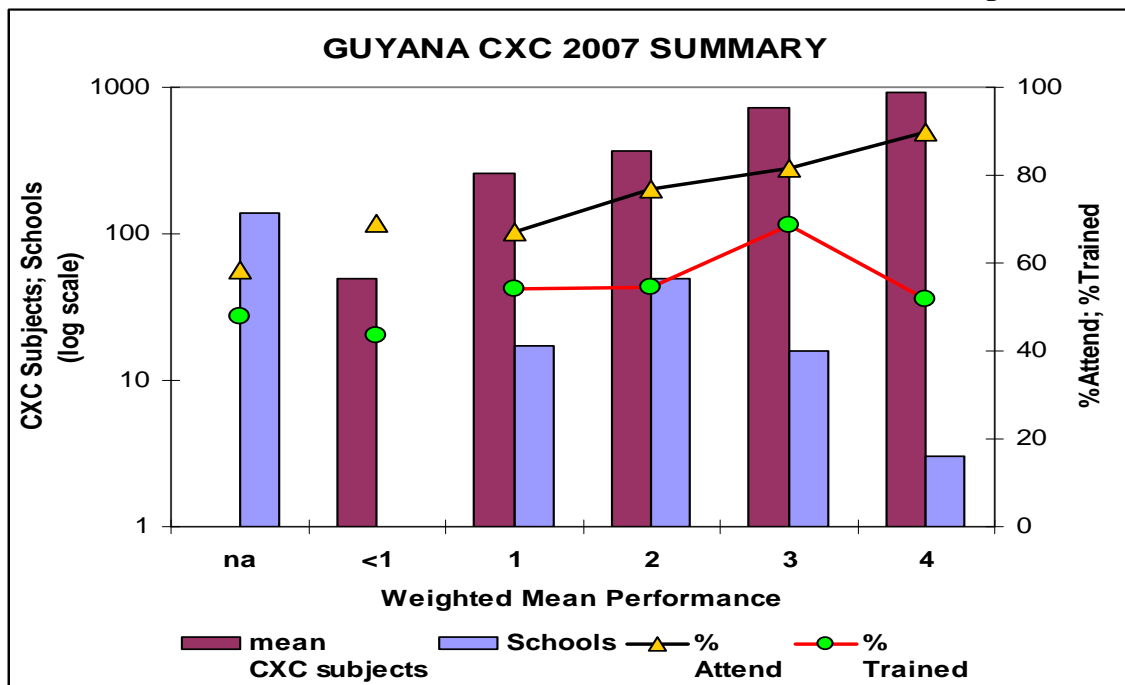


Table 4.13: Average School Performance at CXC 2007

Weight	Mean CXC subjects	Schools	% Attend	% Trained	R1789	R2560	R3411	Total CXC
Na	0	137	58.3	47.9	56	45	36	0
<1	49	1	69.2	43.5			1	49
1	258	17	66.9	54.0	1	12	4	4,381
2	367	49	76.7	54.4	7	16	26	17,959
3	723	16	81.6	68.7	1	4	11	11,565
4	916	3	89.7	51.7		1	2	2,748
>0	427	86			9	33	44	36,702
		223			65	78	80	

Source: CXC 2007 (CXC2007_REG0_X002.sql)

Figure 4.12



4.57 Regional performance on CXC reflects the mix of secondary schools by type in each Region. In the hinterland regions, only 9 out of 65 schools (0/55 Tops; 9/10 GSS) had students present CXC subjects, in rural coastal Region 2560, 33/78 schools (0/41 Tops; 1/5 CHS; all 32 GSS) and in coastal urban R3411, 44/80 schools presented candidates (1/23 Tops⁶⁷; 5/17 CHS and 38/40 GSS).

4.58 **CXC Performance and School Size:** Chapter 3 identified the link between school enrollment (“size”), teacher number and subject offering. Complementary data are presented below in **Table 4.14** showing school enrollment and CXC candidature.

- Hinterland schools had fewer than 500 secondary students⁶⁸;
- Regions 2, 5, 6&10 had most schools between 401 and 800 secondary students;
- Regions 3, 4&11, particularly Georgetown, had most schools with 301-900 students.

⁶⁷ Cove&John is recorded in MOE data as a Primary Top but is a Secondary School with 112 students.

⁶⁸ Bartica GSS is the exception with more than 1000 students (a second school is under construction).

4.59 **Table 4.14** shows the distribution of the 86 schools with CXC candidates (in 2007) by the total school enrollment (in 2005) and by Region. The tan shaded cells show the concentration of schools in Regions 11 and 6.

Table 4.14: Distribution of Schools by Enrollment (2005) and by Region (grouped)

Region	Reg	N=	Mean CXC	Percent Attend	Percent Trained	101	151	201	301	401	501	601	701	801	901	CXC
R1,7,8,9	R01	3	199	67.8	61.9			1		2						597
R1,7,8,9	R07	2	328	74.3	83.7				1						1	655
R1,7,8,9	R08	1	234	87.8	23.1					1						234
R1,7,8,9	R09	3	192	78.8	38.1		1	1	1							575
2,5,6,10	R02	5	719	80.5	75.4						1	1		1	2	3594
2,5,6,10	R05	6	476	67.0	53.9				1		1	3	1			2858
2,5,6,10	R06	16	407	77.3	54.8		1	2	3	1	3	5			1	6512
2,5,6,10	R10	6	378	80.1	66.1				1			2	2	1		2267
R3,4,11	R03	9	485	78.1	61.5				2	1	3		3			4366
R3,4,11	R04	9	418	63.2	60.6	1	1		2	2	2		1			3765
R3,4,11	R11	26	434	79.4	49.9				3	4	7	4	4	3	1	11279

4.60 The cells in **Table 4.15** show the numbers of trained graduate teachers by school enrollment and weighted CXC scores. Note the column showing Graduates as a percentage of trained teachers – in the three best performing schools, graduates are almost half the trained teachers.

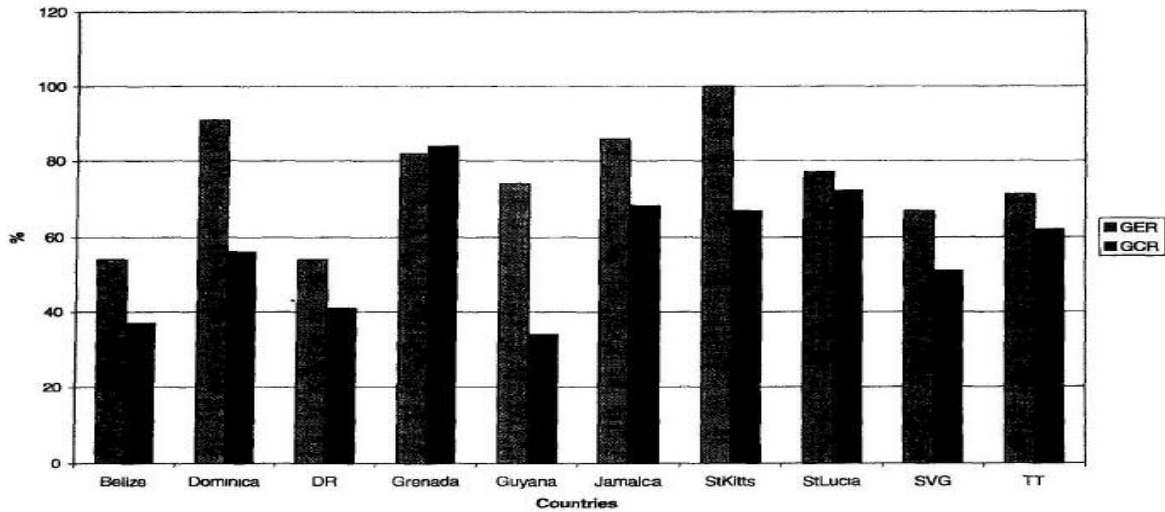
Table 4.15: Trained Graduate Teachers by School Enrollment and CXC Weight (2007)

Weight	Schools	Mean Enrolled 2005	Mean CXC /School	Percent Attend	Percent Trained	Graduate %Trained	101	151	201	301	401	501	601	701	801	901
0	1	445	49	69.2	43.5	20.0					2					
1	17	526	258	66.9	54.0	13.7			1	2	10	10	6	1		2
2	49	558	367	76.7	54.4	16.1	0	1	1	12	7	36	18	27	11	4
3	16	676	723	81.6	68.7	22.9				2	17	13	23	18	2	7
4	3	589	916	89.7	51.7	46.8				7			11	11		
	86						0	1	2	23	36	59	58	57	13	13

Comparisons between Guyana and Other CXC Countries

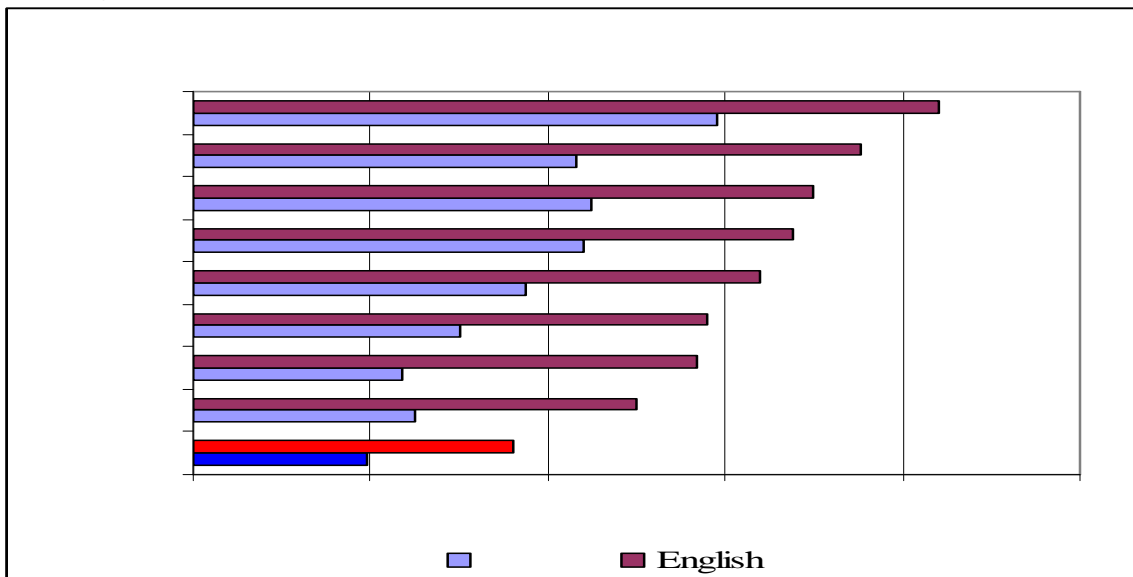
4.61 In 2003, a comparison of cross-country performance based on 2001 CXC data was published in *Monitoring educational performance in the Caribbean* (World Bank Report 24337: Chart 4, page 35). That Report showed that Guyana's secondary gross completion rate (GCR) fell behind most other Caribbean countries.

Chart 4: GERs and GCRs in Secondary Education for 10 Caribbean Countries



4.62 On CXC performance in Math and English, Guyana had the poorest performance of the nine countries reported in the 2001 data. Even with caveats about differences in the education systems and St Kitts, St Vincent and Dominica having small numbers enrolled in the final year of secondary school, Guyana's percentage passes in Math (blue bar) and English (red bar) in **Figure 4.14** are the poorest.

Figure 4.14



- 4.63 Later data were not available to permit a comparison between Guyana schools performance and those of other Caribbean countries. Such analysis requires unit record data (for schools and for individual students) rather than subject averages. **It would be more appropriate for NCERD to undertake such an analysis for at least English and Math.**
- 4.64 If NCERD can construct a measure of Guyana performance against comparable Caribbean countries, it should take into account gross enrolment rates, Grade 11 as a percentage of Grade 7 enrolment, total numbers completing Grade 11 and the distribution of scores on each subject. In the above graph, the Dominican Republic had about 13 times the Guyana enrolment in the last year of secondary. Grenada, by contrast, had approximately one-quarter of the Guyana enrolment.
- 4.65 This analysis could be combined with some measure of the percentage of students achieving Grade 3 or higher passes in at least five CXC subjects. This USE indicator for Guyana was only reported for two of the smallest Caribbean countries in 2001 (St Kitts & Nevis; Grenada). If English and Math are included in the five CXC subjects, this should focus greater attention on strategies to improve Math teaching, learning and outcomes in Guyana.

Summary of Challenges to Secondary Student Outcomes

- 4.66 This review has identified six challenges or threats to achieving USE targets. In the absence of household expenditure data for Guyana, it is assumed that the two poorest population quintiles (the “bottom” 40%) do not continue and complete secondary education – rural areas for lack of opportunity and in urban areas from dissatisfaction/lack of relevance in the curriculum offered by schools which measure success in CXC outcomes. Access is the **first curriculum challenge** to the achievement of Universal Secondary Education.
- 4.67 The availability and skills of teachers is **the second challenge** to a USE curriculum. Chapter 3 identified major differences in teacher quality (with qualification and training status the only available measures) by type of school (GSS, CHS, Primary Tops) and by the enrollment (“size”) of the school. In 2005/06, there were 124 “schools” offering secondary education in Hinterland Regions – these schools reported only nineteen (19) Math teachers from a total 291 teachers. Twelve of the 19 Math teachers were “trained”. The smaller the school, the fewer subject specialist teachers, and a majority of teachers were untrained.
- 4.68 Rural-urban differences in educational opportunity and performance occur for many geographic and economic reasons which are outside the control of an Education Ministry. The **third challenge to a USE curriculum** is identification of the reasons for poor performance and staffing, administrative or organizational changes which could improve performance of students in rural schools.
- 4.69 Size of school and the concept of a minimum viable school curriculum are discussed in previous Chapters. One strategy could be to improve the staffing and facilities so that schools attract more students and can demonstrate improved performance. Construction of more GSS in remote hinterland regions could be difficult to justify if the school cannot attract sufficient students to become viable.

- 4.70 Reducing the migration of the best SSEE students from rural areas to schools in Georgetown is **the fourth challenge to USE**. In some hinterland Regions, the question for the Regional Education Office (and the community) is how to ensure viable secondary schools. Port Kaituma CHS (Region 1) had 18 students in Grade 10 in 2005/06 and a total of only 56 CXC subject entries in June 2007. Conversion to a GSS would be warranted if it improves enrollment, improves attendance and attracts better staffing. Bartica GSS (Region 7) presents a different challenge – it had 213 students in Grade 10 in 2005/06 but submitted only 241 CXC subject entries at June 2007. Waramadong GSS (also Region 7) had 74 Grade 10 students in 2005/06, submitted 414 CXC entries but only 53.6% achieved Grade 4 or higher.
- 4.71 In rural coastal areas, conversion of CHS to GSS and consolidation of Primary Tops as GSS should help achieve USE, provided enrollment, attendance and staffing can create viable secondary schools.
- 4.72 In Chapter 6, hinterland regions spend more per secondary student and school boarding/accommodation contribute to these higher costs. Attracting/retaining qualified teachers adds to the cost per student. Higher unit costs are unavoidable in small schools – if it is not feasible to attract more students, the management issue should be to spend available funds to maximize the educational outcomes for the existing students. Sending students to larger schools for special units of study and bringing itinerant/peripatetic teachers to the school for specialized instruction have been discussed as ways in which small schools can strengthen student outcomes.
- 4.73 The **fifth USE challenge is improving primary education performance** (SSEE outcomes in Tables 4.2 and 4.3 above), and transition from primary to secondary education – so that all children can access quality secondary education. The **sixth USE challenge is improving student attendance** across all schools in Guyana.

Recommendations for further action

- 4.74 Without action on each of these challenges, secondary schools in Guyana cannot achieve USE targets and produce competitive results for Guyana students at the CXC. In many cases, Guyana requires analysis of student performance by region, by gender, by size of school and by quality of available teachers.
- 4.75 Improving NCERD analysis of SSEE entries and outcomes (see 4.5, 4.10, 4.12, 4.18), MOE analysis of Grade 6/7 transition, repetition rates, attendance and Grade 11 completion rates (see 4.20, 4.23, 4.31, 4.44), and NCERD analysis of unit record CXC data (see 4.49-4.53, 4.57, 4.63) would assist Regional Departments target improved student outcomes.
- 4.76 One immediate step could be inclusion of a Grade 7-11 student attendance as a USE target.
- 4.77 Improving qualifications and training of teachers are discussed in Chapter 3. Strategies which improve teacher satisfaction will improve retention, teacher attendance and student outcomes.

Chapter 5: Schools and Infrastructure

- 5.1 This chapter builds upon issues of school size and viability in Chapter 1, trends in population and enrollments (Chapter 2), the number of qualified teachers (Chapter 3) and student learning outcomes (Chapter 4) to argue for some balance between investing in facilities and investing in teaching/learning. New schools are required, especially in lowland areas where primary “tops” can be consolidated as General Secondary Schools, and investment would be justified to upgrade existing facilities and convert CHS to GSS, to improve water/sanitation and to provide electricity.
- 5.2 New school construction is necessary but will not be sufficient to achieve USE. Unless more students complete primary with basic skills to success in grades 7-11, **low student “demand” for secondary education and a shortage of qualified teachers not the supply of school places will prevent Guyana achieving USE.**
- 5.3 This review was not required to assess the condition of existing schools, or demand for rehabilitation of facilities. Success of the SSRP, GEAP and BEAMS projects in promoting community ownership and use of its schools, combined with preventative maintenance, should be encouraged. Minimum rather than “ideal” standards for facilities should be enforced for all public and private schools, especially in communities which lack the resources to maintain public facilities.
- 5.4 One important lesson from recent projects in Guyana is that construction and school rehabilitation are accompanied by strategies to improve enrollment, improve attendance and reduce student “drop-out”. Attracting and retaining qualified teachers are discussed in Chapter 3 must complement strategies to increase student “demand”. Fast Track Initiatives in hinterland regions include construction of teacher housing. If these prove effective, there could be a case for construction of secondary teacher accommodation in localities where staffing is difficult.
- 5.5 The major change has been an increase in General Secondary School enrollments over the past decade – not through the construction of new schools, but a net shift of students from primary tops and CHS and an increase in average GSS enrollment (from 539 in 1995/96 to 551 in 2000/01 and to 580 in 2005/06). **Table 5.1** presents these trends - the numbers of CHS and GSS have remained almost unchanged since 2001/02. The number of “Primary Tops” classes has declined but enrollments have remained around 10,000 students.

Table 5.1 Secondary Schools and Enrollments by Type of School, 1995/96 to 2005/06

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06
P.Tops (classes)	311	311	312	310	305	284	276	276	263	243	244
CHS (schools)	37	37	36	35	33	24	24	24	24	24	24
GSS (schools)	65	67	68	69	70	79	81	82	82	82	82
PTops (students)	15,056	13,439	13,162	12,376	12,653	11,267	10,531	10,170	9,916	10,133	10,300
CHS (students)	13,294	14,083	12,421	12,764	13,787	10,369	10,187	9,294	9,326	9,202	9,256
GSS (students)	35,015	34,521	35,670	36,776	36,055	43,526	43,873	42,960	46,149	46,303	47,585
SECONDARY	63,365	62,043	61,253	61,916	62,495	65,162	64,591	62,424	65,391	65,638	67,141
GSS%Secondary	55.3%	55.6%	58.2%	59.4%	57.7%	66.8%	67.9%	68.8%	70.6%	70.5%	70.9%

Source: MOE Statistical Digests. As for Table 2.1 (Chapter 2)

- 5.6 New school construction may include a redistribution of existing students rather than new capacity adding “new” students. Construction of two new schools with capacity for 800-1000 students does not add an additional 1600-2000 to the total enrollment. Two new schools, Diamond (Region 4) and a second GSS in Bartica (Region 7), will have smaller effect on total enrollments. Diamond should absorb students from some large Primary Tops and the second Bartica school will absorb students from Bartica GSS⁶⁹.
- 5.7 The impact of new construction could be further reduced by the proposed Ministry policy on placement of students at Diamond – setting a high SSEE entry score is inconsistent with the need for a “local” high school to provide better education for existing students in Primary Tops. It is possible for a “comprehensive” secondary school to do both – with two Grade 7 classes with entry based on SSEE scores, and a further three or four classes for children who reside locally.
- 5.8 Students from other areas who are placed at Diamond on their SSEE entry **do not add** to total enrollment – there is a corresponding reduction in enrollment at the school they would otherwise attend. If students with selected entry prevent all students in local Primary tops transferring to the new school, retention of smaller Primary Tops would be counter to both USE and the justification for building the Diamond school.
- 5.9 The impact of renovation and new construction is evident in the following extracts from the SSRP Implementation Completion Report in 2005. The estimated 3,000+ “new student places” on enrollment may be over-stated if the MOE norm of 40 students per secondary classroom is used rather than students per class ratio (25.6 in 2004/05). The extent to which students move from Primary tops or CHS to new places in GSS also overstates the increase in GSS enrollment.

**SECONDARY SCHOOL REFORM PROJECT:
IMPLEMENTATION COMPLETION REPORT (June 2005)**

Page 9: The outcome includes not only the improved learning and school physical environment at 12 pilot schools and 18 Emergency Repair Schools (ERS), but also a more equitable distribution of educational opportunities to students living in all regions of Guyana. Much of the growth in enrollment was facilitated by increases in the number of classrooms available in the schools as a result of the School Environment component of the project. Overall, physical improvements at the pilot schools and their conversion to GSS have resulted in a 39 percent increase in enrollment at the 12 pilots from 1996 to 2003, thus providing 2,029 more children access to general secondary schools and the full benefits of the lower and upper secondary education curriculum.

Page 10: The completion of emergency repairs at 18 secondary school facilities has provided space for 12,440 secondary students based on the MOE standard for number of students per classroom and square feet per student. This represents an increase of over 3,000 new student places spread out among the 18 schools. All regions, including the poorest, most isolated hinterland regions benefited, as there was at least one ERS school located in each region plus Georgetown.

- 5.10 The GEAP Project Completion Report (December 2006: page 12) noted that Project schools in Regions 6 and 10 had provided learning space for 6,705 learners, an increase of 2,940 places. As with the SSRP observation, many new places would be occupied by students in previously unsatisfactory classrooms and/or relocated from Primary tops and CHS.

⁶⁹ Bartica GSS had 1,080 students in 2005/06 and was the largest school in Guyana.

5.11 **Table 5.2** presents enrollment data for renovated schools and new construction undertaken by SSRP, BEAMS and GEAP Projects. The SSRP effects may be understated by increased enrollments prior to the 2000/01 school year. Conversion of Primary Tops to full GSS demonstrate that USE objectives can be achieved, provided the nominal benefits are not exaggerated.

5.12 It is the quality of student learning outcomes which are the real USE objectives, not the more visible impact on enrollment. Improved learning may reduce repetition rates and lower total enrollment, thus understating benefits of increased grade progression. Chapter 4 uses a ratio of Grade 11 students to the Grade 7 intake four years earlier and this may offer a better measure of benefits from new construction and rehabilitation. Increased Grade 11 enrollment and CXC outcomes for Wisburg GSS justifies GEAP-funded construction.

Table 5.2: Summary of Official Direct Assistance (ODA): SSRP, GEAP, BEAMS Projects – Renovation and New Construction and reported Enrollment Data

	Schools	MOE ENROL 2000	MOE ENROL 2004	Stud 2004	Stud 2005 Male	Stud 2005 Fem.	Stud 2005	Change on 2000
SSRP(1) ERS	19	10,515	11,394	11,119	5,165	6,276	11,441	+926
SSRP(2) Pilots	12	6,316	7,197	7,269	3,421	3,675	7,096	+780
BEAMS(1) Renovation	5	3,196	1,981	2,771	1,152	1,278	2,430	-766
BEAMS(2) new construction	3	521	615	615	343	310	653	+132
GEAP(1) Rehabilitation	6	3,701	4,168	4,173	1,842	2,241	4,083	+382
GEAP(2) new construction	2	291	1,101	1,050	847	754	1301	+1,010
Government funded	2	871	1,427	1,427	686	741	1,427	+556
TOTAL Construction	49	22,323	24,838	25,345	12,115	13,655	25,780	+3,457

Source: MOE Summary (December 2007). See Attachment J

5.13 Consolidation of CHS had a major impact on apparent GSS enrollment “growth”. If aggregate secondary enrollments are to stabilize and possibly decline after 2011/12 (see Chapter 2), Guyana can still make a major case for ongoing donor assistance in school construction – provided the justification is based on the quality of education offered and student learning outcomes. Feasibility studies will need to pay more attention to documenting baseline learning outcomes (in feeder Primary schools and in any Primary Tops or CHS being consolidated) so that evaluation of a new GSS at project completion is more detailed and comprehensive.

5.14 Providing a viable secondary education in “small” GSS requires special attention in national and regional USE planning. In contrast to higher performance in Regions 2 and 5, **only 13% of Region 1 and 11.5% of Region 8 students survived to Grade 11.**⁷⁰

5.15 As noted in Chapter 2, primary enrollments in hinterland regions have expanded at each age, and should increase further through EFA FTI activities. Increased access and improved quality in primary teaching and learning should increase demand for secondary education. These regions have mostly Amerindian populations in small, dispersed villages. Increased progression to secondary may require retaining secondary departments in many Primary

⁷⁰ Only 2/150 boys at Paramakatoi GSS and 7/102 boys at Mahdia GSS in Region 8 reached Grade 11 in 2005/06 (<4%) – assuming that this is not a data error, the Regional USE plan needs to respond to the causes of this problem.

schools, operating a cluster of secondary departments as a multi-site secondary school (with secondary teachers appointed to the central secondary school not the “host” primary school), appointing peripatetic (itinerant) teachers, in Math especially, to support teachers in small schools, or the provision of more scholarships and secondary boarding school places.

- 5.16 As part of Regional Plans, communities in each locality should identify options which are appropriate for their children. Boarding schools require greater capital expenditure and higher recurrent spending per student. Small dormitories attached to small CHS or GSS may give access to “some” secondary education, but not necessarily a “good” education. There may be savings in lower initial capital cost, but small dormitories cost more per student to operate in staffing, cleaning and utilities (especially if compared with a larger dormitory operating at near capacity).

Bartica Secondary School: The Government is committed to rebuilding the boys’ dormitory destroyed by fire in December 2007. There were only 26 boys (and 24 girls) boarding. The Government could turn disaster to advantage by constructing a larger dormitory than the one destroyed. Bartica GSS is currently the largest in Guyana, with a second GSS being constructed by the BEAMS Project.

For USE planning, would a larger dormitory provide better access to high quality secondary education for remote communities in Region 7?

- 5.17 An alternative to boarding facilities would be sufficient recurrent funding for teachers from the “central” secondary school to travel to satellite classes located in Primary Tops. There should be funding for students (and teachers) in satellite classes to travel to one location for selected whole school activities and to access specialist facilities such as science laboratories. As primary learning outcomes improve and enable more children to continue into secondary grades in General Secondary Schools, regional boarding school/s could focus on upper secondary grades with provision of specialist teachers and facilities to prepare students for CXC exams. Later entry to boarding may meet some of the reported Amerindian concerns and their reluctance to send younger children away from home.
- 5.18 Throughout this analysis, low students enrollment aggravates any effects of poverty and/or isolation. School “size” is not only a descriptive attribute of a school, size directly affects the number/s of teachers appointed, their qualifications and skills, the quality of teaching and the quality of learning. If size of school is determined by population distribution, the challenge for Guyana is the level of resources that small schools will need IF 75% of children completing primary school are to have access to a quality 5-year secondary education program (USE Outcome 1 for 2010). Guyana must invest more per student in small schools. Teacher impact is discussed in Chapter 3, impact on learning in Chapter 4 and the financial impact of higher expenditure per student in Chapter 6.
- 5.19 Unlike staffing ratios, which suggest that a given enrollment needs an agreed number of teachers to deliver a viable secondary curriculum, planning of school facilities has to be based on local considerations – the number of children in the community and distances students have to travel to a proposed school site. Regional departments need “local” plans, which also include renovation, upgrading or replacement of sub-standard facilities.
- 5.20 In the USE scenarios presented in Chapter 7 it has not been possible to model local factors. With local audits of existing school facilities and numbers of children completing Primary

schools, Regional departments should nominate their priorities for GSS construction. The Ministry role should be to recommend national priorities for new construction, to identify whether external assistance is available, and to present a case to Government for new capital expenditure.

- 5.21 Georgetown presents particular planning problems – with 15,000 secondary students in 25 GSS (an average 598 students/GSS) and many of these schools on having inadequate facilities and located on small sites. In addition there are 7 CHS, with an average 409 students and a total of only 51 students (<2%) in Grade 11 in 2004/05, which require major investment if they are to be upgraded to GSS. Georgetown is supporting almost 18,000 students in 32 public secondary schools when it requires 15-20 “comprehensive” schools with adequate facilities and staffing.
- 5.22 Strengthening rural schools will reduce demand for Grade 7 placement in Georgetown, but that is only a temporary solution. Consolidation of Primary Tops and CHS in Regions 3 and 4 to offer quality GSS education and reduce daily travel by students into Georgetown suggests that a Region “3+4+11” Strategy may be required. There is no simple strategy for consolidating and upgrading secondary schooling in Georgetown, but the opening of the new Diamond GSS in Region 4 presents an opportunity for a large school, with adequate staffing and new facilities, to offer a quality education which discourages students traveling into Georgetown. A 5-10 year plan to construct 5 new GSS in Georgetown (and eliminate a number of the smaller schools with poor facilities) should be examined.
- 5.23 The Baseline scenario in Chapter 7 includes the new Bartica and Diamond GSS, two schools in 2008/09 (unlikely if planning has not already been completed and construction not yet started) and then one new school per annum. This capital program **will not** enable Guyana to achieve USE. The High Outcome scenario envisages construction of 12 new GSS (similar to what Guyana “achieved”, not necessarily by new construction, between 1999/2000 and 2002/03. See Table 5.1).
- 5.24 **These are not forecasts** – but an attempt to model what USE objectives could be achieved if that investment was made and Guyana was successful in improving primary school outcomes, improving progression to Grade 7 (preferably in GSS), reducing repetition, improving student and teacher attendance, improving retention to Grade 11 and improving CXC outcomes and other competencies.
- 5.25 The three scenarios in Chapter 7 (table 7.3) estimate that Guyana needs 5 new GSS by 2012 to meet baseline demand, +8 GSS to meet the medium scenario and 12 new GSS to meet the high outcome scenario. These are not necessarily all “new” schools. This Review of USE suggests there are different combinations of new schools, upgrading CHS to GSS with some additional facilities, building student dormitories attached to existing rural GSS, or expanding facilities at existing GSS.
- 5.26 The Ministry and Regional Departments should provide a listing of all schools by their current condition, classrooms and student capacity⁷¹. Each school requires an assessment of medium-term requirement for that school, using a scale from 1-to-20, to estimate the aggregate cost of proposed facilities plans.

⁷¹ School capacity = useable classrooms multiplied by 25 students per classroom. This is a more realistic estimate than 40 per classroom assumed in SSRP analysis.

5.27 The following “scale” is an example which the Ministry could modify based on its assessment of need and current costs for construction of Wisburg and new Bartica Schools:

Table 5.3: Scale for ranking Type of Construction required and Cost Implications

	CONDITION OF GSS	COST IMPLICATIONS
1	Existing structure, capacity adequate	School requires some maintenance
3	Structure adequate, more capacity	New classroom/s (plus maintenance)
5	Add facilities for a GSS to serve a cluster of satellite classrooms	Recurrent cost for student/teacher travel and accommodation
7	Minor upgrade CHS to GSS	Requires significant maintenance
9	Construct dormitories at existing GSS	Capital cost (plus operating costs)
11	Major upgrade CHS to GSS	Classrooms +major maintenance
13	Construct new (rural) GSS school	Using lower standard than Wisburg
15	Major upgrade + new dormitories	High construction/operating costs
17	Construct new school (e.g. Wisburg)	High cost and requires maintenance
20	Construct new school +dormitories	High cost and operating costs

5.28 By assigning the cost of constructing Wisburg GSS divided by ‘17’ as the “unit” value, then 1= G\$70 million (or US\$350,000) and 20= G\$1,400 million (US\$7 million). Odd numbers are used for the scale to permit some refinement of the assessment, if a school is assessed as more than ‘3’ but less than ‘5’.

5.29 For planning purposes, the following table assumes an “average” requirement of G\$1,050 million for each new GSS school. The calculation can be re-worked with lower amounts. **This is not a recommendation** that Guyana should consider spending about US\$5 million to construct each new school. Twice as many CHS (if rated 7 on the previous scale) could be upgraded to GSS.

Table 5.4: Scale for ranking Type of Construction required and Cost Implications

	Baseline	Medium	High Outcome
New GSS required by 2012	+5	+8	+12
<i>If average rating is “15” above</i>	<i>G\$1,050 M</i>		
Capital Funds Required (G\$M)	G\$5,250 M	G\$8,400 M	G\$12,600 M
Capital Funds Required (US\$M)	US\$26.25 M	US\$42 M	US\$63 M

5.30 The higher the rating (and average cost) for each new GSS, the less funds are available for doing lesser-rated projects which deliver better USE outcomes. Three viable GSS cluster schools (rating “5”) could be developed for less than the cost of constructing a new school about the same standard as Wisburg GSS.

- 5.31 The primary purpose of this analysis is to encourage Regional Departments to assess their capital requirements on a school-by-school basis, to identify the community priorities and the best use of funds (if they became available). Upgrading CHS to GSS or consolidating Primary Tops as a GSS may be higher priorities than construction of fewer, high quality GSS schools.
- 5.32 The second purpose would be to encourage Regional Departments to identify smaller projects which donors could finance, or encourage communities to find other sources of funding.
- 5.33 The more effective FTI (EFA) strategies are in hinterland regions, the greater the requirement for providing better access to quality secondary school places for the greater number of students completing Grade 6. Retaining these children in a quality GSS within their region has the added benefit that overall education performance in that region should improve.
- 5.34 The final purpose is to reinforce the message that capital spending will not achieve USE unless there is equivalent expenditure on ensuring schools are fully staffed with qualified teachers and have sufficient non-salary funding to support quality learning outcomes.
- 5.35 **Guyana will need to match any capital investment with at least the same investment in retaining, refreshing, upgrading and certifying teachers.** New construction may be more visible investment but quality teaching is the prerequisite for quality student outcomes.
- 5.36 As a postscript, patterns of expenditure in Chapter 6 indicate negligible investment in maintenance of existing school facilities. New design, such as Wisburg GSS, may offer “low cost” maintenance. This should not be equated with “no cost” maintenance. Community investment in “preventative” maintenance should be encouraged in any physical school planning – and to increase community “ownership” and pride in its schools. There is another contradiction evident in Chapter 6 – most regions are spending more on school “security” than they are on “maintenance”. Community “use” of its school facilities may generate more support for maintaining and upgrading facilities and reduce the need “security”.

Chapter 6 Secondary Education Resources and Budgets

- 6.1 There are three approaches to education finance issues – a macro approach measuring education sector share of GDP and share of budget, an efficiency approach which measures expenditure per student and accounts for how available funds are spent and the examination of individual school planning and budgets. **Chapter 6** presents a brief summary of published data on the three approaches to education finance – macro sector approach, per student efficiency approach and the whole school approach. This Chapter argues that **Guyana needs a more radical approach if the broad USE objectives are to be achieved** – and recommends steps towards such an outcomes approach.
- 6.2 Increasing sector share, increasing expenditure per secondary student and “whole” school planning will have little benefit until the focus is on USE objectives – students completing 5 years secondary schooling with competitive CXC outcomes. In calendar year 2005, Guyana spent G\$13.287 billion on the education sector – with the result that 6,708 students were enrolled in Grade 11 in 2005/06 (43% of the population aged 15), and there were 7608 entries in CXC English in 2006⁷². **Chapter 7** presents several scenarios by which Guyana can improve its USE outcomes. Doubling national education expenditure to lift CXC outcomes to 75% of the cohort aged 15 or 16 is **not** a viable strategy.
- 6.3 Better use of current resources to improve prospects of more children reaching Grade 11 and CXC will require the strategies identified in Chapters 2, 3 and 4 – improving primary participation and completion rates, improving SSEE performance so that more children can continue to General Secondary Schools, improving student attendance from around 70% to 90%, and improving the quality and qualifications of all teachers. Guyana will require stronger secondary schools in each region (with boarding facilities in hinterland regions) and fewer, larger secondary schools in more densely-settled regions.

I. Measuring Education Shares of Budget and Gross Domestic Product

- 6.4 **Table 6.1** and **Figure 6.1** show an education share of national budget fluctuating in a band between 14.5% and 17.2%, and an education share of GDP around 8%.

Table 6.1: Education Expenditure and Share of Budget and GDP, 1999-2006

G\$millions	1999	2000	2001	2002	2003	2004	2005	2006
Educ. Recurrent	5,150.6	5,866.1	7,407.3	8,488.3	8,977.8	9,813.8	10,336.2	
Educ. Capital	1,725.0	3,661.1	3,889.0	2,009.1	2,363.1	2,274.0	2,950.9	
Education Total	6,875.6	9,527.2	11,296.3	10,497.3	11,340.9	12,087.8	13,287.0	
<i>Education(-ODA)</i>	<i>5,936.6</i>	<i>6,929.9</i>	<i>8,275.6</i>	<i>9,065.2</i>	<i>10,106.9</i>	<i>10,707.9</i>	<i>11,316.30</i>	
Nat. Recurrent	41,909.8	48,443.1	47,166.0	44,876.2	51,249.0	54,708.3	56,664.5	61,853.0
National Capital	12,345.2	17,132.8	18,660.6	18,092.7	20,588.3	18,400.1	35,138.2	41,900.6
National Budget	54,255.0	65,575.9	65,826.6	62,968.9	71,837.3	73,108.4	91,802.6	103,753.6
GDP	120,668.0	130,013.0	133,404.0	117,762.0	144,064.0	156,358.0	164,964.8	179,437.6
<i>Education %Budget</i>	<i>12.7%</i>	<i>14.5%</i>	<i>17.2%</i>	<i>16.7%</i>	<i>15.8%</i>	<i>16.5%</i>	<i>14.5%</i>	
<i>Education %GDP</i>	<i>5.7%</i>	<i>7.3%</i>	<i>8.5%</i>	<i>8.9%</i>	<i>7.9%</i>	<i>7.7%</i>	<i>8.1%</i>	
<i>ODA %Education</i>	<i>13.7%</i>	<i>27.3%</i>	<i>26.7%</i>	<i>13.6%</i>	<i>10.9%</i>	<i>11.4%</i>	<i>14.8%</i>	

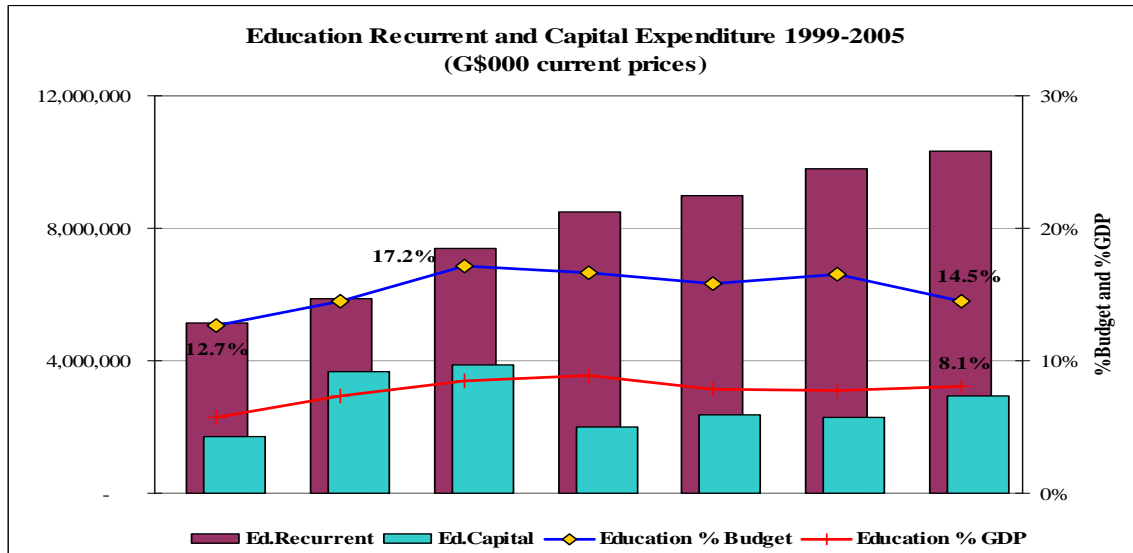
Official Direct Assistance (ODA) includes SSRP, BEIP, GEAP, GBET, BEAMS and EFA FTI (from 2005); (Finance.xls)

Source: Budget Documents (reported in MOE Statistical Digests); 2006 Poverty Expenditure Tracking Report Table 2.2

⁷² Table 6.1 (note only G\$11.316 billion if Official Direct Assistance is excluded), or G\$7 billion on Primary and Secondary recurrent spending (Table 6.2), Table 4.10 for Grade 11 enrollment, Table 2.1 for inferred population, and Table 4.11 for CXC English entries.

- 6.5 Although a basis for international comparison, widely reported and used advocate for increased education expenditure, “share” measures may be misleading. These formulae work best when the Budget and GDP are increasing in real terms. More labor intensive sectors such as education and health are penalized if there are no real increases in Budget and GDP. Sector shares may appear to increase more when Budget or GDP decline but real education expenditure may have declined.
- 6.6 External project assistance has been a major contributor to education development – as high as 27% of total education expenditure in 2000 and 2001. In FY2005, it was 14.8%. Most external assistance is education capital expenditure.

Figure 6.1



II. Using Existing Education Budgets more Efficiently

6.10 (2) **Efficiency measures** attempt to combine line-item accounting by sector and by region to “describe” how sector funds are allocated. **Table 6.2** shows average expenditure for 2004 and 2006⁷⁴. This is not a measure of the adequacy of funding - salaries are limited by the numbers of available staff and their qualifications. Primary and Secondary expenditure may be understated in some regions – due to differences in expenditure by region **and** in how some regions report their education spending.

Table 6.2: Reported Recurrent Education Expenditure, 2004-2006 (G\$)

	Recurrent Expenditure	2004	2006
Primary ⁷⁵	Salaries (a)	2,574,177,723	2,883,426,191
	Non-Salary	434,132,963	483,416,864
Secondary	Salaries (a)	1,821,937,954	2,025,259,524
	Non-Salary (b)	599,327,193	704,511,356
Primary	%Salaries	85.6%	85.6%
	% Other	14.4%	14.4%
Secondary	%Salaries	75.2%	74.2%
	% Other	24.8%	25.8%

Source: MOF FreeBalance Financial Management System reports (aggregated from Regional Reports).

See Attachment G for breakdown by Region and by Expenditure categories.

(a) Salaries total plus Benefits and Allowances, and National Insurance.

(b) Non-salary includes G\$242m Subventions (#6301) for President’s College and Queen’s College.

6.11 **Table 6.3** illustrates some limitations in the analysis of aggregated Regional reports. In Hinterland Regions (R1,7,8&9) **salary on-costs**⁷⁶ were 16-18% of non-salary Primary recurrent expenditure, compared to 10% in Regions 5,6&10, and 8% in Regions 3,4 &11.

Table 6.3 Primary Education Expenditure shares by Category of Expenditure, 2004, 2006

FIN. YEAR	Regions	On-costs 613	Security 628	Mainten. 624,625	Materials 622, 623	Other (nei)	Primary NonSalary	G\$ million
2004	R1,7,8,9	18%	0.6%	2.9%	1.9%	2.8%	26.5%	395
2006	R1,7,8,9	16%	0.3%	4.6%	2.8%	2.9%	27.0%	472
2004	R2,5,6,10	10%	7.2%	3.5%	1.2%	0.8%	22.9%	1,162
2006	R2,5,6,10	10%	5.8%	4.9%	1.8%	0.4%	23.2%	1,267
2004	R3,4,11	8%	7.3%	6.9%	0.7%	2.7%	25.6%	1,451
2006	R3,4,11	8%	6.8%	5.7%	1.5%	2.5%	24.8%	1,628
2004	Guyana	10%	6.4%	5.0%	1.1%	2.0%	24.7%	3,008
2006	Primary	10%	5.5%	5.2%	1.8%	1.8%	24.5%	3,367

Source: MOF FreeBalance Financial Management System reports. Region 11 is Georgetown.

6.12 Some regions pay **school/building maintenance** (#6242, #6252, #6255) and utilities – telephone (#6271), electricity (#6272), water (#6273) – from Education Department Administration (401) central funds not from Nursery (402), Primary (403) or Secondary (404) allocations. Primary schools in R3411 spent about 7% of non-salary expenditure on security for schools (#6281). (Regions 256&10 allocated 6-7%; but R1789 less than 1%).

⁷⁴ Comparable 2005 data were not available for this analysis.

⁷⁵ Note Primary includes Secondary Departments (“Tops”); Secondary=CHS+GSS expenditure;

⁷⁶ #6133 benefits and allowances.

6.13 Table 6.4 presents comparable data for secondary schools⁷⁷, with contrasts in On-Costs and Security and Maintenance.

Table 6.4: Secondary Education Expenditure shares by Expenditure Category, 2004, 2006

FIN. YEAR	Regions	On-costs 613	Security 628	Mainten. 624,625	Materials 622, 623	Boarding 629	Other 630	Secondary NonSalary	G\$ million
2004	R1,7,8,9	12%	1.0%	1.2%	2.1%	27%	1%	43.7%	143
2006	R1,7,8,9	14%	1.2%	0.3%	3.3%	34%	0%	53.2%	247
2004	R2,5,6,10	12%	5.7%	3.1%	1.4%	1%	0%	23.5%	761
2006	R2,5,6,10	10%	7.1%	2.7%	2.0%	2%	0%	24.2%	926
2004	R3,4,11	7%	5.2%	6.8%	0.9%	0%	15%	35.0%	1,517
2006	R3,4,11	7%	5.7%	5.4%	1.7%	0%	16%	35.8%	1,557
2004	Guyana	8%	5.1%	5.3%	1.1%	2%	10%	31.9%	2,421
2006	Secondary	9%	5.8%	4.0%	2.0%	4%	9%	33.4%	2,730

Source: MOF FreeBalance Financial Management System reports

6.14 If Residential costs (#6292) and block grants to President's and Queen's Colleges (#6301) were excluded non-salary expenditure would be around 20% of secondary expenditure. Except for the distortions caused by residential expenditure and block grants, the shaded cells in Tables 6.3 and 6.4 show similarities in primary and secondary expenditure. Figures 6.2 and 6.3 use different formats highlight contrasts between regions (Primary) and non-salary expenditure type (Secondary).

Figure 6.2

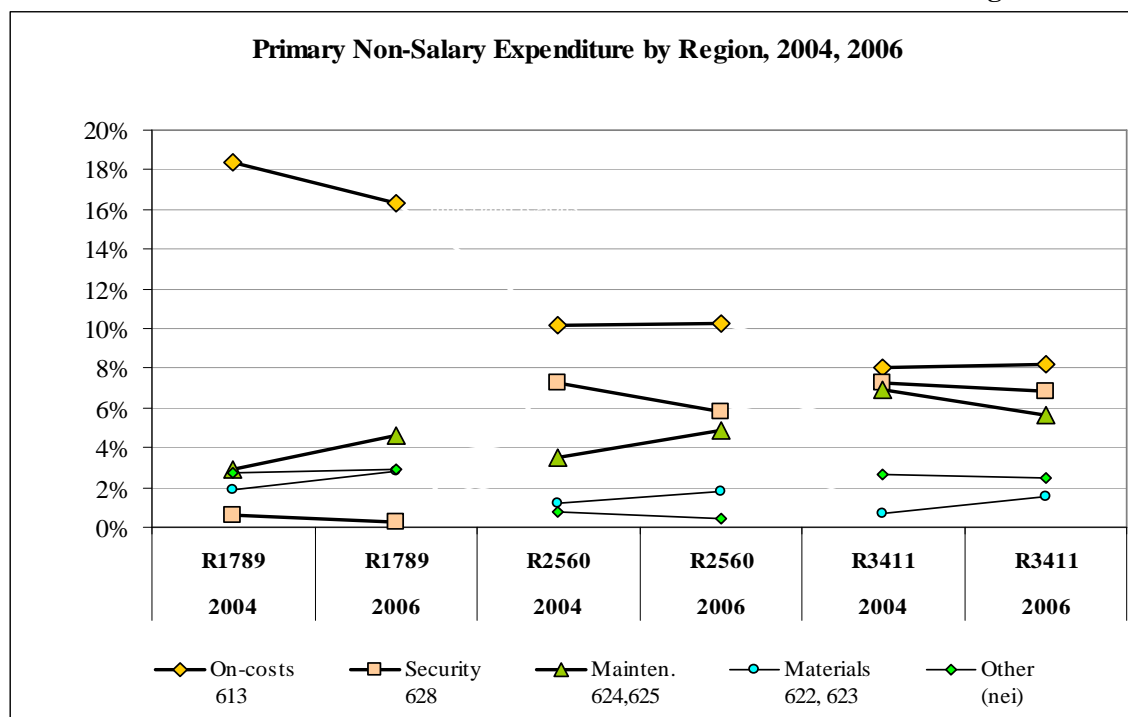
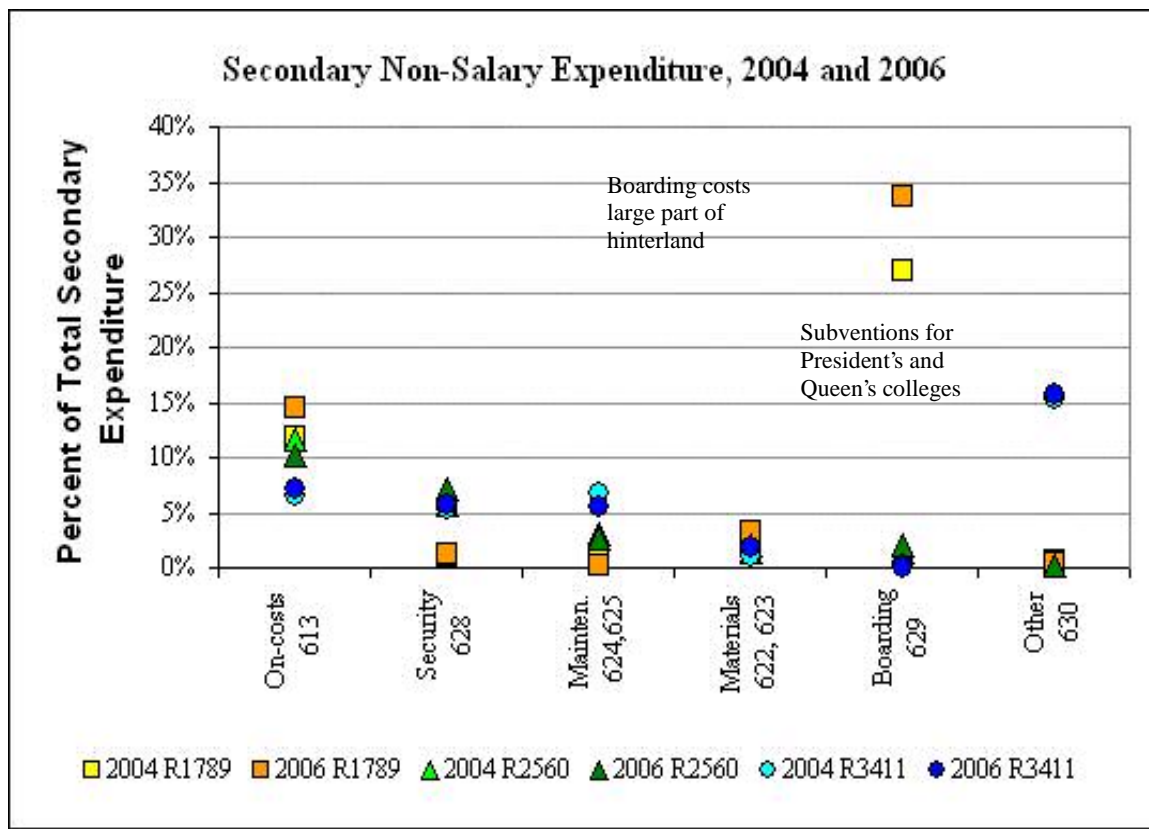


Figure 6.3



6.16 In Table 6.5, for example, the Nursery, Primary and Secondary expenditure reported in detailed by Region are compared with Regional totals in the MOE Education Digest (measure a/c) and with “Education Delivery” (measure a/b). Regional data for the four hinterland regions (R1, 7, 8&9) show total Education Expenditure as 60-70% of total education expenditure reported nationally. Some regions report “education” expenditure such as “maintenance” in their Administrative budget.

Table 6.5: Comparing Combined Regional Budgets and Education Digest data, 2004

REGION	[A] 2004 404NPS G\$000	[B] 2004 Education Delivery G\$000	2004 Buildings Furniture G\$000	[C] 2004 Education (Digest) G\$000	Measure [A/C]	Measure [A/B]
R1,7,8,9	613,932	881,738	118,052	999,790	61.0%	69.6%
R2,5,6,10	2,336,260	2,566,410	91,783	2,658,193	88.0%	91.0%
R3,4,11	3,659,069	4,785,555	126,782	4,912,337	74.0%	76.5%
Guyana	6,609,260	8,233,703	336,617	8,570,320	77.0%	80.3%

6.17 Table 6.6 disaggregates Table 6.5 to show variations by regions. Georgetown (Region 11) expenditure is distorted by “national” expenditure by MOE, and is in marked contrast to adjacent Regions 3 and 4. President’s College is located in Region 4 but the block grant (“subvention”) appears in Ministry+Region 11. Understanding these differences is essential if per capita expenditure calculations are consistent.

Table 6.6: Comparing Individual Regional Budgets and Education Digest data, 2004

REGION	[A] 2004 404NPS G\$000	[B] 2004 Education Delivery G\$000	2004 Buildings Furniture G\$000	[C] 2004 Education (Digest) G\$000	Measure [A/C]	Measure [A/B]
01	210,062	272,609	37,462	310,071	68.0%	77.1%
02	487,514	545,051	16,077	561,128	87.0%	89.4%
03	720,672	789,630	27,970	817,600	88.0%	91.3%
04	1,013,453	1,067,110	26,705	1,093,815	93.0%	95.0%
05	434,940	482,954	20,981	503,935	86.0%	90.1%
06	808,031	877,219	17,073	894,292	90.0%	92.1%
07	180,780	282,592	21,499	304,091	59.0%	64.0%
08	51,495	100,999	20,586	121,585	42.0%	51.0%
09	171,595	225,538	38,505	264,043	65.0%	76.1%
10	605,775	661,186	37,652	698,838	87.0%	91.6%
11	1,924,943	2,928,815	72,107	3,000,922	64.0%	65.7%
Total	6,609,260	8,233,703	336,617	8,570,320	77.0%	80.3%

Source: Attachment G

- 6.18 **Expenditure per Student:** Matching expenditure data with comparable enrollment data for approximately the same time period in a prerequisite for calculating expenditure per capita. Secondary education expenditure per capita should be used with caution. Apart from the above regional differences, there are two particular items which distort average expenditure per secondary student – boarding school costs in Regions 1, 2, 7, 8, 9 and 10, and subventions from the Ministry reported as Region 11 to Queen’s College (in Region 11) and President’s College (in Region 4)⁷⁸.
- 6.19 **Table 6.7** “adjusts” 2006 expenditure by apportioning administrative expenditure across Primary (including secondary students in Primary Tops) and Secondary (GSS+CHS). Calendar year 2006 expenditure is divided by the 2005/06 school year enrollment to calculate average expenditure per student in each Region.

Table 6.7 Per Capita Expenditure per Student by Level and by Region, 2006

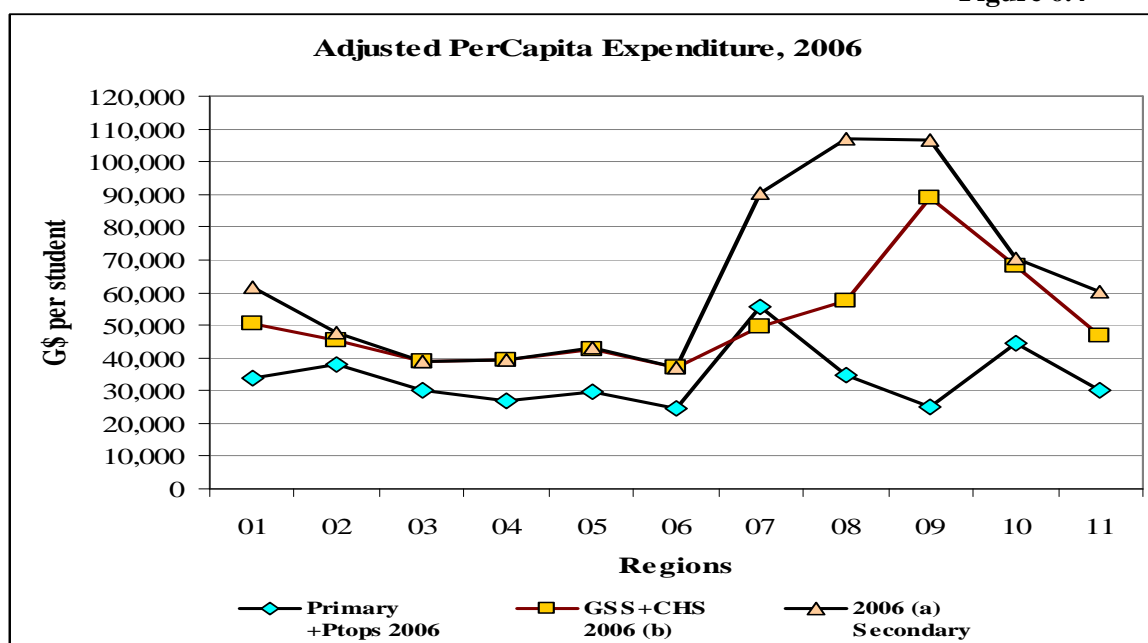
REGION	Primary +Ptops 2006	[B] 2006 GSS+CHS	[A] 2006 Secondary	Impact [(A)/(B)-1]
01	34,037	50,638	61,708	22%
02	37,775	45,304	47,716	5%
03	30,341	38,779	38,779	0%
04	26,893	39,405	39,405	0%
05	29,834	42,622	42,901	1%
06	24,633	37,209	37,213	0%
07	55,376	49,641	90,277	82%
08	34,737	57,375	107,251	87%
09	25,115	89,152	106,784	20%
10	44,503	67,930	70,317	4%
11	30,012	46,600	60,023	29%
GUYANA	30,742	45,160	51,686	14%

Source: Region_Spending 2004-2006.XLS (Adjusted); FY0406_XRegSubProg_FEB2008.sql

⁷⁸ Subventions G\$240,428,000 represent 8.8% of 2006 Secondary expenditure (Sub-Program 404).

- 6.20 With the exception of Region 7 (\$55,376 per “primary” student) and Region 10 (G\$44,503), regions range between G\$24,633 and G\$37,775/student. Primary averages G\$30,742 per student.
- 6.21 Secondary expenditure per student averages G\$45,160 excluding residential costs and PC/QC subventions, and \$51,686 per student including those costs. Note that the PC subvention is part of the Ministry budget and shown against Region 11 but the PC students are reported against Region 4 enrollment.
- 6.22 The last column in Table 6.7 is the percentage difference between Total Secondary Expenditure per student (a) and average expenditure excluding residential accommodation costs (#6292) and Subventions (#6301). The impact in Region 11 is less marked because the Subvention amount is spread across 15,245 GSS students and 2,824 CHS students. With fewer than a thousand students in Regions 8 and 9, small enrollment contributes to higher average expenditure per student. **Given this level of expenditure, the effectiveness of secondary expenditure could be questioned given low secondary completion and few students with Grade I-III passes at CXC examinations.**
- 6.23 **Figure 6.4** graphs the data in Table 6.7, showing less variation across the regions in average expenditure per Primary student (including Tops) and the impact of small enrollment and residential costs on average expenditure per secondary student.

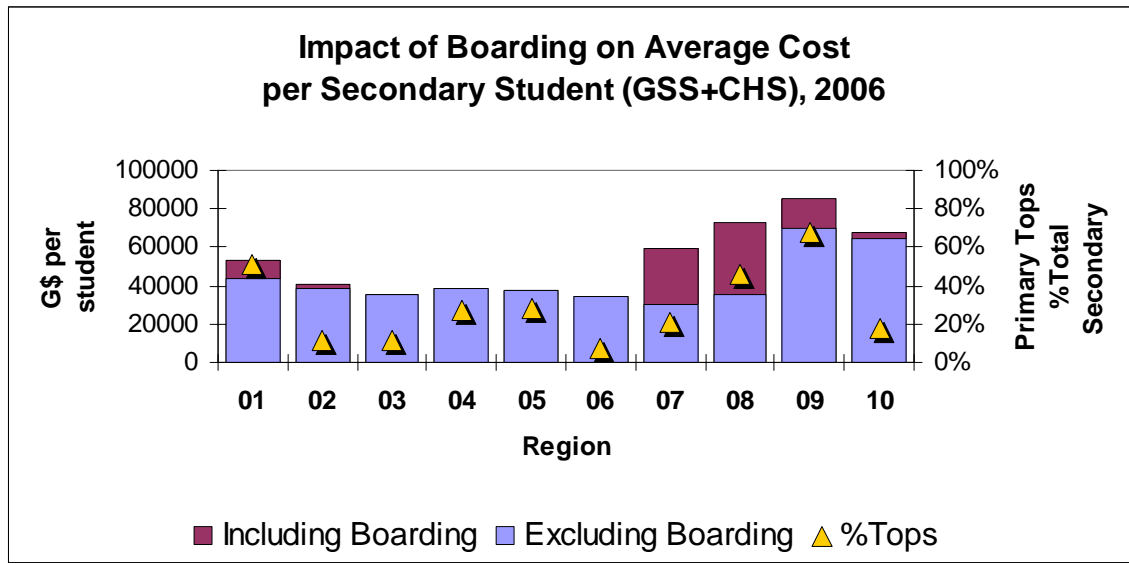
Figure 6.4



Source: Region_Spending 2004-2006.XLS (Adjusted)

- 6.24 **Student Residential costs:** The impact of boarding/residential expenditure is illustrated further in **Figure 6.5**, with the difference between Table 6.7 values and those in Figure 6.5 being that Table 6.7 has administrative expenditure allocated pro-rata. In both calculations, students in Primary “tops” are excluded (because their expenditure is reported in Primary expenditure). Georgetown (Region 11) is excluded.

Figure 6.5



Source: Region_Spending_2004_2006.xls (Boarding worksheet)

- 6.25 Secondary “boarding” or “dormitory” costs⁷⁹ are necessary for access to secondary education in hinterland regions – accounting for 51% of all Secondary education expenditure in Region 8, 49% in Region 7, 18% in Region 1 and 17% in Region 9.
- 6.26 Further analysis should be undertaken of cost structures for all residential facilities attached to schools, including secondary schools and colleges in Georgetown and Region 4 which receive students from primary schools in other Regions. This **should not** be read as an argument against or criticism of residential facilities – they are necessary, and will become even more so as a greater proportion of primary children in more remote regions complete primary education.
- 6.27 In regions where the distribution of population and primary students is dispersed, more secondary residential places in a centrally located school could be more effective than the construction of small General Secondary Schools. Small schools face difficulty in covering the whole curriculum, as well as attracting experienced and qualified teachers. The quality of the residential facilities, food, washing facilities and pastoral care/supervision should be reviewed, and upgraded – so that Amerindian and other isolated communities have confidence in sending their children “away” to school.
- 6.28 The unit cost of residential places declines as capacity and occupancy increase, making larger, better-quality facilities more efficient than many smaller facilities attached to isolated schools.
- 6.29 The Ministry does not collect data on boarding facilities as part of its annual data collection. While not recommending more reporting by schools and districts, Regional Education officials in Regions 1,7,8&9 (plus other Regions which maintain smaller facilities which many not be on the Budget, or with community resources) should advise on how improving the network and quality of residential facilities can contribute to better access to high quality secondary education.

⁷⁹ Item #6292 Dietary in the MOF Chart of Accounts

- 6.30 **Size of School and Student/Teacher Ratios:** As discussed in Chapter 1, the number and distribution of “small” schools in Guyana leads to lower ratios of students per teachers. Together with low STR, fixed costs of operating schools spread across small numbers of students inflate average expenditure per student. Scenarios examined in Chapter 7 assume both increases in average school enrollment and improvement in STRs. Caution is required because school size and STR are “outcomes” and not input factors which can be determined through administrative policy.
- 6.31 With sparse population distribution in hinterland regions, small schools and higher costs per student are an inevitable “price” for providing access for all children. The educational planning issue should be to ensure that the higher price delivers good quality services, and this will require initiatives such as ensuring that “Primary Tops” have at least 35 students, and two trained and qualified teachers – one in English and one in Math. Alternatives such as clustering “tops” as satellite classes in a centrally located GSS or provision of residential accommodation may have even higher costs per student, but this expenditure is justifiable IF students progress to Grade 11 with quality CXC outcomes.
- 6.32 Consolidation of primary tops into GSS and upgrading CHS to GSS are discussed in Chapter 5. Both remain important USE strategies and will require significant capital investment. If the result is an improvement in average school enrollment, improved STR, schools staffed by better qualified teachers and more students complete Grade 11 with good CXC results, the investment can be justified. Redistribution of existing students and teachers across fewer schools should be contingent on better quality learning outcomes.
- 6.33 **Unqualified, Untrained Teachers:** Even though teacher salaries including on-costs are approximately 86% in Primary schools and 75% in secondary schools (see Table 6.1 above), there should be a measure of the budget a Region would require if all teachers were qualified and trained. **Table 6.8** (Primary) and **Table 6.9** (Secondary) show required expenditure based on numbers of teachers and nominal salaries and allowances.

Table 6.8: Projected Primary Salary Expenditure versus Actual Salary Expenditure

PRIMARY TEACHERS includes Primary Tops			Nominal SALARIES +Allowances		Actual Budget (G\$000)	
2004/05	Trained	Untrained	Trained	Untrained	FY2004	FY2006
Graduate	136	6	199,891	5,995	Salaries (6110) and on-costs (6130) expenditure	
Qualified	2333	1323	2,484,175	859,744		
Unqualified	0	636	-	298,365		
Unfilled ⁸⁰	0	0	-	-	2,266,629	2,541,927
		4434	G\$000	3,848,170	307,549	341,499
<i>%Trained</i>	<i>55.7%</i>		<i>Allowances:</i>	<i>13.3%</i>	2,574,178	2,883,426

Source: Attachment (includes analysis by Region)

- 6.34 Actual expenditure on Primary salaries and allowances is G\$2.574-2.883 billion compared with nominal salaries of G\$3.848 billion. This analysis suggests that approximately G\$1 billion “saved” by employing unqualified and untrained Primary teachers could be used to upgrade teachers to “trained” and “qualified” status. **Improving quality of Primary teaching is a prerequisite for achieving USE.**

⁸⁰ No data on unfilled positions was available for this analysis. Nominal salaries expenditure would be larger if all positions were filled by qualified and trained teachers.

- 6.35 The argument that each Region could use any annual “savings” to improve quality:
- recruit qualified teachers, especially in English and Math for Primary Tops,
 - provide “on-the-job”/in-classroom/in-school training for qualified/untrained,
 - provide in-school or term-break courses which count towards qualification,
 - subsidize cost of travel by Primary Tops teachers to a centrally located GSS,
 - subsidize cost of travel by specialist GSS teachers to their “satellite” Primary Tops,
 - subsidize experienced/qualified GSS teacher participation in CXC marking, and
 - encourage the retention of existing teachers.

Table 6.9 Projected Secondary Salary Expenditure versus Actual Salary Expenditure

SECONDARY TEACHERS (GSS+CHS only)			Nominal SALARIES +Allowances		Actual Budget (G\$000)	
2004/05	Trained	Untrained	Trained	Untrained	FY2004	FY2006
Graduate	344	149	505,606	148,883		
Qualified	1245	1025	1,325,674	666,091		
Unqualified	0	165	-	77,406		
Unfilled	0	0	-	-	1,616,746	1,785,716
		2928	G\$000	2,723,660	205,192	209,172
<i>%Trained</i>	54.3%		<i>Allowances:</i>	13.3%	1,821,938	1,994,888
					<i>Shortfall?</i>	-27%

Source: Attachment (includes analysis by Region)

- 6.36 The first six strategies should contribute to better student learning outcomes, greater transition from Grade 6 to Grade 7, and from Primary Tops to GSS. The final strategy is aimed at reducing need to find and recruit more teachers than would otherwise be required.
- 6.37 Other strategies such as construction of teacher housing should continue, and justified as in paragraphs 6.35-6.36, as contributing to better learning, but not from the “salary saving” fund. The size of this fund should decline as the proportion of qualified/trained teachers increases – by which time the value of strategies 6.32 will have been demonstrated, and Regions see the value in funding activity from the local Budget.

III. Whole School Plans and Budgets

- 6.38 Regional analysis and regional plans in the previous section were identified as ways of improving local efficiency and applying savings to improve student learning outcomes. Guyana has demonstrated considerable success at the individual school level, through both the SSPP and GEAP Projects⁸¹. Through rehabilitation of existing facilities and the construction of new classrooms, education projects have been successful in mobilizing community “ownership” of schools and in generating financial and in-kind contributions.
- 6.39 Analysis of individual school budgets⁸², especially in comparing average expenditure per student with national or regional average expenditure, require separate analysis of funds provided by the state and funds provided by the community. Where community funding meets a shortfall in provision by regional departments or the Ministry, local “success” disguises structural problems in education funding.

⁸¹ See for example SSRP Reports by Simon Fraser (December 2001, June 2002)

⁸² This is an application of micro-economic analysis, where the “school” is an individual firm or enterprise.

- 6.40 Increased school level initiatives will require better reporting of expenditure, including identification of locally-funded activity and activity funded from public funds. The best strategy would be for the Ministry to develop a simplified financial reporting format (a spreadsheet showing sources of funds as columns and type of expenditure by rows). Such reports would serve the dual purpose of informing the community how funds have been spent as well as allowing review of a selection of reports to estimate the community contribution as a percentage of whole-school budgets.

Summary and Recommendations

- 6.41 This Chapter combines the sector shares, expenditure analysis and whole school budget information to describe how available funds are spent. It argues that **Guyana needs a more radical approach if the broad USE objectives are to be achieved** – by identifying what budget expenditure would be expected given the current distribution of teachers by qualifications and trained status⁸³. Tables 6.8 and 6.9 each identify G\$1 billion less spent on Primary and Secondary salaries (and on-costs) than appears necessary for the number of teachers employed. Even if this method overstates the “unallocated” funds, the question for planners should be – how can these funds be best utilized to improve student participation, student attendance, student completion and learning outcomes?
- 6.42 Improving the quality and qualifications of teachers was discussed in Chapters 3 and 4, and this would be one step towards better outcomes. Reducing teacher attrition and improving attendance of students and teachers would be a further step towards better outcomes.
- 6.43 Community consultation on how to raise educational outcomes for all children should include discussion as to the best use of available funds. Consolidation of primary tops and upgrading of CHS to GSS is more likely to succeed if community-driven rather than imposed from above.
- 6.44 A parallel strategy is required to improve the efficiency of public schools – combining better qualified/trained teachers, improved Student/Teacher ratios, improved attendance, and marked improvements in the proportion of students completing Grade 11 with better learning outcomes.
- 6.45 Education has to compete with other sectors for the limited funds available from the national budget. Utilizing the pool of funds which should be available if schools were staffed by qualified and trained teachers should provide MOE with resources to improve teacher training and qualification, using student outcomes as the criterion for success.
- 6.46 At a national level, MOE and MOF should consider a joint agreement on the **“minimum” recurrent resources** required to staff and operate the “average” public school, with adjustments for regional differences, smaller enrollments and the availability of qualified teachers. Government initiatives to improve “quality” and implement USE ***should be additional*** to the minimum funding level.

⁸³ This analysis could be improved if data on “unfilled” positions were included.

Chapter 7: GUYANA USE 2008-2012

7.1 This chapter examines three scenarios based on analysis in Chapters 2-6, provides a costing of each scenario, and concludes with an assessment of sensitivity of assumptions in the larger budget and government context. The scenarios draw on the analysis of student enrollment (Chapter 2), teacher supply, attrition rates and qualifications (Chapter 3), student completion of primary Grade 6, progression to secondary Grade 7, attendance and student completion of secondary Grade 11 (Chapter 4), demand for new construction (Chapter 5) and 2004-2006 patterns of expenditure (Chapter 6).

7.2 Chapter 1 identified four strategies based on 9 Key Findings.

Four Strategies	Key Findings	Three Scenarios	Funding implications
Improve Primary Education participation and outcomes	<ul style="list-style-type: none"> • Improve Primary Completion Rates⁸⁴ • Improve quality of Primary outcomes 	Common to all three Scenarios, but medium and high outcomes unlikely without better Primary outcomes	To achieve USE, Guyana must invest in improving Primary education as well as investing in Secondary.
Improve transition from Primary to Secondary, especially to GSS ⁸⁵	<ul style="list-style-type: none"> • Primary graduates need skills to succeed in secondary grades • More GSS places are required, in both hinterland and in urban communities 	Improving Gross Enrollment Rate from 86% to 90% by 2012, and GSS share of total Secondary enrollment from 73% to 85%.	Increased investment in new GSS schools and places , matched with investment in teacher quality
Improve efficiency of secondary education	<ul style="list-style-type: none"> • Reduce grade repetition rates and improve retention to Grade 11 • Improve student attendance • Increase secondary school mean size 	<p>Improve Grade 7/11 survival from 40% to 52% (mostly in GSS);</p> <p>GSS already have higher attendance (80%) but target should be 90%.</p> <p>Mean STR increases from 20:1 to 26:1.</p> <p>Mean students per GSS increases from <600 to about 700.</p>	<p>Increased years in school more efficient than repeating and dropping out.</p> <p>Improved attendance has gains with no added expenditure.</p> <p>Larger schools and larger class sizes make better use of staffing.</p>
Improve quality of teaching and learning	<ul style="list-style-type: none"> • Staff GSS with trained teachers qualified in subjects they are teaching⁸⁶ 	Training current staff to lift proportion trained from 61% to 80%	Investment in existing teacher upgrading essential if quality and CXC outcomes are to improve

7.3 Achieving USE requires some balance between investment in new GSS and investment in improving the quality of teaching and learning if Guyana is to achieve its USE objectives – 75% of students completing 5 years secondary education leading to 40% achieving CXC

⁸⁴ Using either the international measure (Grade 6 students as a percentage of population aged 11 years) or a simpler ratio of Grade 6 enrollment divided by Grade 1 enrollment (five years earlier).

⁸⁵ See Table 1.3 for example – ratio of GSS enrollment to Primary enrollment in 2004/05 was Females 44.1% and Males 37.3%. Primary Tops and CHS do not provide satisfactory USE outcomes.

⁸⁶ No data available on Teacher attendance, but investing in teachers should improve attendance and outcomes.

Grade 1-3 proficiency in five subjects. Demographic change in the Baseline scenario suggests that Guyana needs on average one new GSS over each of the next five years. The Medium and High outcome scenarios require on average two new GSS per year, with the “additional” school supporting the shift out of Primary Tops and CHS into GSS.

Three Scenarios

- 7.4 Three scenarios are presented – a **baseline scenario** which maintains the status quo through to 2012, a **high outcome scenario** which estimates the educational outcomes Guyana would have to achieve if it was to approach USE targets by 2012, and a “**medium achievement**” scenario which is assessed as achievable with strategic USE reforms and investments.
- 7.5 These scenarios are presented in **Attachment G** as a spreadsheet showing actual data collected and examined during field work in Guyana from mid-November through late December 2007, and the assumptions used for each scenario. Baseline assumptions and calculations are shaded yellow, the Medium assumptions are “tan” and the High Outcome assumptions are “gold”.
- 7.6 **Table 7.1** presents the population and enrollment assumptions used in the three scenarios.

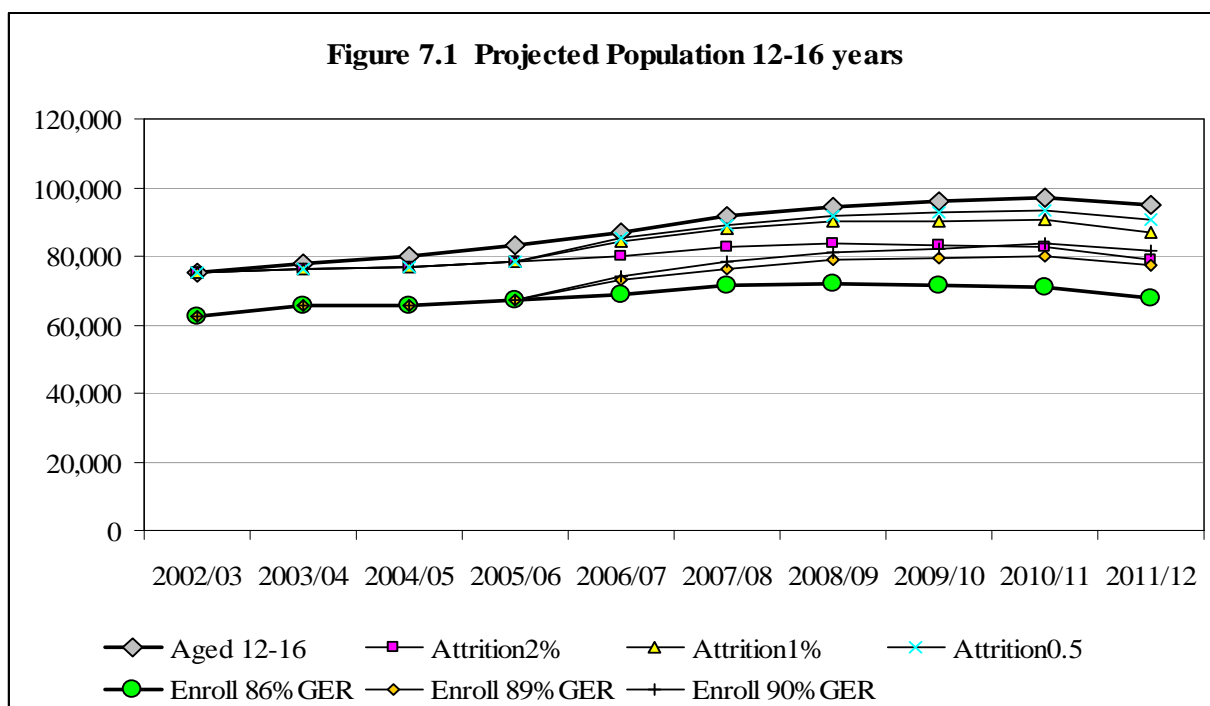
Table 7.1 Population and Secondary Enrolment Scenario Assumptions

	ASSUMPTION	Baseline Scenario	Medium Achievement Scenario	High Outcome Scenario
A	Population aged 12-16			
B	Population attrition	2% per annum	1% per annum	0.5% per annum
C	Population – attrition	=A-B	=A-B	=A-B
D	Gross Enrollment Rate	86% constant	GER+0.5% p.a.	90% by 2012
E	Secondary Enrollment	=C*D	=C*D	=C*D
F	GSS share Secondary	73% to 78%	74% to 79%	75% to 85%
G	Grade7 share Secondary	25% constant	25% to 24%	24.5% to 23%
H	Grade 7/11 survival	40% constant	40% to 45%	42% to 52%
J	CXC Candidates	=Grade7*H	=Grade7*H	=Grade7*H
K3	Secondary Schools (N=)	GSS 84 to 89	GSS 84 to 92	GSS 84 to 96
L3	GSS mean students (E/K3)	599 to 595	643 to 666	662 to 721

Source: Scenarios.XLS (January 2008)

- 7.7 The October 2002 Census population provides the demographic base for the projection, with cohorts below 12-16 progressing as the **potential secondary school age population [A]**. Because there are more children of pre-school and primary age, the potential secondary age population should increase from 75,363 aged 12-16 at the Census to 94,647 in 2008/09, before leveling off around 95,000 by 2011/12. This assumption is held constant for the three scenarios. Beyond 2012, secondary school age population may decline as smaller cohorts pass from primary to secondary.
- 7.8 **Guyana is losing population.** As the rate of net emigration is unknown, the baseline scenario uses an arbitrary assumption of 2% attrition per annum [B], giving a revised secondary school age population [C] baseline of 80,000-83,000. The high outcome scenario assumes only 0.5% attrition per annum, with a secondary school age population of 85,000-93,000. Population outflow is outside control of the Ministry and the Government.

7.9 **Gross enrollment rate (GER)** is a more critical assumption, with official enrollment data for October 2002 showing only 82.8% of the census population. GER may be inflated by under-age enrollment (11 year-olds in Grade 7, especially in Georgetown) and over-age enrollment (17+ years, especially in hinterland regions). Assuming 2% attrition per annum, Guyana would have a GER of 86% over the three years since the Census. The baseline scenario holds GER constant at 86%, while the high outcome assumption allows it to increase to 90% by 2011/12 [D]. The two solid black lines in **Figure 7.1** show the probable range in population distribution from complete survival (and 100% GER) of the 2002 population to 2% per annum attrition and constant 86% GER (green circles).



7.10 **If Guyana is to approach universal secondary education**, more students have to progress from Primary to Secondary education and to remain in school to Grade 11. The baseline represents what would happen without intervention by government to improve participation, progression and secondary completion.

7.11 The geographic distribution of secondary school age students and the type of secondary education available has major implications for USE. Assumption F observes the impact of SSRP, GEAP and BEAMS Projects with the general secondary schools share of total enrollment increasing from 50-60% through the 1990s, and reaching almost 71% by 2005/06. The projections [F] show the baseline scenario continuing to 78% by 2011/12 and the high outcome scenario increasing to 85%.

7.12 This is an “outcome” assumption – determined more by policies to consolidate Primary Tops by construction of new GSS (in more densely settled areas of Regions 3 and 4), upgrading CHS in Georgetown to GSS and the construction of new schools. As noted in Chapter 5, new GSS in Bartica and Diamond are more likely to relocate children already enrolled rather than expand total enrollment. The major impact for USE is that students in GSS are more likely to reach Grade 11, enter and be successful at CXC examinations.

- 7.13 Progression from Primary Grade 6 to Secondary identifies a potential barrier to USE. There is also an effect of repetition in Grade 7 which may overstate “progression”.
- 7.14 The impact of the enrollment assumptions in Table 7.1 are presented in **Table 7.2** as a range between 67,913 secondary students with the baseline assumptions and 81,408 with high outcome assumptions. The baseline assumes that 40% of Grade 7 students reach Grade 11 (close to 38.3% measure for the 2005/06 Grade 11), while the high outcomes assumption has 52% of Grade 7 in 2007/08 reaching Grade 11 in 2011/12.

Table 7.2 Projected Enrollment and CXC Candidature 2006/07-2011/12

SECONDARY STUDENTS	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline	65,638	67,141	68,973	71,209	72,104	71,616	71,159	67,913	98.5%
Medium	65,638	67,141	72,956	76,506	78,675	79,349	80,047	77,553	106.3%
High Outcome	65,638	67,141	74,134	78,595	81,250	82,385	83,563	81,408	109.8%
CXC ENGLISH CANDIDATES	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline (40%)	8,252	7,608	6,897	7,121	7,210	7,162	7,116	6,791	98.5%
Medium (45%)	8,252	7,608	7,296	7,779	8,129	8,325	8,523	8,376	114.8%
High (52%)	8,252	7,608	7,628	8,369	8,933	9,333	9,735	9,736	127.6%

Source: Scenarios.XLS. Actual CXC student numbers in 2007 were 8,011 and are overstated (include Private school students, Grade 10 students sitting CXC and students repeating CXC).

- 7.15 The less visible process is attrition during secondary grades. This Review has analyzed attrition by measuring progression from Grade 7 to Grade 11 (42% for the Grade 7 intake in 1997/98 and only 38% for the 2001/02 intake. For scenarios, the effect is summarized as Grade7 percentage of total Secondary (high attrition means Grade 7 share is larger; low attrition, Grade 7 is lower). Assumption G notes actual Grade 7 share at 27-28% (including repetition) in 2001/02 and 2004/05, with baseline assuming 25% and the high outcome share declining to 23%. Grade 11 survival [H] is assumed constant at 40% in the baseline, increasing to 45% in the Medium Improvement model, and to 52% in the High Outcome model.

Demand for Secondary Education:

- 7.16 As argued in Chapter 5, enrollments are driven by demand by students with competencies for secondary education rather than through construction to create additional school places. New construction is necessary to allow consolidation of Primary tops and to upgrade /convert CHS to GSS.
- 7.17 The population aged 12-16 years is estimated to increase from 75,400 at the 2002 Census to 83,200 in 2005/06 and to 97,200 in 2010/11 based on the progression of the larger cohort identified in Table 2.2 and assuming no net emigration. Projections are very sensitive to assumed attrition.
- 7.18 Projecting the mix of secondary students becomes more complicated – depending upon the location of existing Primary tops and distances to the next school. National enrollment cannot be divided by a “constant” to calculate the numbers of schools required. Baseline Scenario assumes a reduction in Primary tops from 244 in 2005/06 to 181 by 2011/12, while the High Outcomes scenario shows a more dramatic reduction in Primary Tops.

- 7.19 To improve curriculum and learning outcomes, average enrollment in all schools have to increase – in Primary tops from about 40 to around 60 if the schools are to have qualified teachers in English and Math, CHS from under 400 to 500-600 students (by which time they should become GSS), and GSS from under 600 students to 700+ students. The more effective schools increase their enrollment, the fewer “new” schools required.
- 7.20 **New Schools? Guyana cannot achieve USE without construction of new GSS.** Based on projected student numbers by type of school and the average enrollment per school for each of the three scenarios, **Table 7.3** shows that the baseline would require one new GSS per annum. This may be by conversion and upgrading of an existing CHS or by new construction. Construction of a new school may take three to five years from the initial decision, depending on whether from Government funds or by borrowing.

Table 7.3 Projected Requirement for Secondary Schools to 2011/12

SECONDARY SCHOOLS		2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline Scenario	Ptops	243	244	218	225	223	213	204	181	-37
	CHS	24	24	20	20	18	17	15	12	-8
	GSS	82	82	84	84	86	87	88	89	+5
Medium Scenario	Ptops	243	244	228	230	224	211	200	178	-50
	CHS	24	24	20	18	16	15	13	11	-9
	GSS	82	82	84	84	86	88	90	92	+8
High Scenario	Ptops	243	244	166	165	141	110	68	36	-130
	CHS	24	24	20	18	15	13	11	9	-11
	GSS	82	82	84	85	87	90	93	96	+12

Source: Scenarios.XLS. School numbers are calculated by dividing enrollment by assumed school “size”.

- 7.21 The high outcomes scenario assumes a major reduction in the number of Primary Tops and would require construction of 12 new GSS by 2011/12. Each new school has to be justified by local factors such as consolidation of primary tops, conversion of CHS, or increasing total number of secondary places. Some of the new GSS may include boarding facilities for hinterland regions – IF there is sufficient demand for boarding school places.
- 7.22 **Guyana cannot achieve USE by the construction of new secondary schools** – the capital investment requires equivalent recurrent investment to attract and retain qualified teachers, to improve student attendance and retention, to reduce grade repetition and to improve the number and quality of students completing primary education.
- 7.23 **Teacher Demand and Supply:** Guyana faces challenges in attracting and retaining qualified teachers (as well as improving teacher attendance). Teacher salaries and allowances represent more than three-quarters of education expenditure, so projected teacher numbers affect future budget expenditure.
- 7.24 **Table 7.4** uses Student/Teacher Ratio (STR) to convert student enrollment demand into demand for teachers. The baseline approximates the 19.5 STR reported in 2005/06 compared with a 26.0 high outcome assumption. The medium assumption is approximately half way between these two. Fewer but better qualified teachers in Table 7.3 High Scenario combines improved efficiency and improved proportions trained.

7.25 With increasing average GSS enrollment (see assumption L3 in Table 7.1), larger enrollment enables schools to offer a wider curriculum with more students per class group. This improvement in efficiency **reduces the total number of secondary teachers required**, even though secondary enrollment in Guyana has increased by 9.8% and CXC candidature increased by 27.6% in Table 7.2.

Table 7.4 Projected Secondary Teachers (and Trained Teachers) to 2011/12

SECONDARY TEACHERS	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline (STR=20)	3,392	3,437	3,448	3,560	3,605	3,580	3,557	3,395	98.5%
Medium (STR=23)	3,392	3,437	3,558	3,643	3,659	3,606	3,557	3,371	94.7%
High (STR=26)	3,392	3,437	3,530	3,572	3,532	3,432	3,342	3,131	88.7%
TRAINED TEACHERS	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline (61%)	1,788	1,844	1,868	1,933	1,964	2,004	2,027	2,070	110.8%
Medium (70%)	1,788	1,844	1,956	2,076	2,158	2,235	2,312	2,359	120.6%
High (80%)	1,788	1,844	1,976	2,107	2,225	2,299	2,406	2,504	126.7%

7.26 Larger class groups and more students continuing to Grade 11 are not sufficient – **student CXC outcomes require a major improvement in the quality of teaching**. The proportion of trained teachers may be a “weak indicator” of student outcomes – in some subjects, a graduate in Math, Physics or Chemistry may be more important than whether the teacher is “trained”. Table 7.4 shows a large increase in “trained” teachers, by replacing teachers leaving with trained teachers and upgrading qualifications and skills of the existing teachers. Upgrading and certifying teachers through in-service courses, through distance education and residential schools (in “summer” and during “wet” months when student attendance is low) should be a core component of any USE Strategy.

7.27 The teacher retraining/certification process should be reinforced by improved salaries for “trained” teachers but no improvement for untrained teachers. Most of the increase in **Table 7.5** comes from existing teachers being certified as “trained” – with an increase in monthly salary from G\$47,709 to G\$78,306 for non-graduate teachers and from G\$73,483 to G\$108,089 for graduate teachers. Allowances of 8% are added to all salaries, although these allowances are greater in hinterland Regions.

Table 7.5 Projected New Teachers and Secondary Recurrent Expenditure

NEW TEACHERS	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline	56	24	65	31	40	23	43	+226
Medium	56	112	120	82	77	77	47	+515
High Outcome	56	132	131	118	74	107	98	+660
RECURRENT EXPENDITURE G\$M (constant)⁸⁷	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline	4,065	4,108	4,264	4,342	4,366	4,381	4,290	+4.43%
Medium	4,065	4,278	4,471	4,585	4,641	4,704	4,631	+8.25%
High Outcome	4,065	4,281	4,460	4,569	4,603	4,677	4,646	+8.53%

⁸⁷ The analysis for Table 7.5 (and for Tables 6.8 and 6.9) assumes that annual salary is 12 time monthly salary. If multiple is less than 12, these calculations require revision.

- 7.28 Secondary Recurrent Expenditure in Table 7.5 assumes that G\$1 is spent on non-salary items (textbooks, school maintenance, travel, student accommodation) for every G\$3 spent on teacher salaries and allowances. The “market” mechanism should be reinforced by real increases in teacher salaries. Secondary Recurrent Expenditure assumes 0.7% per annum increase in teacher salaries for trained secondary teachers (baseline), 1.5% per annum for the medium scenario and 2% per annum under the high outcome scenario. Untrained teacher salaries are not adjusted annually, as an incentive for teachers to upgrade their qualifications and become certified teachers.
- 7.29 Recurrent Expenditure increases by 4.4% in the baseline (from G\$4,108 million to G\$4,290 million), and from G\$4,281 million to G\$4,646 million or 8.5% under the high outcome strategy.

Secondary Recurrent Expenditure “Gap”

- 7.30 In financial year 2006, Guyana reported recurrent secondary expenditure of G\$2,730 million (see Table 6.2), of which non-salary expenditure was 25.8%. Primary Tops expenditure is not included in reported secondary expenditure. Primary Tops represent 15.3% of total secondary enrollment (see Table 1.1), secondary expenditure including Primary Tops is assumed to be 10% above the reported recurrent expenditure to approximately G\$3,000 million. With Baseline expenditure in Table 7.4 of G\$4,065 million, there is a “gap” of approximately G\$1,000 million between expenditure and what Guyana needs to support its current secondary education system.⁸⁸

Sensitivity Analysis

- 7.31 The spreadsheet model reports the existing structural relationships between secondary school age population, enrollment, transition rates from primary to secondary schools, repetition rates, student retention to Grade 11 and CXC examination outcomes. Changes can be made to one measure, and the impact of that change measured. Schools are a dynamic system so that a change on one measure may be offset by other changes.
- 7.32 Throughout this Review, and analysis of system performance data, average number of students per school (average enrollment or school “size”) is the strongest predictor of secondary school outcomes. Rural students receiving secondary education in a “Primary Top” with fewer than 30 students, with one or two teachers who may have no qualification in the subjects they are teaching have no prospect of completing secondary school with a pass in five CXC subjects. Urban students attending a GSS with 600-900 students with 100+ students remaining to Grade 11 and with most teachers having some qualification in their teaching subject, should achieve five CXC passes.
- 7.33 If school “size” is the best predictor of secondary school outcomes, the major difference between the Baseline and “High” scenario is the reduction in the number of small Primary Tops (and increasing average enrollment to 60 with trained teachers in Math and English for tops that remain) and increased enrollment in GSS. Efficiency in average class size and ratio of students per teacher have a “perverse” effect because the model shows that average recurrent expenditure per student declines. Better outcomes for less spending!

⁸⁸ There would be Ministry expenditure on curriculum, management, planning, assessment/testing which could be attributed to “Secondary” education, as well as Regional Education Department expenditure, so the “gap” would be less than the G\$1,000 million estimate.

- 7.34 Size may be a good predictor but there are exceptions – skilled teachers can achieve exceptional results, possibly because they have students of above-average ability. Large schools such as Bartica Secondary do not perform as well, even with an above average percentage of “trained” teachers. One problem is that more students may have had inadequate primary education, more repeat Grade 7 or Grade 8, and insufficient students continue through to Grade 11.
- 7.35 Size can be modeled, and the analysis of students (Chapter 2), teachers (Chapter 3) and learning outcomes (Chapter 4) in this Review has attempted to demonstrate “size” effects.
- 7.36 What could not be modeled was “average student attendance” because its effect on average instructional time per student was not measurable. Guyana may be unique in that it collects and reports attendance details which have been reported in this Review. Improving student attendance by 10% (from 60% to 70% in CHS or from 80% to 90% in GSS) does not affect average school size, average class size or student teacher ratio. It may affect repetition rates, grade progression rates, retention to Grade 11 and CXC exam results. Teacher attendance data were not available and the impact of teacher attendance on student learning warrants further examination.

Five Risks

- 7.37 This Review concludes by identifying five “risks” which summarize the challenges facing Guyana. None of these are “new” issues but the summary may suggest where small steps can be taken towards the larger goal.
- 7.38 **Risk 1: Do Nothing** (Baseline Scenario) continuing poor attendance and high attrition from schools, especially urban males with limited employment skills. Social costs of crime, violence and drugs and growing rather than declining prison populations can be more than offset by achieving USE objectives. Higher cost of smaller hinterland schools is unavoidable, but can be partially offset by greater efficiency gains in larger urban schools.
- 7.39 **Risk 2: Failure to improve student attendance** – better quality teaching and learning (and teacher attendance?) are pre-requisites for reduced repetition, better student attendance, completion to Grade 11 and at least Grade 3 CXC outcomes. Improving attendance is recommended, because it can contribute to improved outcomes without any additional recurrent expenditure. This should not be read as arguing for better “policing” of truancy – the quality of the teaching and learning should “compel” attendance.
- 7.40 **Risk 3: Investing in new buildings without better teaching and learning.** Scenarios use “trained” teachers as the measurable indicator of quality. Ensuring more teachers qualified in the subjects being taught is more difficult to measure. Higher average enrollment, more efficient use of trained teachers and increased salaries for trained teachers should contribute to better learning outcomes. Attracting and retaining qualified teachers may require additional expenditure.
- 7.41 **Risk 4: Investing in Secondary without matching Primary investment** so that quality Primary graduates have opportunity to achieve a good secondary education. Most of the untrained/unqualified teacher issues in secondary schools also apply to primary schools, but secondary schools cannot correct deficiencies in Grade 6 language or numeracy skills.

- 7.42 **Risk 5: FTI investments in improving Primary outcomes** in Hinterland regions without parallel initiatives to make quality secondary education accessible. This will include higher recurrent and capital costs in boarding schools, or the higher staffing and recurrent costs in an effective cluster GSS model can be developed.
- 7.43 Hinterland regions should exploit their advantages – creating an “elite” regional GSS which specializes in environmental and natural sciences, or in Amerindian culture and society, in Spanish and other languages, or in football, cricket and basketball. Every Primary graduate who attends their regional GSS contributes to stronger and more efficient education, and every urban student attracted to the elite regional GSS both improves the regional school and reduces pressure on urban GSS places.
- 7.44 Reluctance of some hinterland communities to allow young children to attend boarding schools plus the high costs of travel to and from remote communities is taken as given. Boarding schools must offer more than residential dormitories – parents require better pastoral care and supervision and better educational outcomes. For every student from a remote community completing Grade 11 with quality CXC outcomes, subsidies for travel to boarding schools would be a better investment than maintaining Primary Tops which can deliver few quality outcomes.
- 7.45 This Review suggests that using the geographic advantages of hinterland regions, including their “isolation” and environment, to create schools which can achieve similar outcomes to Bishops GSS or Queens College will attract good students from urban communities. Each Regional Education Department in the Hinterland should examine community priorities which would justify higher initial investment. The more successful the school in attracting and retaining students to Grade 11, the better the educational outcomes for all students and the better the return on the investment.

(end of Report)

ATTACHMENTS

Attachment A1: Terms of Reference for Consultancy

REVIEW, ANALYSIS AND COSTING OF POLICY ISSUES/PLANS IN SECONDARY EDUCATION IN GUYANA FOR INCLUSION IN THE EDUCATION SECTOR STRATEGY FOR 2008-2012

BACKGROUND

In 2003 the Ministry of Education (MOE) began implementation of a five year strategic plan (2003-2007). A major objective of this plan was the achievement of Universal Secondary Education (USE). Specific USE related objectives in the plan included the conversion of Community High Schools (CHS) into General Secondary Schools (GSS), and the gradual amalgamation of Secondary Departments of Primary Schools into secondary schools. The plan also outlined some changes in the mechanism [previously only the Secondary School Entrance Examination (SSEE)] for allocating children to secondary schools and curriculum reform, including the implementation of a more technical/vocational program for secondary students as an alternative learning pathway. Many of these objectives were based on lessons learnt from two major secondary education projects: the Secondary School Reform Project (SSRP) funded by a loan from the World Bank and the Guyana Education Access Project funded by a grant from the United Kingdom's Department for International Development (DFID). SSRP tested some of the policy objectives in 12 pilot schools in several regions of Guyana and GEAP built on this by testing it in two regions of Guyana.

There has been some progress in the last five years, in achieving some of the objectives, especially in the conversion of CHS and, to a lesser extent, the amalgamation of Secondary departments. There has also been some work done on the review of curriculum and a policy document on secondary education has been prepared by senior education managers. However much remains to be done. In many cases conversion of schools has not been done according to the recommendations outlined in the two projects and the result has simply been a change in name without any real change in the program offered to students. In particular, the policies and strategies for the alternative pathway have been piloted in some schools but the policy document has not been officially approved. The Ministry has now embarked on the preparation of another five-year plan (2008-2012) and USE will remain a major objective, but it is paramount that the Ministry goes into this new plan with clearly articulated policies and plans and with a good estimate of the cost implication of these policies and plans.

GENERAL OBJECTIVES OF THE CONSULTANCY

It is against this background that the current consultancy is proposed. Under the continual guidance of the Bank team and the Chief Planning Officer of the Ministry of Education, the consultant is expected to carry out the following tasks:

- I. Review all relevant documentation on USE in Guyana. This should include, but are not limited to, the Education Strategic Plan 2003-2007, major reports emanating from the SSRP and GEAP projects, and the Draft Secondary Education Policy document. The consultant should also review secondary education policy and programs in a few CARICOM states, and meet key MOE officials from Central Ministry and Regional Departments and Ministry of Finance to seek additional information, clarify issues etc.

- II. Critically analyze the policies and plans proposed in the review of documentation and the discussions mentioned above and recommend preferred policies and pathways to MOE for achieving secondary education goals.
- III. Run a simulation model to estimate the costs of the major alternative policy options and provide recommendations to Government for the finalization of the secondary education policy for Guyana.

SPECIFIC OBJECTIVES OF THE CONSULTANCY

Specifically the consultant will:

- I. **Review all relevant documentation on USE in Guyana:**
 - A. Summarize the (short and long term) goals for secondary education from the past five year strategic plan (2003-2007) and the secondary education goals for the strategic plan under discussion (2008-2012)
 - i. Specify the goals of the past five year strategic plan (2003-2007) in accordance with criteria for expanding access, improving quality, relevance, equity and effectiveness.
 - ii. Describe the goals under discussion for the five year strategic plan (2008-2013) in accordance with criteria for expanding access, improving quality, relevance, equity and effectiveness
 - iii. Evaluate the level of achievement of past and currently discussed five year strategic plans based on the criteria described. What is the gap between the current system and the goal?
 - B. Review of Government policies, past studies, and recommendations for achieving USE, among them are the following: *(A full list will be provided by the government.)*
 - i. Secondary School Reform Project (SSRP) – Implementation Completion Report, Consultant Recommendation Report (Wolff).
 - ii. Guyana Education Access Project (GEAP)
 - iii. DFID consultancy reports from 2001 and 2005.
 - iv. Fiscal Implications for Achieving the Proposed USE, A Note, 2001 (WB).
 - v. Secondary education policy in a few CARICOM States (e.g. Jamaica, Trinidad and Tobago).
 - vi. Primary documents on secondary education with the multilateral organizations
 - vii. Interview with key informants from the Central Ministry, Regional Departments and the Ministry of Finance for more information on secondary education strategies.
- II. **Develop alternative scenarios** (based on the review under Objective I)
 - A. Critically analyze the policies, plans, and recommendations proposed in the review of documentation and interviews mentioned above
 - B. Synthesize the information and identify viable policy options for achieving USE.
 - C. Propose pathways for achieving different policy options (alternative models)

- III. Run a simulation model** to estimate the costs of alternative models and provide recommendations to government based on the fiscal implications.
(see Annex for a sample template of simulation model)
- A. Estimate the cost of each alternative in the proposed policy
 - B. Compare the cost required at the current policy option (baseline model) with the costs of alternative models
 - C. Run sensitivity analyses based on different political risks

Deliverables

1. The consultant is expected to present a detailed work plan (including methods) not later than **one week** after contract signing.
2. The consultant will produce a **draft report within the first four weeks** of the consultancy which should include preliminary results of Objectives I and II, and an indication of how the remainder of the consultancy will be carried out.
3. **Simulation model** estimating costs of alternative pathways based on politically acceptable and realistic options.
4. A report which includes the preliminary results of Objective III should be presented by **week seven**. Specifically, deliverables are organized in two phases. The final report should be presented at the **end of the two month** period.

All documents will be submitted in English in an editable, electronic version to the World Bank Team Leader and the Ministry of Education's Chief Planning Officer. All deliverables will become the property of the World Bank upon payment according to the terms of this contract.

Structure and Timeframe of the Consultancy

It is estimated that this consultancy will be of two months duration. It could involve an international expert and a national person based in Guyana. The first phase of the consultancy combining Objectives 1 and 2 will span about four weeks and can be partially completed from the consultant's home base. MOE will provide electronic or hard copies of the material relevant to Guyana.

Part of the second phase covering Objective 3 will be spent in Guyana with a base in Georgetown but with some visits/meetings with regional officials. This phase will involve gathering of data to facilitate the costing exercise.

Attachment A2: References

- Caribbean Group for Cooperation in Economic Development (CGCED 1998) **Caribbean Economic Review 1998**. (Report 17874)
- Fraser, Simon (2001). **Education Finance and Budget Reform. Report – Phase 3**. (SSRP)
- Fraser, Simon (2002). **Education Finance and Budget Reform. Final Report – Phase 4**. (SSRP)
- Government of Guyana (2007), **Guyana: 2006 Poverty Expenditure Tracking Report**.
- International Monetary Fund (IMF 2004). **Heavily Indebted Poor Countries (HIPC) Initiative-Statistical Update**. Report 28394
- Latham, Michael (2000), **Primary-Secondary Transition Towards a unitary secondary education system in Guyana**, Guyana Education Access Project (GEAP).
- Latham, Michael (2001). **Secondary Education Finance Study** (GEAP).
- Ministry of Education (2002). **Policy on Universal Secondary Education**.
- Ministry of Education, National Centre for Educational Resource Development (NCERD 2007a). **Analysis of SSEE/NGSA Results 1996-2007**, Volume 1.
- Ministry of Education, National Centre for Educational Resource Development (NCERD 2007b). **Analysis 2000-2007 CXC General and Technical Proficiencies Results**, Volume 1.
- Ministry of Education, Planning Unit (MOE 2006), **Digest of Education Statistics of Guyana 2004-2005**. Previous years' Digests and draft 2005-06 Digest were also used.
- Skoufias, Emmanuel (no date), **Guyana Population Census 2002** (World Bank/spreadsheet)
- Vegas, Emiliana and Petrow, Jenny (2008), **Raising student learning in Latin America: the challenge for the 21st century**. World Bank
- Wolff, Lawrence (2004), **Independent Evaluation of the Secondary School Reform Project (SSRP)**. Volumes 1 and 2.
- World Bank (IDA 2002). **Country Assistance Strategy**. Report 24073-GUA.
- World Bank (2002). **Guyana Public Expenditure Review**. Report 20151-GUA.
- World Bank (2003). **Monitoring educational performance in the Caribbean**. Report 24337
- World Bank (2007). **Welcome to Guyana**, Country Coordinating Office.

Attachment B: Core Issues for MOE Discussion 13 December 2007

Present: Mrs G Whyte-Nedd (Chief Education Officer), Mr R Tiwau (Deputy CEO Administration), Ms M Bovell (Assistant CEO Secondary), Mr N Khan (Assistant CEO Primary), Mrs D Singh (Assistant CEO Nursery), Mr H Grandison (Assistant CEO Inspections), Ms D Chapman (Deputy CEO Development), Mrs E Hamilton (Chief Planning Officer).

- [A] **RETAIN PRIMARY TOPS** (as this is the only way in which many hinterland communities can access secondary education). In areas where Tops can be consolidated into a GSS they should be.
- [B] **STRENGTHEN PRIMARY TOPS** – each should have one, preferably 2 trained teachers AND priority should be given to a trained English and a trained Math teacher. (In a system chronically? short of trained teachers, even more so in Math, it is difficult/impossible to justify appointing a Math teacher to a school with 30 students, when schools with 200+ students lack trained Math teachers. A third best option, is to provide special Math training to teachers in Tops ⇨ train them to be Math teachers, provided they are not pirated away to Regional Boarding Schools, GSS in Georgetown or even private schools in Georgetown)
- [C] **STRENGTHEN QUALITY AT REGIONAL BOARDING SCHOOLS**, buildings, staffing and recurrent resources, so that hinterland communities see value in sending students at Grade 8 or Grade 9 to the Regional School. Grade 10 may be too late for small school students to catch up and prepare for CXC.
- [D] **EXAMINE CASE FOR MORE, HIGH QUALITY BOARDING SCHOOLS IN HINTERLAND REGIONS** (yes, more expensive, but less per student than at President's College?) – with good, qualified teachers, and good CXC outcomes, so that the best students at SSEE choose to stay in their region AND Georgetown/Region 3+4 students want places at these schools. Use the unique diversity of rural areas to enrich curriculum at such schools).
- [E] **ENCOURAGE LARGER RATHER THAN SMALLER DORMITORIES** (Bartica could be rebuilt for 100 students at marginal additional capital and recurrent cost – if fully utilized – supporting strategies [B] and [C] above. The test should be that educational quality and pastoral care encourage parents to choose this education in preference to going to Georgetown or remaining in a Primary Top. Scholarships for hinterland students should give priority to the Regional School rather than a Georgetown school.
- [F] **CHANGE THE STATUS OF GRADE 6 SSEE TO PUT MORE EMPHASIS ON STUDENT LEARNING** – secondary placement function can remain, provided Regions and schools use SSEE to improve the quality of their teaching and learning. . A more radical/disruptive alternative would be to extend all Primary schools to Grade 7, provided the Primary school gets specialist English and Math teachers so students can move to Regional GSS/other GSS for Grade 8. (This is applying proposal [B] to all Primary schools, with the added benefit that all Primary grades should benefit from a trained Math teacher!)
- [G] **GIVE SSEE A DIAGNOSTIC/REMEDIATION FUNCTION** (see [F]) so that the weaker 20, 30, 40% have a reasonable prospect of succeeding at Secondary school. See [H] and [I] below.
- [H] **ASPIRING TO SECONDARY EDUCATION (USE Objective 1) SHOULD BE COMPULSORY**. There is a contradiction in compelling under-prepared, under-qualified,

disinterested students (especially urban males) to “attend” school if attendance is poor, they add to disciplinary problems at school, disrupt learning, AND have more likelihood of being suspended or expelled. Expulsion has the effect of giving a legal exemption from compulsory schooling!

- [I] **REVIEW THE INTERFACE BETWEEN SECONDARY SCHOOLS, PRACTICAL TRAINING CENTERS AND TECHNICAL COLLEGES/ INSTITUTES.** There should be a genuine and attractive alternative to CXC as an outcome from Secondary Education – with improved academic quality so that students can still present CXC in many of the 38 subjects examined. [This would have more merit than introducing compulsory 2 years National Service for all 15-year olds not attending (seriously) to their secondary education.]
- [J] **ACCELERATE THE TRANSFER OF COMMUNITY HIGH SCHOOLS TO GSS SCHOOLS** – not just in name, but in the quality of teachers and resources.
- [K] **SECONDARY SCHOOL – WHERE I WANT TO BE?** Improving attendance at school must be a priority (for urban GSS as well as CHS and Primary Tops). This should be a focus for USE and for community-school improvement plans (SIPs). Interim targets should be 90% GSS and 80% CHS +Tops, with objective of increasing attendance to 95%GSS and 90%Others. Communities should look at local/environmental reasons for non-attendance – if it is seasonal (rainy season, high rivers, planting/harvest, test cricket) look at a more flexible school year – start in August, attend Monday/Saturday in some months (provided the Act does not make this illegal), offer some units of study during holidays using Regional Boarding School facilities if specialist science/computer facilities not available in schools.
- [L] **INCREASE FOCUS OF REGIONAL BOARDING SCHOOLS ON GRADES 10-11,** preparation for CXC. A simpler alternative may be to offer some units of study during holidays using Regional Boarding School facilities [see K] if specialist science and computer facilities not available in many schools.
- [M] Other issues - **TEACHER ATTENDANCE, TEACHER RENUMERATION/INCENTIVES, RETAINING TEACHERS, RETRAINING/UPGRADING/QUALIFYING TEACHERS, RECRUITING NEW TEACHERS, PRIORITIES FOR NEW CONSTRUCTION, COMMUNITY OWNERSHIP OF SCHOOLS AND PREVENTATIVE MAINTENANCE**

Attachment C: Briefing Note on USE Review for meeting with Minister 19 December 2007

1. **Quality of teaching is the minimum requirement for quality USE.** Investing resources in regional or district in-service training is the most efficient way of improving the teaching of Primary mathematics and in quality of teaching in Primary Tops and Community High Schools. SSEE and CXC results will not improve unless all children have acceptable competency in reading and maths.
2. **Upgrading teachers improves the existing supply of teachers.** These will remain the bulk of Guyana teachers for the foreseeable future. If system can attract and retain Graduate teachers that is a bonus but in-school and in-service retraining of teachers offers more immediate and lasting benefits. Credit for training should be negotiated with UG and CPCE as a way of encouraging more teachers to upgrade their skills and qualifications.
3. **Where practicable, the remaining 24 CHS should be upgraded to GSS.** Improving quality of teachers (points 1 and 2) is more important for upgrading than provision of new facilities. Consideration should be given to defining the core curriculum for which all secondary schools should have sufficient qualified teaching staff. Larger, better staffed and better equipped GSS can offer more CXC subjects beyond the core but all schools should deliver a quality core curriculum.
4. **Academic education does not suit the majority of students** who should complete 5 years secondary education. Secondary curriculum should include units/modules of study which could be delivered by Technical and Labor Colleges. Guyana cannot afford to equip facilities in secondary schools which are under-resourced, under-staffed, under-utilized or difficult to maintain.
5. **Drop out in early years of secondary is a major educational and social issue.** Points 1-4 above are important steps in attracting and retaining youth in school. Girls appear to perform better at SSEE and to progress to GSS. Guyana cannot afford to neglect schooling for youth. Sport (and possibly some cricket/football/ basketball sports high schools if sponsorship is available) should have a greater place in addition to the core curriculum (redefined in 3 and 4 above).
6. **Primary tops should be consolidated into GSS where practicable** (existing policy). Where access and distance make consolidation unworkable, the strategy should be to aim for Grade 7 (and where necessary Grade 8) Primary Tops with 40+ students, and two trained secondary teachers. Training should be provided (regionally) in methods and content of Math teaching so that students at end Grade 7 (or Grade 8) can progress to the next grade in a GSS/boarding school.
7. **Where Primary tops <40 are unavoidable, a trained secondary teacher should be appointed** to the Primary School (or to the nearest GSS and to spend one or two weeks each month at the school. One teacher could support 2-4 schools depending on distance and appropriate transport). This strategy should be complemented with Student and Teacher Study materials or other distance education. Higher levels of literacy are required for effective distance education.
8. **Primary tops as satellite classes in a regional GSS?** This includes some of the above strategies, plus provision for teachers and students in satellite schools participating in

“whole school” activities at times during the year. This could be combined with teacher in-service activities at the regional GSS while students are there using science, computer or other resources not available in remote classes.

9. **Improving student attendance** – each of the above initiatives should improve quality of learning and encourage better attendance. Communities should discuss in SIPs how to improve attendance. This is a major inefficiency in Guyana’s education system. Reluctant learners should not be compelled to attend inadequate education offerings. The school calendar should give schools/regions sufficient flexibility so that time lost in rainy season, high river flows, flooding etc can be made up.
10. **Capital works** (from Budget and from borrowing) should target upgrading of existing facilities, improving water/sanitation, provide access to electricity and preventative maintenance rather than construction of new schools. For any new school construction, up to ten other schools could be upgraded.
11. **Improving efficiency** – except where there is no alternative, small schools should be encouraged to ensure that every child in their catchment area is enrolled and attending. This puts a greater requirement on Ministry and Regions to ensure that facilities reach minimum acceptable standards and that schools have sufficient trained staff. Improving teacher attendance is also part of improving efficiency.

Geoff Howse

Attachment D1: Summary of Guyana Performance on 15 Measures

15 MEASURES		HINTERLAND/RIVERINE				RURAL/COASTAL				URBAN/COASTAL			TOTAL
Region >>		R01	R07	R08	R09	R02	R05	R06	R10	R03	R04	R11	Guyana
1. Population age 6-11 2002 and 2007 (age 1-6 in 2002) (a)	C02	4451	2660	1577	3708	7876	8216	18445	6439	14998	24358	17699	110427
	P07	5270	2909	1851	4040	7450	7804	17930	6422	14136	24220	16630	108662
2. Primary completed Gr.6 %G1 in 1999/2000 (b)	M	89.0	88.7	97.1	86.0	88.9	98.3	88.3	72.1	88.4	91.1	87.0	88.2
	F	92.2	97.2	95.0	84.4	83.9	97.4	91.8	102.6	92.7	91.0	96.0	92.6
3. Primary Teachers (2004/05) %Trained	N=	186	111	43	160	320	311	595	318	526	696	747	4013
	%	25.8	56.8	20.9	33.8	65.6	57.2	55	59.4	63.1	58	62.5	57.1%
4. SSEE entry %Grade5 2004/05 (c)	N=	675	476	221	508	1167	1231	3044	989	2212	3353	3658	17534
	%	89.2	87.5	97.8	73.7	86.9	91.1	89.6	87	82.8	91.9	92.8	89.0%
5. SSEE mean scores Math + English	Math	15.9	18.3	14.7	17.1	23.3	23	21.3	22.9	23.9	22.6	27.9	23.1
	Engl.	14.1	16.2	13.8	15	19.1	18.2	17.6	20.1	19.6	19.2	25.2	19.7
6. Primary/Secondary Transition G7%G6 (d)	Gross	132%	102%	153%	136%	105%	101%	99%	153%	100%	83.6%	131%*	109%
	Net	105%	99.1%	87.7%	119%	95.9%	91.2%	89.4%	131%	81.7%	76.9%	99%*	92.3%
7. Population age 12-16 (2002) and 2007 (aged 7-11 in 2002)	C02	2386	1634	950	2461	5492	5389	12140	4091	10434	17317	13069	75363
	P07	3665	2184	1324	3090	6498	6849	15105	5310	12478	20255	14844	91602
8. GSS: Enrollment 2005/06 %Secondary	N=	861	1427	506	750	4063	3651	9381	3601	5157	3278	14896	47571
	%	36.7	79.4	54.3	36.9	81.8	72.3	87.7	75	64	38.9	84.8	71.3%
9. Mean GSS enrollment ("size") GSS (number schools)	X=	430	714	253	250	813	608	586	720	573	468	596	580
	Ns=	2	2	2	3	5	6	16	5	9	7	25	82
10. Secondary Teachers %Trained (2005/06)	Nt=	102	65	40	87	250	242	470	280	366	450	926	3278
	%	47.1	73.9	20	36.8	68	51.7	54.9	62.5	58.5	57.6	49.6	54.8%
11. Secondary Attendance %Attend (by gender)	M	60.6	70.7	67.6	74.4	75	57.8	73.2	77	66.3	55.9	75.8	69.2%
	F	65.4	77.2	75.7	79.9	79.3	60.4	77.8	79.9	74.7	62.3	79.1	74.4%
12. Attrition G9%G7 (e)	M	42.2%	94.3%	66.7%	115%	72.5%	73.9%	80.3%	72.5%	57.4%	76.2%	86.6%*	75.6%
	F	58.8%	90.6%	78.1%	138%	76.9%	73.8%	85.7%	85.6%	71.4%	85.7%	109%*	87.8%
13. Secondary Survival G11(2005/06) %G7 (2001/02)	M	8.4%	48.8%	1.6%	20.5%	47.0%	48.9%	34.3%	33.5%	31.1%	18.7%	35.1%	31.5%
	F	17.7%	49.5%	20.4%	22.4%	73.2%	60.1%	45.8%	53.0%	45.9%	28.7%	51.9%	45.6%
14. CXC result (2007)	N=	597	655	234	575	3594	2858	6512	2267	4366	3765	11279	36702
	%N	51.4	44	44.4	43.5	61	43.2	58.1	61.8	56.6	61.7	66.8	59.6
	%N	77.6	66.4	66.7	72.4	82	72.4	79.4	83.4	79.8	82.9	85.9	81.3
15. Secondary Expenditure per Secondary Student (G\$) (f)	G\$m (G\$)	104.849 48,564	102.536 57,897	50.120 56,505	101.056 43,976	198.414 41,904	173.915 36,995	362.719 34,863	304.894 72,370	281.921 34,621	294.148 34,593	1,066.924 59,859	3029.078 46,148

Notes on Attachment D1: Fifteen Measures

FIFTEEN MEASURES		
1	Population aged 6-11 years	(a) Primary school-age population, using September 2002 Census data. The table shows numbers aged 6-11 at the Census (C02) and the population aged 1-6 (P07) who would be aged 6-11 in 2007. This method assumes no mortality and no net migration. It is less reliable the greater the elapsed time after the population census.
2	Primary completion Grade 6/Grade 1 (5 years earlier)	(b) This differs from Primary Completion Rate (Grade 6 enrollment divided by population age 11, final year of Primary). Grade 6 divided by Grade 1 five years earlier is a more accessible measure, is not distorted by “estimated” population, but may be affected by grade repetition. A simpler measure is Grade 6 divided by current year Grade 1 as an approximate measure of “completion”, and gives each school community with an approximate measure of attrition. Note Female completion rates exceed Male completion rates in most regions.
3	Primary teachers (percent trained)	The focus here is on the percentage of Primary teachers who are “trained”. Guyana total is 57.1 percent but is 20-35% in three of the four “Hinterland” regions. Strengthening the quality of Primary teaching should be part of any strategy to achieve Universal Secondary Education.
4	SSEE entry (as % Grade 5)	(c) Numbers entering the Secondary School Entrance Examination (SSEE) is expressed as a percentage of Grade 5 in the previous year. With the exception of Region 9, most regions are within +/-5% of the national average (89%)
5	SSEE mean scores Math and English (outcome)	Math and English are “foundation” subjects for success in secondary school. All four Hinterland regions have averages less than the national average (Math 23.1; English 19.7). Other Rural regions (R05, R06) also perform below the national average, as does R04 (but may be distorted by R04 students attending Georgetown schools).
6	Primary-Secondary transition (Grade 7/Grade 6 previous year)	(d) Grade 7 students divided by Grade 6 students the previous year give a “gross” measure of transition with a 109% national average. Grade 7 enrollment is overstated by high repetition in Grade 7. Excluding repeaters, the net transition rate is 92.3%. *Georgetown (R11) is overstated (and R04 is understated) because R04 primary students attend R11 secondary schools.
7	Population aged 12-16 years	Secondary school age population is estimated using the same methodology as in 1(a) for Primary. The major difference is that Census population in 2002 had only 75,000 aged 12-16 years, compared with 91,600 aged 7-11 who would be aged 12-16 in 2007. Net emigration during 2002-2007 would reduce potential population. Migration from rural to coastal urban areas would also distort estimated school age population.
8	GSS enrollment (%Secondary)	If measure 7 gives 91,600 of secondary school age, only 47,571 were enrolled in GSS in 2005/06 (plus a further 19,000+ in CHS or Primary Tops). Increasing the GSS share is an important USE strategy if overall USE is to be achieved.
9	Mean GSS enrollment (“size”)	Many GSS have “small” enrollment and R08 and R09 average only 250 students. Students in schools with few students are less likely to reach Grade 11, and even less likely to achieve satisfactory CXC outcomes.
10	Secondary Teachers (% trained)	With only 54.8% of secondary teachers “trained” (but not necessarily in the subject/s they are teaching), Guyana cannot be competitive at CXC examinations.
11	Secondary attendance (by gender and school type)	Male secondary students average 69% attendance; Female students 74% attendance. Attendance rates are higher in GSS but lower in CHS and Primary Tops. Improving attendance is an important step for improving learning outcomes.
12	Attrition (Grade 9/Grade 7)	(e) 75.6% of male students and 87.8% of female students continue to Grade 9. Arresting attrition is a precondition of USE..
13	Secondary Survival (G11/G7)	Only 31.5% of Grade 7 Males and 45.6% of Females appear to reach Grade 11 in 2005/06.
14	CXC Result (outcome)	Only 59.6% of CXC entries are at Levels I-III plus a further 21.7% at Level IV. Teacher qualifications and improved student attendance are conditions for achieving better CXC outcomes.
15	Secondary Expenditure (and expenditure per student)	(f) Total secondary expenditure is an input measure not an educational outcome measure. Care is required with reporting of capital expenditure, block grants to President and Queens Colleges. Includes estimated Primary Tops expenditure.

Attachment D2: Primary Completion using Grade 6 2005/06 Enrollment as percentage Grade 1 Enrollment in 2000/01

Year		Sex	Reg01	Reg02	Reg03	Reg04	Reg05	Reg06	Reg07	Reg08	Reg09	Reg10	Reg11	Guyana	R1789	R2560	R3411
05/06	G1	M	569	516	1126	1653	703	1387	267	146	424	583	1481	8855	1406	3189	4260
05/06	G1	F	503	527	1011	1571	612	1336	263	152	384	496	1486	8341	1302	2971	4068
05/06	G2	M	493	594	1141	1696	669	1617	289	132	378	576	1618	9203	1292	3456	4455
05/06	G2	F	457	556	1047	1587	664	1504	252	131	349	516	1574	8637	1189	3240	4208
05/06	G3	M	512	668	1185	1906	708	1694	264	139	407	576	1822	9881	1322	3646	4913
05/06	G3	F	558	634	1171	1836	711	1634	237	134	414	577	1776	9682	1343	3556	4783
05/06	G4	M	500	670	1247	1788	669	1604	219	121	385	575	1975	9753	1225	3518	5010
05/06	G4	F	458	641	1161	1674	674	1512	223	119	318	525	1864	9169	1118	3352	4699
05/06	G5	M	397	635	1180	1724	683	1665	264	115	411	558	1891	9523	1187	3541	4795
05/06	G5	F	402	638	1186	1635	716	1631	257	110	358	526	1892	9351	1127	3511	4713
05/06	G6	M	389	657	1235	1834	692	1614	260	102	271	538	1785	9377	1022	3501	4854
05/06	G6	F	347	605	1184	1748	669	1566	215	101	293	540	1767	9035	956	3380	4699
05/06	Z	M	2860	3740	7114	10601	4124	9581	1563	755	2276	3406	10572	56592	7454	20851	28287
05/06	Z	F	2725	3601	6760	10051	4046	9183	1447	747	2116	3180	10359	54215	7035	20010	27170
00/01	G1	M	391	769	1405	2018	743	1938	281	134	360	665	2026	10730	1166	4115	5449
00/01	G1	F	391	715	1376	1914	695	1851	212	106	308	617	1902	10087	1017	3878	5192
00/01	G2	M	424	691	1341	1880	717	1748	236	86	353	564	2174	10214	1099	3720	5395
00/01	G2	F	415	696	1264	1897	739	1614	217	80	333	490	1992	9737	1045	3539	5153
00/01	G3	M	422	654	1283	1773	669	1555	250	89	360	566	1942	9563	1121	3444	4998
00/01	G3	F	402	608	1198	1721	670	1516	233	87	334	571	1896	9236	1056	3365	4815
00/01	G4	M	389	565	1147	1545	678	1380	248	107	314	479	1895	8747	1058	3102	4587
00/01	G4	F	359	579	1073	1516	584	1353	234	92	297	466	1856	8409	982	2982	4445
00/01	G5	M	293	551	1082	1447	625	1271	201	62	315	450	1807	8104	871	2897	4336
00/01	G5	F	286	539	1012	1389	598	1272	220	55	247	401	1775	7794	808	2810	4176
00/01	G6	M	244	548	1035	1629	589	1282	186	88	284	389	1763	8037	802	2808	4427
00/01	G6	F	245	541	960	1560	547	1288	174	79	262	389	1608	7653	760	2765	4128
00/01	Z	M	2163	3778	7293	10292	4021	9174	1402	566	1986	3113	11607	55395	6117	20086	29192
00/01	Z	F	2098	3678	6883	9997	3833	8894	1290	499	1781	2934	11029	52916	5668	19339	27909
G6/Grade1	M		0.995	0.854	0.879	0.909	0.931	0.833	0.925	0.761	0.753	0.809	0.881	0.874	0.877	0.851	0.891
G6/Grade1	F		0.887	0.846	0.860	0.913	0.963	0.846	1.014	0.953	0.951	0.875	0.929	0.896	0.940	0.872	0.905
G6/Grade1	All		0.941	0.850	0.870	0.911	0.946	0.839	0.963	0.846	0.844	0.841	0.904	0.884	0.906	0.861	0.898

MOE Statistical Bulletins 2000/01, 2005/06 (Table 22) (Primy_Completion.XLS)

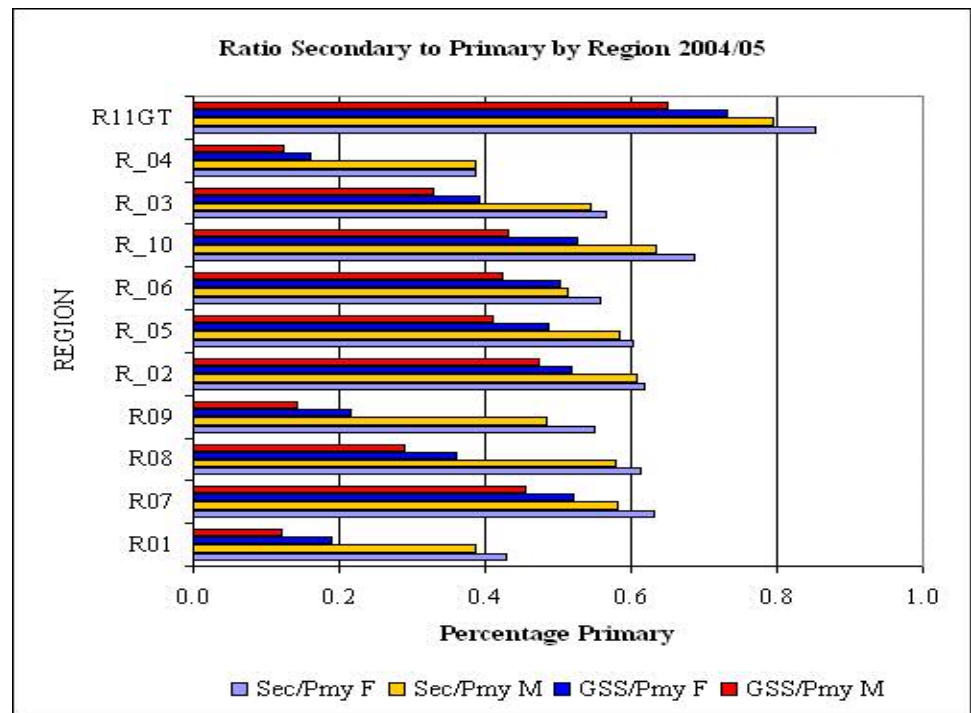
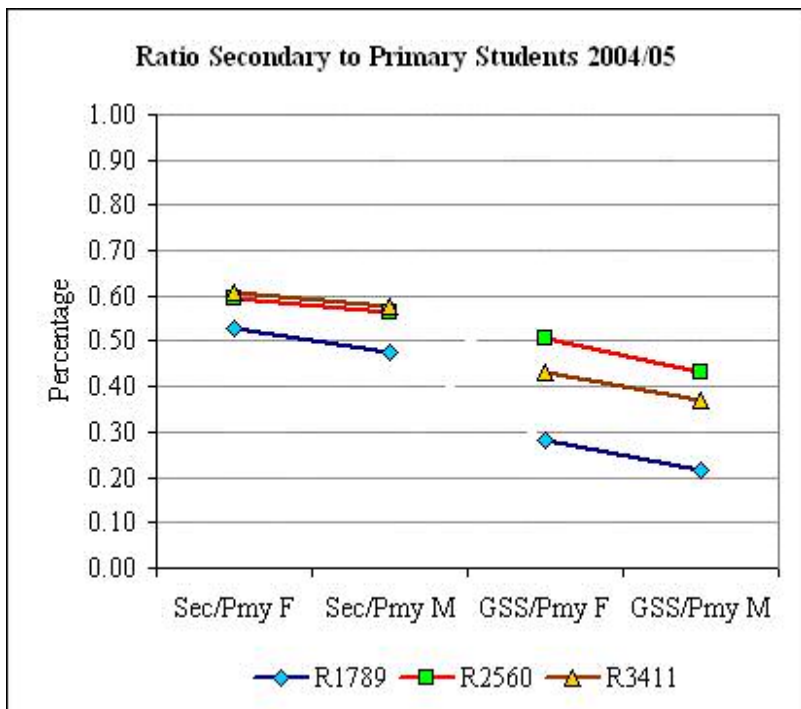
Attachment D3: Secondary Enrollment as percent Primary Enrollment, 2004/05

Table		Sex	R1789	R2560	R3411	Guyana	R01	R07	R08	R09	R_02	R_05	R_06	R_10	R_03	R_04	R11GT
22	Student	F	6863	20380	28642	55885	2573	1403	727	2160	3812	3891	9547	3130	7134	10770	10738
22	Student	M	7322	21137	29627	58086	2739	1523	762	2298	3913	4039	9923	3262	7507	11199	10921
41A	PmyTop	F	1629	1369	1401	4399	571	155	183	720	239	447	326	357	382	1019	0
41A	PmyTop	M	1862	2020	1852	5734	665	189	221	787	300	702	555	463	515	1337	0
41B	CommHS	F	46	461	3595	4102	46	0	0	0	141	0	178	142	874	1419	1302
41B	CommHS	M	62	739	4299	5100	62	0	0	0	225	0	322	192	1117	1618	1564
41C	GenSS	F	1946	10330	12356	24632	485	732	263	466	1978	1894	4810	1648	2788	1721	7847
41C	GenSS	M	1570	9134	10967	21671	330	695	220	325	1852	1658	4213	1411	2467	1389	7111

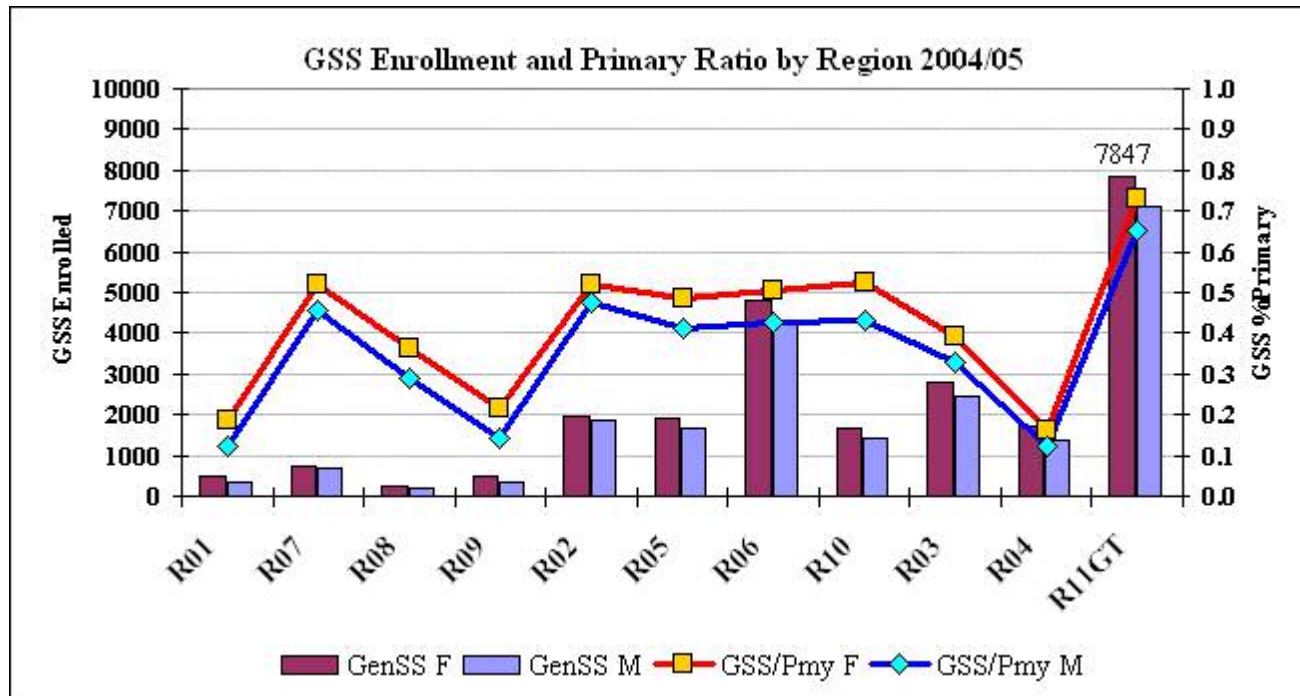
ZSEC/Pmy	F	0.5276	0.5967	0.6058	0.5929	0.4283	0.6322	0.6135	0.5491	0.6186	0.6016	0.5566	0.6859	0.5669	0.3862	0.8520
ZSEC/Pmy	M	0.4772	0.5627	0.5778	0.5596	0.3859	0.5804	0.5787	0.4839	0.6075	0.5843	0.5129	0.6334	0.5460	0.3879	0.7943
ZSEC/Pmy	Z	0.5016	0.5794	0.5916	0.5759	0.4064	0.6053	0.5957	0.5155	0.6129	0.5928	0.5344	0.6591	0.5562	0.3870	0.8229
GSS/Pmy	F	0.2835	0.5069	0.4314	0.4408	0.1885	0.5217	0.3618	0.2157	0.5189	0.4868	0.5038	0.5265	0.3908	0.1598	0.7308
GSS/Pmy	M	0.2144	0.4321	0.3702	0.3731	0.1205	0.4563	0.2887	0.1414	0.4733	0.4105	0.4246	0.4326	0.3286	0.1240	0.6511
GSS/Pmy	Z	0.2479	0.4688	0.4003	0.4063	0.1534	0.4877	0.3244	0.1774	0.4958	0.4479	0.4634	0.4786	0.3589	0.1416	0.6906

	R1789	R2560	R3411	Guyana
Sec/Pmy F	52.8%	59.7%	60.6%	59.3%
Sec/Pmy M	47.7%	56.3%	57.8%	56.0%
GSS/Pmy F	28.4%	50.7%	43.1%	44.1%
GSS/Pmy M	21.4%	43.2%	37.0%	37.3%

	R01	R07	R08	R09	R_02	R_05	R_06	R_10	R_03	R_04	R11GT	R4+11
Sec/Pmy F	0.4283	0.6322	0.6135	0.5491	0.6186	0.6016	0.5566	0.6859	0.5669	0.3862	0.8520	0.6187
Sec/Pmy M	0.3859	0.5804	0.5787	0.4839	0.6075	0.5843	0.5129	0.6334	0.5460	0.3879	0.7943	0.5886
GSS/Pmy F	0.1885	0.5217	0.3618	0.2157	0.5189	0.4868	0.5038	0.5265	0.3908	0.1598	0.7308	0.4449
GSS/Pmy M	0.1205	0.4563	0.2887	0.1414	0.4733	0.4105	0.4246	0.4326	0.3286	0.1240	0.6511	0.3843



	R01	R07	R08	R09	R02	R05	R06	R10	R03	R04	R11GT	Guyana
GenSS F	485	732	263	466	1978	1894	4810	1648	2788	1721	7847	24632
GenSS M	330	695	220	325	1852	1658	4213	1411	2467	1389	7111	21671
GSS/Pmy F	18.8%	52.2%	36.2%	21.6%	51.9%	48.7%	50.4%	52.7%	39.1%	16.0%	73.1%	44.1%
GSS/Pmy M	12.0%	45.6%	28.9%	14.1%	47.3%	41.0%	42.5%	43.3%	32.9%	12.4%	65.1%	37.3%



Attachment D4: Staffing and School Size

Table D4.1 presents data with schools grouped 1-150, 151-300, 301-450 etc., to show Grade 10-12 students as more than 30% of total enrollment in GSS>300 students, and Trained Graduate teachers more than 10% of all teachers in secondary schools with 301-750 students. The Table could indicate an organizational “boundary” for schools above/below 300 students. Less than half the teachers are trained, less than 10% are trained graduates and, upper secondary students represent less than 20% of enrollment. The regional distribution of secondary schools in **Table D4.2** shows the concentration of small Primary Tops across all regions (except Georgetown).

Table D4.1: Secondary Schools by Size, Type, Grade10+ students and Teachers Trained

SIZE	Type	Mean Size	Students 2005/06	Grade 10+ %Total	Grades 10,11,12	%Female Teachers	Total Teachers	%Trained Teachers	%Graduate Trained	%Unqual Untrained	Number Schools
1	1PTop	30	6564	11.6%	763	57.6%	335	45.1%	3.6%	26.3%	216
1	2CHS	53	106	3.8%	4	70.0%	20	35.0%	5.0%	0.0%	2
1	3GSS	102	102	28.4%	29	75.0%	4	25.0%	0.0%	25.0%	1
151	1PTop	198	2779	14.1%	392	70.5%	112	48.2%	2.7%	5.4%	14
151	2CHS	239	1436	19.9%	286	69.4%	85	45.9%	3.5%	8.2%	6
151	3GSS	198	992	20.4%	202	59.4%	64	42.2%	4.7%	3.1%	5
301	1PTop	354	707	14.4%	102	68.0%	25	40.0%	0.0%	4.0%	2
301	2CHS	388	2327	20.3%	473	76.3%	131	48.9%	6.9%	14.5%	6
301	3GSS	391	7422	31.2%	2317	67.0%	409	54.5%	12.0%	3.7%	19
451	2CHS	521	5207	22.3%	1159	80.0%	225	49.3%	12.9%	6.2%	10
451	3GSS	540	9728	32.1%	3121	73.0%	519	56.5%	11.9%	2.9%	18
601	3GSS	679	16977	33.5%	5692	66.7%	826	56.7%	11.9%	1.0%	25
751	3GSS	822	7400	29.8%	2202	65.6%	326	64.4%	9.2%	4.0%	9
901	3GSS	968	3870	31.2%	1206	66.5%	158	64.6%	7.0%	1.3%	4
1051	3GSS	1080	1080	33.2%	359	53.8%	39	92.3%	5.1%	7.7%	1
Secondary			66697	27.4%	18307	67.9%	3278	54.8%	9.5%	5.9%	338

Table D4.2: Regional Distribution of Secondary Schools by Size and School Type

SIZE	Type	Schools	Region										
			1	2	3	4	5	6	7	8	9	10	11
1	1PTop	216	36	20	19	27	15	12	16	17	38	16	0
1	2CHS	2	0	0	0	0	0	0	0	0	0	1	1
1	3GSS	1	0	0	0	0	0	0	0	1	0	0	0
151	1PTop	14	1	0	3	4	4	1	0	0	0	1	0
151	2CHS	6	1	2	2	0	0	0	0	0	0	0	1
151	3GSS	5	0	0	0	1	0	1	0	0	2	0	1
301	1PTop	2	0	0	0	0	1	0	0	0	0	1	0
301	2CHS	6	0	0	1	2	0	0	0	0	0	1	2
301	3GSS	19	2	0	2	2	1	4	1	1	1	0	5
451	2CHS	10	0	0	2	4	0	0	0	0	1	0	3
451	3GSS	18	0	1	4	3	1	2	0	0	0	0	7
601	3GSS	25	0	1	2	1	3	6	0	0	0	4	8
751	3GSS	9	0	1	1	0	1	2	0	0	0	1	3
901	3GSS	4	0	2	0	0	0	1	0	0	0	0	1
1051	3GSS	1	0	0	0	0	0	0	1	0	0	0	0
Secondary			40	27	36	44	26	29	18	19	42	25	32

Table D4.3 School Size, Student Teacher Ratios and Percentage Teachers Trained, 2005/06

Size /50	Schools	Students Enrolled	STR	Trained Teachers	Total Teachers	percent Trained	Primary Tops	CHS	GSS
1	185	6358	17.7	159	359	44	45	35	25
151	25	5207	20.0	120	261	46	48	46	42
301	27	10456	18.5	297	565	53	40	49	55
451	28	14935	20.1	404	744	54		49	56
601	25	16977	20.6	468	826	57			57
751	9	7400	22.7	210	326	64			64
901	4	3870	24.5	102	158	65			65
1051	1	1080	27.7	36	39	92			92
	304	66283	20.2	1796	3278	55	46	48	58

Size /50	Schools	Students Enrolled	STR	Trained Teachers	Total Teachers	percent Trained	Primary Tops	CHS	GSS
1	141	2700	12.2	100	221	45	45	43	
51	34	2518	25.7	35	98	36	36	31	
101	10	1140	28.5	24	40	60	64		25
151	11	1893	19.5	44	97	45	54	36	31
201	10	2235	19.6	54	114	47	39	54	50
251	4	1079	21.6	22	50	44	50	42	
301	4	1366	19.5	40	70	57		60	56
351	13	4834	19.0	136	255	53	40	55	55
401	10	4256	17.7	121	240	50		39	54
451	7	3372	19.8	97	170	57		53	63
501	10	5266	20.8	135	253	53		48	56
551	11	6297	19.6	172	321	54		44	55
601	7	4397	19.5	147	226	65			65
651	6	3986	19.7	114	202	56			56
701	12	8594	21.6	207	398	52			52
751	4	3110	23.2	86	134	64			64
801	1	812	33.8	13	24	54			54
851	4	3478	20.7	111	168	66			66
901	2	1842	25.6	39	72	54			54
951	1	988	23.0	32	43	74			74
1001	1	1040	24.2	31	43	72			72
1051	1	1080	27.7	36	39	92			92
	304	66283	20.2	1796	3278	55	46	48	58

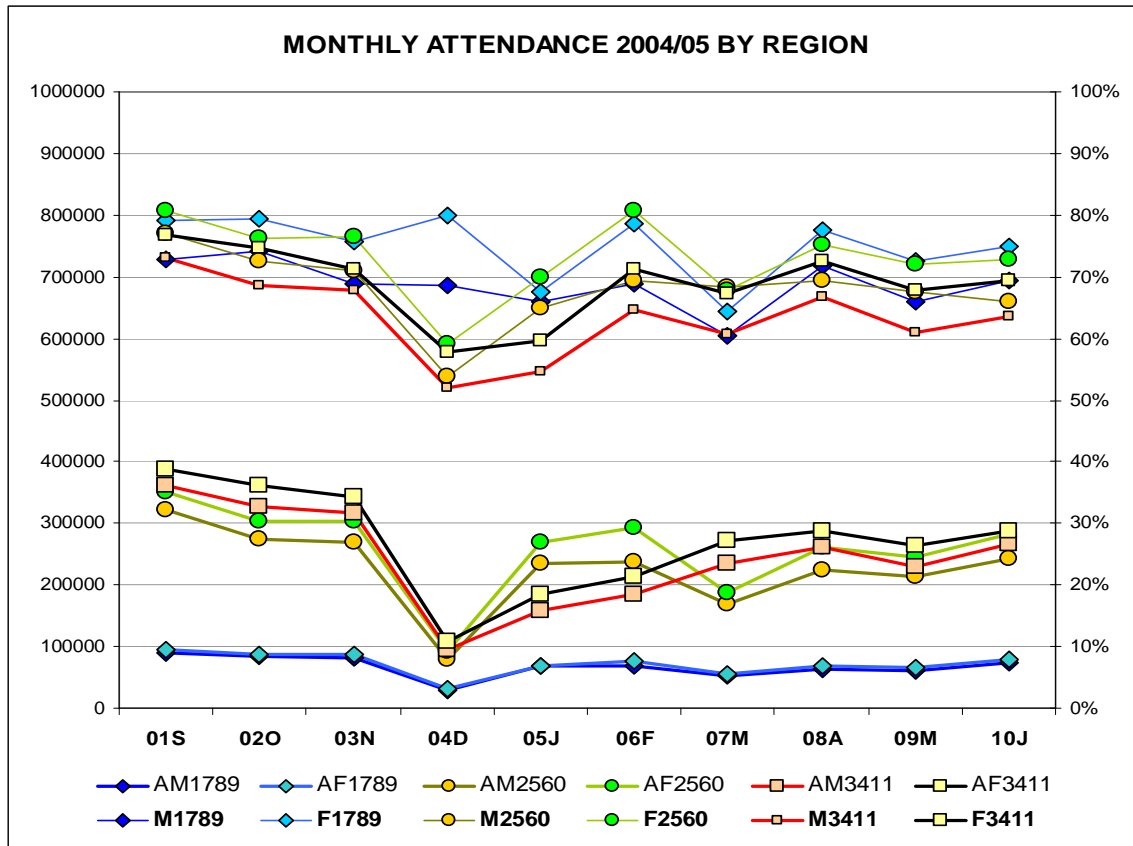
Size /50	Schools	Students Enrolled	STR	Trained Teachers	Total Teachers	percent Trained	Primary Tops	CHS	GSS
1	210	11565	18.65	279	620	45	46	44	41
301	55	25391	19.4	701	1309	54	40	49	56
601	34	24377	21.16	678	1152	59			59
901	5	4950	25.13	138	197	70			70
	304	66283	20.22	1796	3278	55	46	48	58

Source: MOE Statistics (GY0506_X004_Type.sql) Attachment D4

Attachment D5: Student Attendance

D5.1 Regional patterns by gender in **Figure D5.1** reflect the aggregate trends in Table 4.6, with some notable variations – Sessions attended are on the left-hand scale and the lines in the bottom half of Figure 4.6. The Coastal/Urban regions including Georgetown (R3, 4&11) have more sessions attended (black=Female; red=Male) except following the flooding when they took longer to recover. Regions 2, 5, 6&10 had more sessions until a seasonal downturn in March 2005. The hinterland regions (R1, 7, 8&9) were less affected by the lowland/coastal flooding but have fewer students resulting in fewer total sessions. R1, 7, 8&9 has more male students so that male and female sessions are approximately equal.

Figure D5.1



D5.4 Another factor affecting regional attendance rates is the differing mix of schools. R1, 7 8&9 Hinterland has few GSS, smaller schools and many Primary Tops. R2, 5, 6&10 has a mix of all types, while coastal/urban R3, 4&11 has most GSS with higher enrollment, especially of female students.

Figure D5.2

D5.5 Being larger and urban, GSS account for most students and most of the attendance sessions in **Figure D5.2** (Female black lines; Male red lines). Primary Tops and CHS account for fewer than 100,000 student sessions for males and females in almost every month.

D5.6 Female attendance exceeds male attendance in every month. In **Table D5.1**, Male attendance in Primary Tops exceeded 60% only in September 2004, Female attendance in September, October and February 2005. CHS had a similar pattern with December 2004 under 40% (flooding in R3, 4&11).

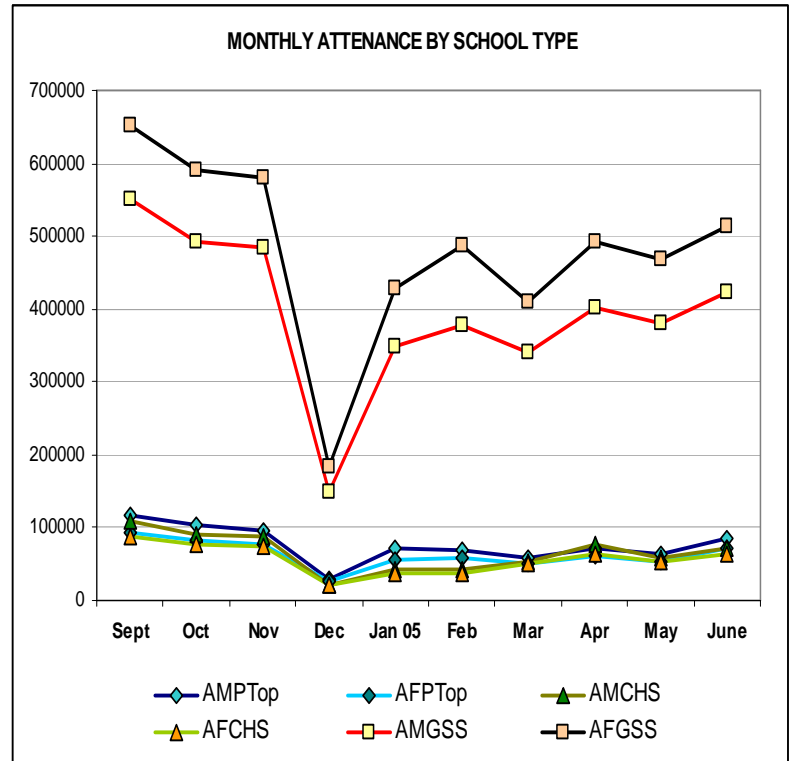


Table D5.1 Monthly attendance rates by Type of School and Gender, 2004/05

	Sept	Oct	Nov	Dec	Jan 05	Feb	Mar	Apr	May	June	04/05 (a)
AMPTop	116,972	104,911	96,005	30,470	71,086	68,504	59,725	72,522	63,455	86,250	773,213
MPTop	60.6%	58.0%	55.1%	46.1%	49.9%	53.5%	50.5%	52.0%	48.8%	52.2%	53.5%
AFPTop	93,172	83,072	77,891	26,963	55,464	58,722	49,578	60,845	53,245	71,270	633,093
FPTop	64.4%	61.1%	59.0%	54.9%	51.8%	61.0%	57.0%	58.9%	55.4%	59.6%	58.8%
AMCHS	107,868	89,275	87,054	22,574	41,953	43,695	54,440	76,592	58,499	71,647	654,624
MCHS	67.7%	58.0%	57.6%	35.9%	44.8%	55.1%	48.9%	59.5%	50.8%	53.3%	54.9%
AFCHS	87,127	77,571	75,055	20,526	36,991	38,313	51,308	63,590	54,047	63,871	569,391
FCHS	72.5%	66.2%	65.1%	42.9%	50.5%	59.3%	58.6%	62.7%	59.9%	61.7%	61.7%
AMGSS	549,692	493,020	485,010	149,870	348,907	378,055	340,943	400,909	381,046	423,567	3,967,904
MGSS	80.3%	77.4%	75.9%	61.8%	67.1%	72.9%	69.6%	74.8%	70.7%	71.7%	73.3%
AFGSS	652,202	591,093	580,297	183,670	428,680	486,425	410,549	492,944	468,285	514,740	4,833,173
FGSS	82.3%	80.1%	77.8%	64.8%	69.8%	81.2%	69.9%	78.5%	73.9%	75.0%	76.3%

Source: MOE data. (ATT4500.XLS) (a) Total includes July attendance (mostly Grade 12)

D5.7 In Table D5.1, months with more than 75% attendance are shaded gold, between 60% and 75% shaded tan, and 40% to 60% are shaded light green. In December, males attending CHS (mostly in R3, 4&11) recorded only 35.9% attendance. GSS, by contrast with CHS and primary tops, reported no month less than 60% and several months >75%. **Figure D5.3** plots monthly attendance rates in Table D4.1.

D5.8 As these tables/graphs use individual schools data, **Figure D5.4** can present the same data by size of school.

Figure D5.3

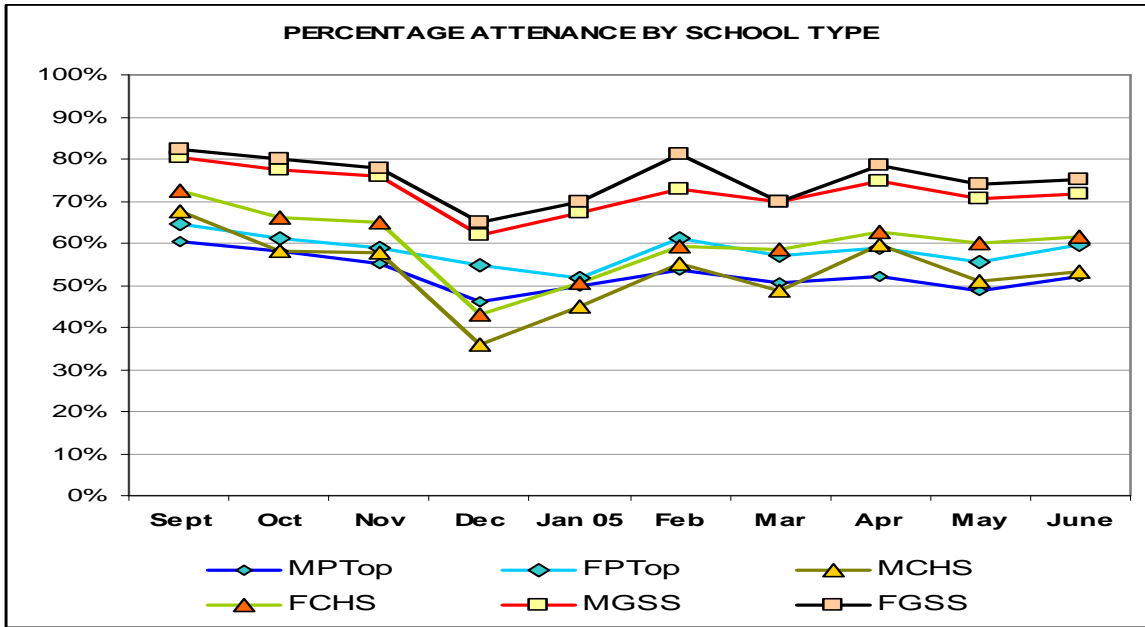
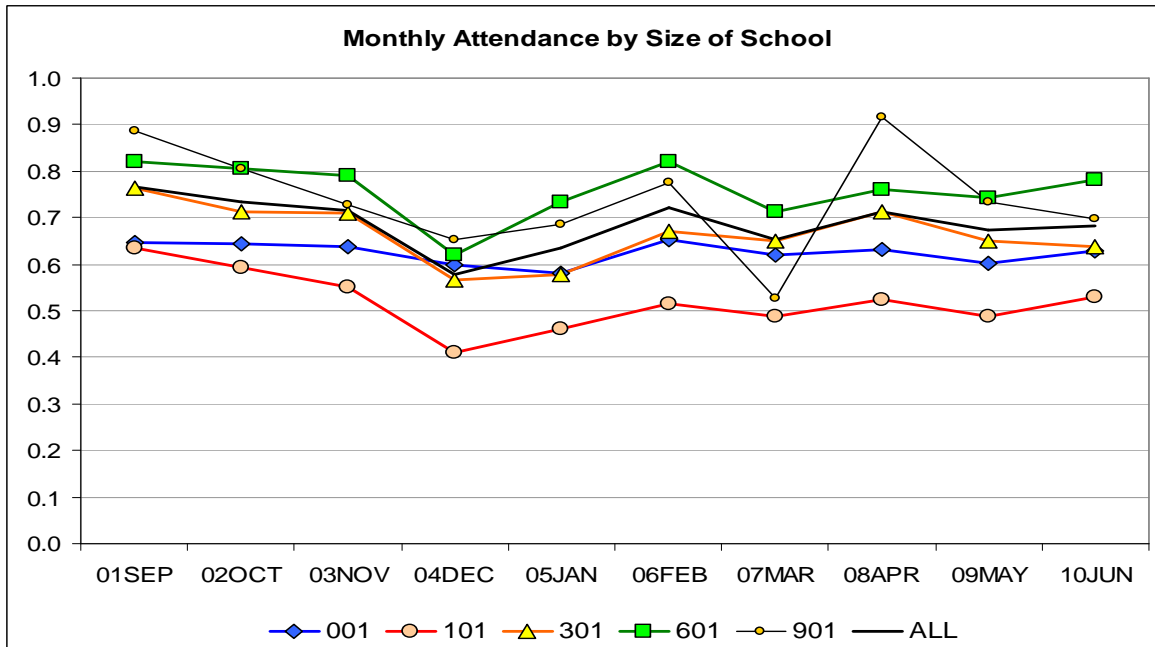


Figure D5.4



Attachment D6A: School Age Population Profile 2004/05 by Region and Gender

ZONE	Region	Sex	Age05	Age06	Age07	Age08	Age09	Age10	Age11	Age12	Age13	Age14	Age15	Age16	Age17
R1789	R01	F	69	332	433	432	396	386	391	434	265	213	179	81	64
R1789	R01	M	87	332	425	424	449	410	393	487	256	191	182	101	59
R1789	R07	F	32	186	248	218	259	220	252	239	197	178	148	96	17
R1789	R07	M	42	206	262	220	268	244	276	286	194	145	176	79	9
R1789	R08	F	42	139	128	108	131	107	117	107	100	88	63	35	8
R1789	R08	M	40	142	124	116	101	141	130	105	85	81	86	30	22
R1789	R09	F	211	317	328	286	314	303	357	418	228	253	187	88	56
R1789	R09	M	216	314	337	337	327	303	365	399	208	211	195	105	93
R1789		F	354	974	1137	1044	1100	1016	1117	1198	790	732	577	300	145
R1789		M	385	994	1148	1097	1145	1098	1164	1277	743	628	639	315	183
R2560	R02	F	124	547	630	689	624	667	605	430	496	486	403	328	141
R2560	R02	M	119	582	631	658	694	652	599	530	498	462	404	294	167
R2560	R05	F	151	555	636	662	682	656	699	566	465	376	349	222	213
R2560	R05	M	158	625	652	688	706	663	666	567	538	395	331	219	191
R2560	R06	F	311	1382	1607	1540	1738	1747	1468	1423	1068	947	847	514	269
R2560	R06	M	338	1469	1659	1713	1747	1778	1396	1309	1078	1010	784	481	251
R2560	R10	F	126	509	496	517	542	456	560	507	355	359	374	279	197
R2560	R10	M	117	532	512	533	583	476	581	455	374	364	341	228	232
R2560		F	712	2993	3369	3408	3586	3526	3332	2926	2384	2168	1973	1343	820
R2560		M	732	3208	3454	3592	3730	3569	3242	2861	2488	2231	1860	1222	841
R3411	R03	F	200	1011	1200	1151	1337	1287	1105	968	853	763	668	488	147
R3411	R03	M	237	1072	1244	1298	1341	1271	1205	917	863	793	715	450	200
R3411	R04	F	307	1571	1879	1767	1854	1871	1635	1187	942	931	611	240	134
R3411	R04	M	328	1584	1962	1873	1956	1887	1669	1353	1042	868	673	216	132
R3411	R11	F	375	1551	1761	1621	2031	2022	1932	1580	1768	1722	1606	1102	816
R3411	R11	M	358	1669	1771	1683	1931	2041	1952	1643	1546	1475	1572	1014	941
R3411		F	882	4133	4840	4539	5222	5180	4672	3735	3563	3416	2885	1830	1097
R3411		M	923	4325	4977	4854	5228	5199	4826	3913	3451	3136	2960	1680	1273

Source: MOE Statistical Digest - Students enrolled 2004/05 PopAge45_001.sql; Zone is grouping of Regions used in USE Review; Region 11=Georgetown.

Note: Age 5 includes <6; Age 11 includes secondary students <12; Age 12 includes Primary students<12; Age 17 includes Secondary students>16 years.

Population at September 2002 Census (Age=Census+2 years) and Students Enrolled in 2004/05 by Zone, School Level and Gender

ZONE	Level	Sex	Age 2	Age03	Age04	Age05	Age06	Age07	Age08	Age09	Age10	Age11	Age12	Age13	Age14	Age15	Age16	Age17	Age18
R1789	0Popul	F	1451	1206	1272	1081	1267	1097	1036	1053	1168	1032	909	869	877	787	711	633	582
R1789	0Popul	M	1516	1172	1303	1209	1188	1142	1097	1131	1204	1052	961	884	888	826	776	702	649
R1789	1Primary	F				354	974	1137	1044	1100	1016	812	426						
R1789	1Primary	M				385	994	1148	1097	1145	1098	885	570						
R1789	2PTop	F										109	352	358	363	273	115	59	
R1789	2PTop	M										106	342	422	372	343	165	112	
R1789	3CHS	F											4	16	7	10	3	6	
R1789	3CHS	M											3	19	13	14	9	4	
R1789	4GSS	F											196	416	416	362	294	182	80
R1789	4GSS	M											173	362	302	243	282	141	67
R2560	0Popul	F	2980	2718	2934	3121	3551	3382	3499	3751	3695	3347	3158	2776	2732	2897	2711	2741	2510
R2560	0Popul	M	3026	2889	3226	3279	3729	3563	3715	3830	3673	3393	3211	2928	2751	2931	2861	2586	2392
R2560	1Primary	F				712	2993	3369	3408	3586	3526	2533	253						
R2560	1Primary	M				732	3208	3454	3592	3730	3569	2554	298						
R2560	2PTop	F											111	324	333	264	198	102	37
R2560	2PTop	M											127	488	514	430	283	116	62
R2560	3CHS	F											29	108	115	60	73	49	27
R2560	3CHS	M											62	173	147	132	108	71	46
R2560	4GSS	F											659	2241	1936	1844	1702	1192	756
R2560	4GSS	M											499	1902	1827	1669	1469	1035	733
R3411	0Popul	F	4276	4117	4474	4365	4899	4498	4659	5115	5141	4722	4464	4067	4075	4437	4167	3968	3729
R3411	0Popul	M	4370	4198	4613	4481	5047	4816	4819	5295	5197	4803	4517	4256	4201	4496	4113	3973	3661
R3411	1Primary	F				882	4133	4840	4539	5222	5180	3590	256						
R3411	1Primary	M				923	4325	4977	4854	5228	5199	3746	375						
R3411	2PTop	F											162	530	335	208	126	30	10
R3411	2PTop	M											202	653	468	293	191	36	9
R3411	3CHS	F											201	859	717	803	618	256	141
R3411	3CHS	M											261	1030	939	853	801	279	136

R3411	4GSS	F										719	2090	2511	2405	2141	1544	946	
R3411	4GSS	M										617	1855	2044	1990	1968	1365	1128	

Source: As above. PopAge45_003.sql; Note: Age 5 is <6; Age 11 is <12; Age 12 includes Primary students<12; Age 17 includes Secondary students>16 years.

Attachment D6B: AGGREGATE SECONDARY ENROLLMENT BY REGION BY GRADE AND BY GENDER: 1997/98-2001/02-2005/06

SURVIVAL 2001/02 - 2005/06

Year	REG	NN	M07	F07	M08	F08	M09	F09	M10	F10	M11	F11	M12	F12	Male	Fem.	Total	M11/M07	F11/F07	Z11/Z07
0506	R01	40	436	420	298	281	222	280	121	139	27	53	0	0	1104	1173	2277	8.41%	17.67%	12.88%
0506	R02	27	665	735	593	678	366	436	401	411	280	405	0	0	2305	2665	4970	46.98%	73.24%	59.62%
0506	R03	36	1196	1036	1037	998	795	782	640	682	384	497	0	0	4052	3995	8047	31.09%	45.89%	38.01%
0506	R04	44	1286	1210	1141	1060	903	863	552	651	289	384	40	56	4211	4224	8435	18.66%	28.66%	23.30%
0506	R05	26	717	664	612	540	511	510	432	466	262	339	0	0	2534	2519	5053	48.88%	60.11%	54.64%
0506	R06	30	1410	1366	1231	1273	995	1003	839	969	493	638	15	44	4983	5293	10276	34.28%	45.80%	39.95%
0506	R07	18	226	201	219	209	188	201	159	193	102	100	0	0	894	904	1798	48.80%	49.50%	49.15%
0506	R08	18	155	141	90	104	83	91	55	80	2	29	0	0	385	445	830	1.56%	20.42%	11.48%
0506	R09	42	409	359	402	303	306	297	160	188	62	64	1	3	1340	1214	2554	20.53%	22.38%	21.43%
0506	R10	25	673	607	524	564	399	441	345	459	150	215	12	40	2103	2326	4429	33.48%	52.96%	42.74%
0506	R11	32	2401	2228	2110	2239	1698	1852	1401	1680	803	1130	150	215	8563	9344	17907	35.10%	51.86%	43.27%
0506	ZGY	338	9574	8967	8257	8249	6466	6756	5105	5918	2854	3854	218	358	32474	34102	66576	31.54%	45.62%	38.34%
0102	R01	42	321	300	194	239	173	166	120	120	38	22	0	0	846	847	1693	18.10%	10.28%	14.15%
0102	R02	31	596	553	550	507	454	491	346	484	270	349	1	8	2217	2392	4609	52.53%	60.91%	56.95%
0102	R03	44	1235	1083	992	1052	978	982	777	726	413	521	0	0	4395	4364	8759	39.83%	55.19%	47.15%
0102	R04	48	1549	1340	1308	1143	995	919	769	741	235	290	26	43	4882	4476	9358	16.94%	24.56%	20.44%
0102	R05	29	536	564	565	591	499	496	447	475	305	371	0	0	2352	2497	4849	47.36%	62.46%	54.60%
0102	R06	46	1438	1393	1335	1277	1155	1117	914	938	509	728	0	0	5351	5453	10804	36.02%	50.98%	43.54%
0102	R07	19	209	202	175	163	169	166	137	148	16	24	0	0	706	703	1409	9.76%	17.91%	13.42%
0102	R08	19	128	142	46	65	62	58	63	54	10	12	0	0	309	331	640	9.80%	14.63%	11.96%
0102	R09	42	302	286	213	230	187	182	173	192	14	22	0	0	889	912	1801	5.09%	8.12%	6.59%
0102	R10	29	448	406	402	408	365	366	327	416	120	203	2	10	1664	1809	3473	25.37%	47.76%	35.97%
0102	R11	32	2288	2179	1843	2003	1751	2014	1364	1490	910	1216	43	95	8199	8997	17196	48.48%	67.15%	57.65%
0102	ZGY	381	9050	8448	7623	7678	6788	6957	5437	5784	2840	3758	72	156	31810	32781	64591	35.08%	49.08%	41.88%
97/98	R01	38	210	214	132	115	102	96	68	94	21	19	0	0	533	538	1071	MOE enrollment data (Table 41A-C). Grade 11 students compared with Grade 7 four years earlier. Grade 7 in 2001/02 compared with Grade 11 in 2005/06 (turquoise shading). Lime Green shading for 1997/97-2001/02 cohort. Source: G7_G11_Completion.XLS (December 2007)		
97/98	R02	36	514	573	527	482	450	435	427	410	186	286	0	0	2104	2186	4290			
97/98	R03	54	1037	944	873	883	692	677	688	672	301	486	0	0	3591	3662	7253			
97/98	R04	53	1387	1181	1176	1052	981	893	795	761	243	351	25	34	4607	4272	8879			
97/98	R05	34	644	594	565	588	520	510	436	491	170	333	0	0	2335	2516	4851			
97/98	R06	64	1413	1428	1148	1255	942	1040	980	1046	556	726	3	3	5042	5498	10540			
97/98	R07	17	164	134	197	184	106	125	125	120	19	25	0	0	611	588	1199			
97/98	R08	17	102	82	99	103	61	72	34	49	3	12	0	0	299	318	617			
97/98	R09	37	275	271	222	180	194	186	183	172	14	24	0	0	888	833	1721			
97/98	R10	31	473	425	459	425	398	420	441	478	175	261	3	3	1949	2012	3961			
97/98	R11	36	1877	1811	1784	1876	1863	1910	1704	1946	788	1216	31	65	8047	8824	16871			
97/98	ZGY	417	8096	7657	7182	7143	6309	6364	5881	6239	2476	3739	62	105	30006	31247	61253			

Attachment D7: SSEE Examination Results by Region, 2001/02-2006/07

Region	Year	GRADE 6			Fem%	SSEE		MATH		ENGLISH		SOCIAL SC		SCIENCE		MESS
		M6	F6	ENROL	Enrol	%G6	Entries	mean	stdev	mean	stdev	mean	stdev	mean	stdev	TOTAL
Reg01	01/02	253	269	522	52%	69%	358	17.2	8.4	19.8	8.8	20.4	9.7	23.9	9.9	81.3
Reg02	01/02	476	520	996	52%	96%	959	24.9	14.6	24.1	12.6	24.9	13.6	28.1	13.7	102.0
Reg03	01/02	1041	1023	2064	50%	91%	1871	25.0	14.0	23.6	12.0	25.3	13.6	27.8	13.4	101.7
Reg04	01/02	1328	1319	2647	50%	106%	6326	25.0	14.2	25.3	13.1	25.7	13.6	28.4	13.5	104.4
Reg11	01/02	1701	1638	3339	49%											
Reg05	01/02	616	584	1200	49%	93%	1111	21.3	11.3	21.5	11.0	22.7	12.1	25.7	12.1	91.1
Reg06	01/02	1211	1243	2454	51%	95%	2336	20.6	11.9	20.6	11.1	21.5	12.3	24.6	12.7	87.2
Reg07	01/02	172	166	338	49%	104%	351	19.9	10.2	21.5	10.1	21.9	11.1	24.8	11.3	88.0
Reg08	01/02	73	63	136	46%	127%	173	11.0	6.2	13.3	8.5	14.0	8.0	15.2	8.1	53.4
Reg09	01/02	274	272	546	50%	75%	409	14.2	7.1	16.6	7.9	16.6	8.5	19.2	9.2	66.7
Reg10	01/02	351	382	733	52%	109%	798	23.8	11.5	24.8	11.2	26.7	12.3	29.7	12.1	105.0
TOTAL	01/02	7496	7479	14975	50%	98%	14692	23.2	13.4	23.3	12.3	24.1	13.2	27.0	13.2	97.6

Reg01	02/03	271	307	578	53%	82%	472	16.0	7.7	17.2	8.4	19.3	9.2	21.7	10.9	74.2
Reg02	02/03	504	535	1039	51%	98%	1021	24.3	12.7	25.3	11.9	26.1	12.9	30.9	15.3	106.6
Reg03	02/03	1048	1033	2081	50%	93%	1942	24.7	12.9	24.5	12.0	25.5	12.9	29.9	15.2	104.6
Reg04	02/03	1461	1398	2859	49%	101%	6090	24.4	13.2	26.2	12.7	26.3	12.7	30.5	14.7	107.4
Reg11	02/03	1610	1534	3144	49%											
Reg05	02/03	599	541	1140	47%	92%	1046	21.7	10.9	22.7	10.7	23.3	11.5	27.9	13.4	95.6
Reg06	02/03	1322	1291	2613	49%	92%	2414	21.6	11.4	22.1	11.1	23.1	11.9	27.4	14.4	94.1
Reg07	02/03	212	195	407	48%	101%	410	20.1	9.4	20.0	9.6	21.6	10.4	25.3	12.7	86.9
Reg08	02/03	80	70	150	47%	159%	239	11.7	8.6	12.3	9.2	14.5	10.6	16.1	11.8	54.6
Reg09	02/03	273	280	553	51%	82%	452	16.2	7.1	17.5	8.4	19.0	8.8	21.1	10.2	73.8
Reg10	02/03	374	416	790	53%	110%	871	24.5	11.1	25.6	10.9	26.5	11.1	31.6	13.3	108.0
TOTAL	02/03	7754	7600	15354	49%	97%	14858	21.6	13.2	22.6	13.0	23.3	13.3	27.2	15.7	94.7

Reg01	03/04	316	351	667	53%	76%	507	17.8	8.7	16.9	8.3	16.6	8.2	20.5	9.6	71.8
Reg02	03/04	582	561	1143	49%	101%	1154	24.9	14.1	22.0	11.6	24.0	13.6	27.7	14.8	98.6
Reg03	03/04	1162	1141	2303	50%	94%	2165	26.2	13.9	22.9	11.8	24.6	13.4	28.7	14.8	102.3

Reg04	03/04	1547	1587	3134	51%	102%	6668	26.1	14.0	24.3	12.9	25.5	13.7	28.9	14.8	104.8
Reg11	03/04	1776	1647	3423	48%											
Reg05	03/04	619	641	1260	51%	94%	1180	23.6	12.2	20.9	10.6	22.3	12.3	26.2	13.4	93.1
Reg06	03/04	1465	1381	2846	49%	93%	2639	22.3	12.4	20.1	11.1	20.8	12.4	24.5	13.8	87.7
Reg07	03/04	238	199	437	46%	99%	434	20.9	10.6	19.1	9.8	20.0	11.1	23.3	12.0	83.4
Reg08	03/04	125	102	227	45%	91%	206	14.8	6.9	14.2	7.9	14.1	6.5	17.3	8.8	60.3
Reg09	03/04	297	260	557	47%	95%	528	16.7	7.8	16.3	7.9	15.6	7.6	19.0	9.1	67.7
Reg10	03/04	344	395	739	53%	137%	1013	25.5	12.3	22.9	10.8	24.1	11.9	28.9	13.4	101.4
TOTAL	03/04	8471	8265	16736	49%	98%	16427	23.3	14.0	21.2	12.6	22.3	13.7	25.8	15.1	92.6

Reg01	04/05	331	342	673	51%	76%	512	20.8	9.8	19.7	10.2	17.3	8.6	20.4	9.9	78.1
Reg02	04/05	598	591	1189	50%	99%	1176	27.6	14.4	25.1	12.7	22.6	12.6	27.2	14.6	102.4
Reg03	04/05	1153	1141	2294	50%	98%	2243	28.0	14.4	26.0	12.9	23.3	12.5	28.0	14.5	105.3
Reg04	04/05	1668	1664	3332	50%	105%	7239	28.2	14.5	27.5	13.9	24.1	12.9	28.0	14.5	107.7
Reg11	04/05	1830	1756	3586	49%											
Reg05	04/05	680	711	1391	51%	93%	1294	26.1	13.2	24.2	12.5	21.1	11.3	25.5	13.3	96.8
Reg06	04/05	1506	1496	3002	50%	96%	2896	24.4	13.1	23.3	12.5	20.0	11.3	24.5	13.8	92.2
Reg07	04/05	212	197	409	48%	107%	439	24.3	10.4	22.5	11.1	19.6	10.1	23.8	10.8	90.0
Reg08	04/05	101	95	196	48%	119%	234	15.8	8.2	15.3	9.3	13.1	6.6	16.2	8.7	60.3
Reg09	04/05	319	292	611	48%	85%	519	20.7	10.2	19.3	9.8	16.6	8.6	21.0	10.0	77.5
Reg10	04/05	454	469	923	51%	113%	1042	28.7	13.1	27.0	12.5	24.2	11.9	29.1	13.4	108.9
TOTAL	04/05	8852	8754	17606	50%	100%	17594	26.7	13.9	25.4	13.2	22.3	12.3	26.6	14.1	100.9

Region	Year	GRADE 6			Fem%	SSEE		MATH		ENGLISH		SOCIAL SC		SCIENCE		MESS
		M6	F6	ENROL	Enrol	%G6	Entries	mean	stdev	mean	stdev	mean	stdev	mean	stdev	TOTAL
Reg01	05/06	389	347	736	47%	74%	541	16.7	7.2	17.2	7.9	15.1	7.5	19.4	9.4	68.4
Reg02	05/06	657	605	1262	48%	105%	1322	23.0	11.9	23.1	11.7	21.3	11.9	27.3	14.3	94.7
Reg03	05/06	1235	1184	2419	49%	101%	2445	23.2	12.2	23.1	11.9	21.3	12.1	27.1	14.3	94.8
Reg04	05/06	1834	1748	3582	49%	105%	7500	24.5	12.8	25.6	12.6	22.9	12.4	28.0	14.1	100.9
Reg11	05/06	1785	1767	3552	50%											
Reg05	05/06	692	669	1361	49%	95%	1297	21.5	11.0	21.1	10.9	19.4	10.9	24.8	13.3	86.8
Reg06	05/06	1614	1566	3180	49%	98%	3122	21.3	11.0	21.3	11.0	19.3	11.0	25.0	13.7	86.7
Reg07	05/06	260	215	475	45%	103%	490	18.0	8.4	19.1	10.4	16.6	9.1	20.7	11.1	74.3
Reg08	05/06	102	101	203	50%	111%	225	14.2	5.9	15.0	6.8	13.2	6.2	16.9	7.6	59.4
Reg09	05/06	271	293	564	52%	91%	516	16.4	7.2	18.9	9.1	15.6	7.5	21.0	9.9	71.9
Reg10	05/06	538	540	1078	50%	100%	1082	23.3	10.6	23.9	10.7	22.2	11.2	27.7	12.7	97.0
TOTAL	05/06	9377	9035	18412	49%	101%	18540	22.6	11.9	23.2	11.9	21.0	11.8	26.3	13.8	93.1

Reg01	06/07	0	0	0	0		675	15.9	6.6	14.1	6.3	18.1	8.2	16.9	7.5	65.0
Reg02	06/07	0	0	0	0		1167	23.3	12.0	19.1	10.4	24.3	12.4	23.0	11.9	89.7
Reg03	06/07	0	0	0	0		2212	23.9	12.5	19.6	10.4	24.7	12.9	23.6	12.7	91.8
Reg04	06/07	0	0	0	0		3353	22.6	12.2	19.2	10.2	23.9	12.5	22.2	12.1	87.9
Reg11	06/07	0	0	0	0		3658	27.9	13.5	25.1	12.2	30.5	13.6	28.3	13.5	111.9
Reg05	06/07	0	0	0	0		1231	23.0	11.4	18.2	9.4	23.4	12.0	22.2	11.3	86.8
Reg06	06/07	0	0	0	0		3044	21.3	11.8	17.6	10.0	21.9	12.4	21.1	12.1	81.8
Reg07	06/07	0	0	0	0		476	18.3	9.5	16.2	8.9	20.1	10.7	19.0	9.7	73.6
Reg08	06/07	0	0	0	0		221	14.7	6.4	13.8	7.1	18.8	9.3	16.5	8.2	63.8
Reg09	06/07	0	0	0	0		508	17.1	8.2	15.0	7.7	19.2	9.1	17.2	8.0	68.4
Reg10	06/07	0	0	0	0		989	22.9	11.1	20.1	10.4	25.6	12.4	24.2	12.2	92.8
TOTAL	06/07	0	0	0	0		18538	23.1	12.3	19.7	10.8	24.6	12.9	23.1	12.5	90.5

Source: NCERD Reports; enrollment from MOE Statistical Digests

no data

Reg04

includes Georgetown

Attachment E: Projected Demand and Supply of Teachers

- E1 The demand for secondary education can be summarized as follows:
- ③ **Demand** flowing from age-structure of the population, improved primary education participation, improved primary school learning outcomes, access issues in hinterland regions, improved transition from primary to secondary schools, and student placement/migration to Georgetown schools;
 - ③ **Demand** if CHS → GSS and Tops → GSS improve completion/transfers.
 - ③ **Demand** if secondary school attendance rates improve, and Grade 7 repetition is reduced. This may not increase aggregate demand, but will compete with new enrollments for available teachers and classroom places;
 - ③ **Demand**, estimate of new enrollments in private schools which potentially reduce demand for places in public secondary schools;
 - ③ **Demand**, clarifying links between secondary schools, Practical Training Centers, technical education and commercial/business colleges which potentially reduce demand for places in secondary schools.
- E2 **Tables E1 (A-C)** project national Grade 7 intake over the next five years, assuming a decline in population aged 12, from 19,600 in 2007 to 17,600 by 2011, a 0-2% impact of FTI initiatives in Hinterland Regions, Primary completion rates between 90-95%, primary-secondary transition rates of 93-95%, 0-2% impact from consolidation of Primary Tops, -1 to -3% drop out, 0-3% emigration, and 0-2% net transfer from public to private schools.
- E3 The baseline assumptions have approximately 80% of the Grade 7 cohort enrolled, with total intake (shaded cells) declining from 15,800 in 2007 to 14,200 in 2011/12.

Table E1(A) Baseline

GRADE7	Percent	2007	2008	2009	2010	2011	2012
Cohort	100	19600	19800	19500	19500	17600	17600
R1789	0%	19600	19800	19500	19500	17600	17600
PmyComp	91%	17836	18018	17745	17745	16016	16016
Pmy → Sec	93%	16587	16756	16502	16502	14894	14894
Tops → GSS	0%	16587	16756	16502	16502	14894	14894
Drop out	-2%	16255	16420	16171	16171	14596	14596
Emigration	-2%	15929	16091	15847	15847	14304	14304
Private?	-1%	15769	15930	15688	15688	14160	14160

- E4 Baseline assumptions are conservative – Grade 6/Grade 7 transfer Attachment D1 is 92%, there is no accurate measure of “drop-out”, and emigration may exceed 2% per annum. Better information about private schools will contribute to better planning for secondary education in Georgetown.
- E5 The high assumptions assume zero emigration and only 1% drop-out. These result in 18,600 enrolled in 2007, and 16,700 by 2011, which represents almost 93% of the cohort.

Table E1(B) High assumptions

GRADE7	Percent	2007	2008	2009	2010	2011	2012
Cohort	100	19600	19800	19500	19500	17600	17600
R1789	+2%	19992	20196	19890	19890	17952	17952
PmyComp	95%	18992	19186	18895	18895	17054	17054
Pmy → Sec	95%	18042	18226	17950	17950	16201	16201
Tops → GSS	2%	18403	18591	18309	18309	16525	16525
Drop out	-1%	18218	18404	18125	18125	16359	16359
Emigration	0%	18586	18776	18492	18492	16690	16690
Private	0%	18586	18776	18492	18492	16690	16690

E6 The low assumptions are lower than the baseline and account for 79% of the cohort, with higher drop out and emigration.

Table E1(C) Low assumptions

GRADE7	Percent	2007	2008	2009	2010	2011	2012
Cohort	100	19600	19800	19500	19500	17600	17600
R1789	+1%	19796	19998	19695	19695	17776	17776
PmyComp	90%	17816	17998	17725	17725	15998	15998
Pmy → Sec	93%	16568	16738	16484	16484	14878	14878
Tops → GSS	1%	16734	16905	16649	16649	15027	15027
Drop out	-3%	16231	16398	16149	16149	14575	14575
Emigration	-3%	15744	15906	15664	15664	14137	14137
Private	-2%	15429	15587	15350	15350	13854	13854

E7 Table E1(A)-(C) estimate Grade 7 enrollment, and separate assumptions are required about repetition and grade progression. Repetition inflates apparent transition from Grade 6 to Grade 7 (see 109% gross transition as Measure 6 in **Attachment D1**, reduced to 92.3% when repetition is excluded). Repetition complicates enrollment forecasts, but has much wider implications for educational effectiveness, for staffing required, and reduces the probability that students will reach Grade 11.

E8 **Table E2** repeats Table 2.8 in Chapter 2 and demonstrates divergent patterns of repetition. Students who repeated in 2003/04 are expressed as a percentage of 2004/05 enrollments to approximate repetition rates. The denominator should be 2003/04 enrollments, but similar patterns would be expected.

- ③ Almost 1-in-8 (11.6%) secondary students repeated, with males averaging 14.4% and females 8.8%, representing 2811 out of 18263 students in Grade 7.
- ③ Almost 1-in-5 (17.5%) of CHS students repeated (38% in Region 3; 20% in Region 11), and 226/910 CHS students in Grade 7 in Region 11.
- ③ One-in-six (14.9%) GSS students repeated, but half the GSS students in Region 8, and 43% of the 198 Grade 7 students in Region 8.

Table E2 Secondary Grade Repetition Rates by Region

2004/5	R01	R07	R08	R09	R02	R05	R06	R10	R03	R04	R011	TOTAL	R1789	R2560	R3411
%R07	0.20	0.03	0.43	0.12	0.09	0.09	0.10	0.15	0.18	0.08	0.24	0.15	17.6%	10.3%	18.3%
%R08	0.22	0.00	0.21	0.09	0.04	0.05	0.11	0.09	0.11	0.09	0.18	0.12	12.4%	8.0%	14.2%
%R09	0.16	0.01	0.04	0.16	0.03	0.05	0.12	0.07	0.11	0.10	0.17	0.12	10.7%	8.3%	13.9%
%R10	0.18	0.00	0.14	0.07	0.03	0.13	0.14	0.06	0.11	0.14	0.13	0.11	8.4%	9.9%	12.5%
%R11	0.06	0.02	0.00	0.04	0.00	0.01	0.04	0.00	0.03	0.01	0.01	0.02	3.1%	1.9%	1.5%
Female	0.17	0.01	0.18	0.09	0.03	0.06	0.08	0.05	0.09	0.07	0.12	8.8%	10.4%	6.3%	10.2%
Male	0.21	0.02	0.31	0.13	0.05	0.08	0.13	0.12	0.16	0.11	0.21	14.4%	14.9%	10.4%	17.0%
PTOP	0.22	0.03	0.16	0.10	0.11	0.03	0.01	0.02	0.00	0.03	0.00	6.8%	14.4%	3.9%	1.8%
CHS									0.38	0.07	0.20	17.5%			20.4%
GSS	0.23	0.01	0.51	0.13	0.06	0.09	0.12	0.15	0.07	0.16	0.22	14.9%	17.3%	11.0%	17.8%

Source: MOE Education Digest 2004/05

E9 **Projected Enrollments:** Tables E3(A)-(C) take the projected Grade 7 enrollments in the baseline, high and low assumptions in Tables 2.11(A)-(C). Constant grade progression is assumed to illustrate the impact through to Grade 11. Different rates could be included in the models. The total secondary enrollment would decline to around 61,500 by 2012 (baseline). Two columns are added to each projection – the Grade11/Grade7 ratio approximates Measure 13 in Attachment D1, with approximately 74% survival to Grade 11 by 2012. This is not the 75% USE objective, because Grade 11/Grade 6 graduates would be only 65%.

Table E3A Baseline Projection assuming 90% grade progression

0.90	Grade7	Grade8	Grade9	Grade10	Grade11	TOTAL	G11/G7	G11/G6Z
2007	15769	14192	12773	11496	10346	64,576	65.6%	58.0%
2008	15930	14192	12773	11496	10346	64,737	64.9%	57.4%
2009	15688	14337	12773	11496	10346	64,640	65.9%	58.3%
2010	15688	14119	12903	11496	10346	64,552	65.9%	58.3%
2011	14160	14119	12707	11613	10346	62,945	73.1%	64.6%
2012	14160	12744	12707	11437	10452	61,500	73.8%	65.3%

Table E3B High Projection assuming 93% grade progression

0.93	Grade7	Grade8	Grade9	Grade10	Grade11	TOTAL	G11/G7	G11/G6Z
2007	18992	17663	16426	15276	14207	82,564	74.8%	74.8%
2008	19186	17663	16426	15276	14207	82,758	74.0%	74.0%
2009	18895	17843	16426	15276	14207	82,648	75.2%	75.2%
2010	18895	17572	16594	15276	14207	82,545	75.2%	75.2%
2011	17054	17572	16342	15432	14207	80,608	83.3%	83.3%
2012	17054	15860	16342	15198	14352	78,807	84.2%	84.2%

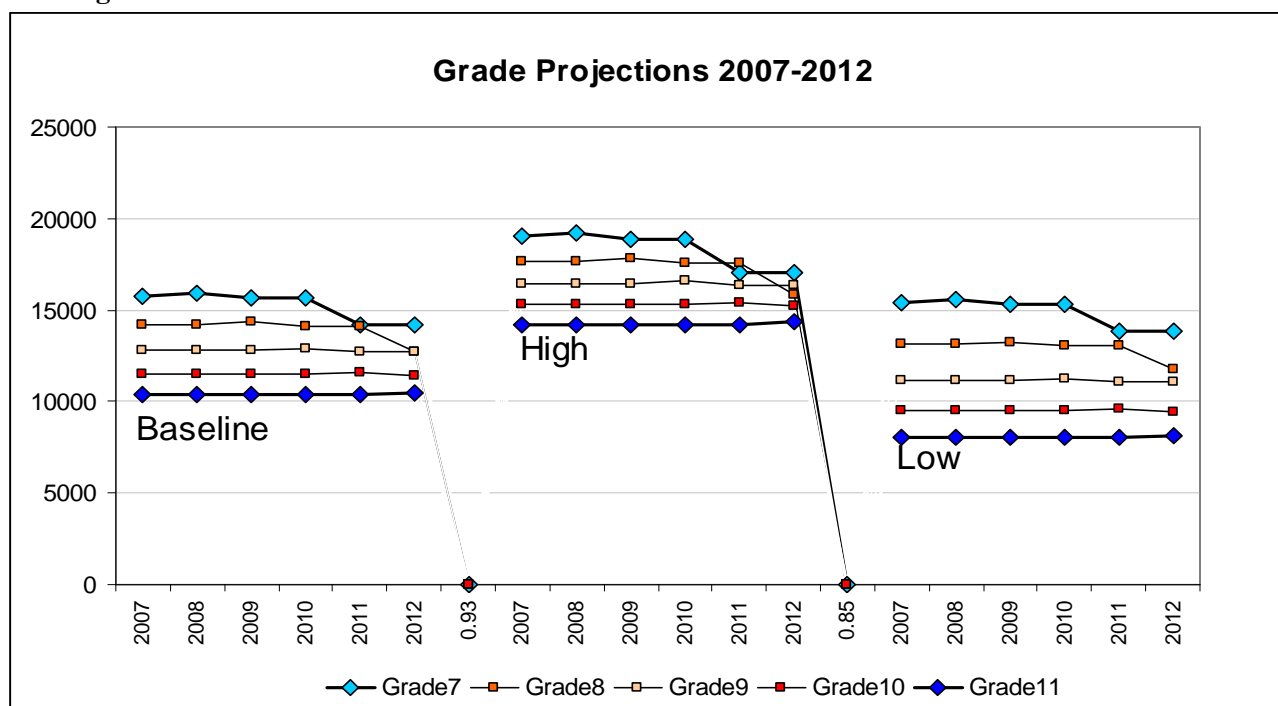
E10 These projections assume reduced repetition but higher grade progression rates. **Table E3B** is close to the level required to achieve USE, with “repeating” students in existing enrollments being replaced by successful progression to the next grade, and all students in public secondary schools. This is not a USE planning target. **Table EC** is the low projection scenario, with approximately 15% attrition each year. The Grade 7 intakes assume 3% emigration per annum and 2% enrollment in private schools.

Table E3C Low Projection assuming 85% grade progression

0.85	Grade7	Grade8	Grade9	Grade10	Grade11	TOTAL	G11/G7	G11/G6Z
2007	15429	13115	11147	9475	8054	57,220	52.2%	45.2%
2008	15587	13115	11147	9475	8054	57,378	51.7%	44.7%
2009	15350	13249	11147	9475	8054	57,276	52.5%	45.4%
2010	15350	13048	11262	9475	8054	57,188	52.5%	45.4%
2011	13854	13048	11090	9572	8054	55,618	58.1%	50.3%
2012	13854	11776	11090	9427	8137	54,284	58.7%	50.9%

E11 These three projections are summarized in Figure E1. Under the baseline assumptions, Grade 7 intakes are stable around 15,000 per annum with Grade 11 enrollment around 10,000. The high scenario assumes significant improvement in the number and quality of Grade 6 graduates, leading to both reduced repetition and higher grade progression rates. The low scenario has the same starting point as the baseline, but more pessimistic assumptions about students completing Grade 11.

Figure E1



E12 USE 2008-2012 projections could build in assumptions about repetition ranging from 8-12% but this would be a strategic error for Ministry planning. **USE strategic planning should examine ways to reduce repetition to less than 5%**, saving student places, making better use of available trained teachers, and increasing the chances of more students completing secondary schooling to Grade 11. As discussed in the Overview and Chapter 1, secondary repetition should be rare if most students complete primary grades with the necessary language and math competencies. Upgrading qualifications and skills of existing teachers (Chapter 3) are thus an important step towards achieving competencies and reducing repetition.

Teacher Supply and Demand

E13 Six elements were considered in estimating the supply of and demand for teachers.

- (1) **Projected student enrollments** identified as a range of projected Grade 7 enrollments (Tables E1A-E1C), assumptions about Grade repetition (Table E2) and projected enrollments ranging from as low as 55,000 (Table E3C) to in excess of 80,000 (Table E3B). *There is no most likely projection* but 70,000-75,000 would be a prudent planning range. Improved access and participation flowing from Fast Track Initiative activities in Hinterland regions, absorbing Primary Tops into the new Diamond GSS (Region 4), and conversion of CHS to GSS suggest higher enrollment, but there could be offset effects if repetition rates are reduced.
- (2) **Teacher Attrition/Loss rates:** Chapter 3 examined 2004/05 teacher attrition. The apparent attrition rate of one percent may not be typical, and analysis of several years data is recommended.

Table E4A Positive Attrition Assumptions

Table E4A assumes uniform 5% loss per annum, 100 current teachers certified as “trained” annually and 125 new teachers are recruited. Most new teachers are “trained”.

The result is a net loss of 47 teachers (1.4%) per annum.

<i>POSITIVE</i>	5% loss	Trained	Recruit	Gain/Loss
Graduate	-16	20	20	24
Qualified	-74	80	80	86
TRAINED	-92	100	100	108
Graduate	-9	-20	5	-24
Qualified	-56	-60	20	-96
UnQualified	-10	-20	0	-30
UNTRAINED	-80	-100	25	-155
TEACHERS	-172	0	125	-47

<i>NEGATIVE</i>	10% loss	Trained	Recruit	Gain/Loss
Graduate	-31	10	10	-11
Qualified	-148	40	40	-68
TRAINED	-184	50	50	-84
Graduate	-17	-10	10	-17
Qualified	-111	-30	20	-121
UnQualified	-19	-10	0	-29
UNTRAINED	-159	-50	30	-179
TEACHERS	-344	0	80	-264

Table E4B Negative Attrition:

A more pessimistic scenario assumes 10% attrition per annum, few existing teachers are certified as “trained” and that fewer new teachers are recruited annually.

Net attrition of 264 teachers or 7.8% per annum is the result. “Untrained” teachers are still lost at a greater rate.

Variations of these two models can be tested.

- (3) **Retraining of untrained teachers** has been recommended as a critical USE strategy to improve the quality of teaching (in primary as well as secondary schools) so that student learning outcomes are improved. It is assumed that Guyana adopts a program which gives “untrained” classroom teachers credit for in-service professional development, summer schools, and external courses provided through CPCE or the University of Guyana. By definition, the increase in “trained teachers” is offset by a reduction in the number of “untrained teachers”.
- (4) **Recruitment of trained teachers** is another USE strategy to improve quality by reducing the numbers of untrained secondary teachers in the system. The first model

assumes that 80% of new recruits are trained and qualified teachers, and the second model assumes 62.5% (50/80) are trained and qualified. Both models allow limited recruitment of untrained teachers – to accommodate situations where no trained teachers are available.

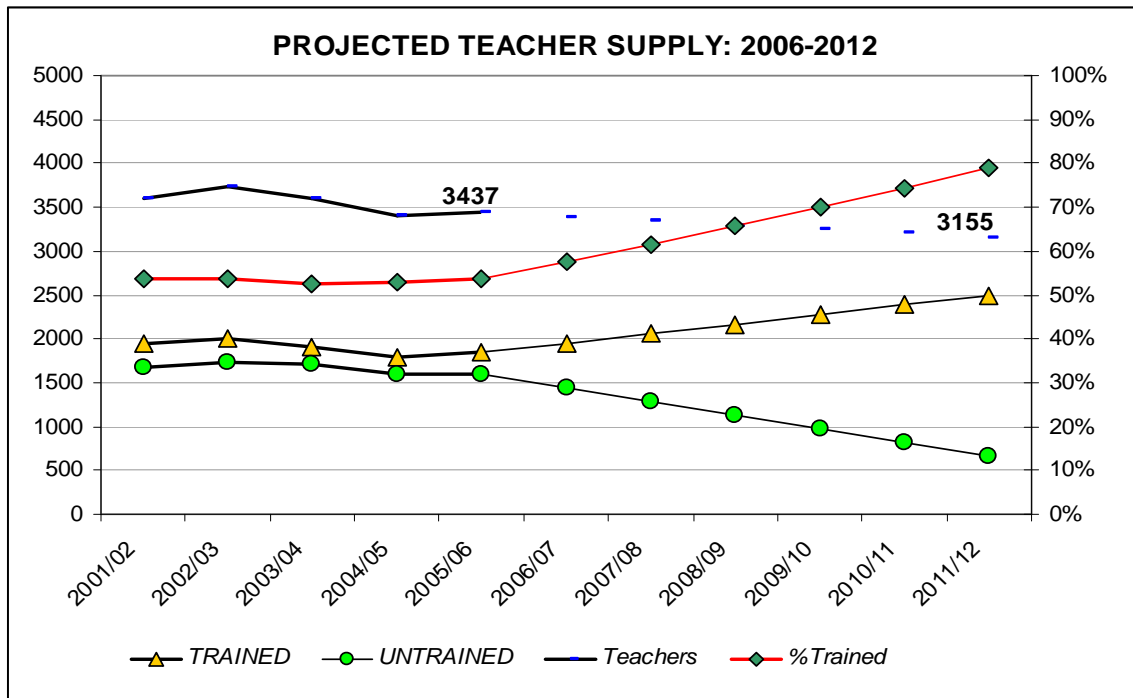
- (5) **Table E5A** shows the combined effect of the above attrition and recruitment assumptions on provision of around 3,200 teachers, with a dramatic increase in the proportion of trained teachers from a current level around 55% to almost 80% by 2011/12 (see **Figure E2**).

Table E5A: Projected Impact of Positive/Low Attrition Assumptions

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Graduate Qualified				353	312	336	360	384	408	432	456
Graduate UnQualified				1435	1484	1570	1656	1742	1828	1914	2000
TRAINED	1937	2001	1898	1790	1844	1952	2060	2168	2276	2384	2492
Graduate UnQualified				152	174	150	126	102	78	54	30
UNTRAINED	1671	1727	1703	1605	1593	1438	1283	1128	973	818	663
Teachers	3608	3728	3601	3395	3437	3390	3343	3296	3249	3202	3155
%Trained	53.7%	53.7%	52.7%	52.7%	53.7%	57.6%	61.6%	65.8%	70.1%	74.5%	79.0%

Source: MOE data 2000/01-2005/06 (discrepancy). Tchr_Supply.XLS

Figure E2



Source: Tchr_Supply.XLS

- (6) **Table E5B** shows the impact of Negative/high attrition assumptions in Table E4B. The percentage “trained” continues to increase – because the untrained teachers are lost at a greater rate. This may be unrealistic.

Table E5B: Projected Impact of Negative/High Attrition Assumptions

	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Graduate Qualified	312 1484	301 1416	290 1348	279 1280	268 1212	257 1144	246 1076
TRAINED	1844	1760	1676	1592	1508	1424	1340
Graduate UnQualified	174 1113 194	157 992 165	140 871 136	123 750 107	106 629 78	89 508 49	72 387 20
UNTRAINED	1593	1414	1235	1056	877	698	519
Teachers	3437	3173	2909	2645	2381	2117	1853
%Trained	53.7%	55.5%	57.6%	60.2%	63.3%	67.3%	72.3%

Source: MOE data 2000/01-2005/06 (discrepancy). Tchr_Supply.XLS

- (7) **Staffing allocation formulae:** Just as high student repetition rates can affect demand for teachers, how efficiently teachers are used has a large effect on the demand. Improving staffing efficiency through more students in GSS allowing larger average class size and improved student/teacher ratios is both a better educational objective of USE and more efficient use of available trained staff. **Table E6** shows how the existing supply of about 3,400 teachers could serve a wide range of student enrollments – by improving STR rather than employing more teachers.

Table E6

Teachers required at given STR					
STR >	20	23	25	27	30
Students	<i>current</i>	→			<i>unlikely</i>
60,000	3,000	2,609	2,400	2,222	2,000
65,000	3,250	2,826	2,600	2,407	2,167
70,000	3,500	3,043	2,800	2,593	2,333
75,000	3,750	3,261	3,000	2,778	2,500
80,000	4,000	3,478	3,200	2,963	2,667
85,000	4,250	3,696	3,400	3,148	2,833

nnn (shaded cell) represents approximate teacher supply

Source: Tchr_Supply.XLS

- (8) The **strategic recommendation for USE** would be meet any increased enrollment in Chapter 2 by improving STRs. Any short term costs in training “untrained” teachers (through an in-service rather than pre-service or full-time training model) should be offset by improved student and teacher attendance and a larger effective class size. USE strategies to upgrade CHS (with appropriate qualified staffing) and convert Primary Tops to GSS (where feasible) should lead to more efficient use of existing teachers.
- (9) **Expected mix of school types:** The success of current USE strategies also affects mean school size. Note that in **Table E7** that most CHS are converted to GSS and a large number of Primary Tops persist (but their mean size increases from 43 to 60 students, with specialist teaching staff).

Table E7

Schools required at Mean Enrollment					
Mean Size	198	229	255	288	336
Students	<i>current</i>	→			<i>unlikely</i>
60,000	303	262	235	208	179
65,000	328	284	255	226	193
70,000	354	306	275	243	208
75,000	379	328	294	260	223
80,000	404	349	314	278	238
85,000	429	371	333	295	253
TYPE	Changing School Type Mix				
PmyTops	232	200	180	160	140
CHS	24	20	15	10	5
GSS	82	90	95	100	105
TOTAL	338	310	290	270	250

N (shaded cell) approximates the number of secondary schools in bottom of table.

Source: Tchr_Supply.xls

E14 Managing existing and future staffing is shown in Chapter 3 to be central to achieving USE objectives. In Chapter 4 it is also central to better learning outcomes.

Attachment F: Teachers by Status and by Region

Table F1: Secondary Teachers 2005/06 by Status and by Region

Status Master=Mistress	mean AGE	Teachers	01	02	03	04	05	06	07	08	09	10	11
Headmaster	49	119	7	9	17	16	7	10	3	3	14	10	23
Deputy Headmaster	49	67		4	8	10	9	13				5	18
Head of Department	40	401	3	49	53	41	26	67	3	1	4	34	120
Senior Master	42	210	2	17	20	27	16	33	5	1	1	13	75
Senior Assistant Master	40	76	1	7	14	12	6	7				9	20
Assistant Master	29	916	33	86	103	123	63	128	36	4	14	107	219
Teacher Aide (trained)	42	1				1							
Temp. Qualified Master	22	1				1							
Temp. Assistant Master	53	15	1			1	1						12
Assistant Master	32	1					1						
Head of Department (a)	34	3											3
Temp. Assistant Master	43	3											3
Temp. Qualified Master	26	578	11	28	68	65	49	106	1	2	12	34	202
Untrained Graduate	33	149	1	3	9	14	3	18			1	10	90
Temp. Unqualified Master	26	301	14	22	33	44	22	52		2	12	24	76
Acting Teacher	33	331	15	23	30	53	34	12	10	12	23	41	78
Part Time Teacher	44	10		2							2		6
Junior Teacher	26	7											7
Pupil Teacher	19	79	3	3	10	6	13	26	5	2	7	1	3
Teacher Aide	35	28	13							12			3
Teacher-in-charge	28	1											1
Secondary Teachers		3297	104	253	365	414	250	472	63	39	90	288	959
Trained (A1-B3)		1806	47	172	215	232	128	258	47	9	33	178	487
Untrained (B4-C3)		1491	57	81	150	182	122	214	16	30	57	110	472
Percentage trained		54.8%	45%	68%	59%	56%	51%	55%	75%	23%	37%	62%	51%

Source: MOE statistical data for 3297 Secondary teachers in 2005/06. (STeach_StatusRegion_b.sql) (Teachers.XLS)
Data for 3,297 teachers is 140 fewer than the 3,437 in the draft 2005/06 Statistical Digest.

TABLE F2: Teacher Data by Age, Region, School Type and Main Teaching Subject

Region	Prof Status	Mean Age	Number; percentage		Number of Teachers by Age in 5-year groups										
					ns	16	21	26	31	36	41	46	51	56	61+
1789	MBD	41	10	3%				1	3		3	1	2		
1789	TTC	33	126	43%	9	1	26	26	15	11	8	15	14	1	
1789	UNO	20	82	28%	14	35	16	8	2	3	2	2			
1789	Unt	31	78	26%	3	3	25	14	8	10	5	4	4	2	
2560	MBD	34	60	5%	10			9	10	5	5	14	4	2	1
2560	TTC	32	676	54%	53	7	108	155	111	55	52	76	53	4	2
2560	UNO	23	453	36%	40	114	159	75	22	5	12	13	10	2	1
2560	Unt	30	74	6%	4		18	24	8	6	7	4	3		
3411	MBD	41	150	9%	7			12	21	20	23	35	26	4	2
3411	TTC	33	784	45%	43	7	122	210	110	53	72	79	77	7	4
3411	UNO	26	733	42%	67	82	242	153	73	36	23	22	25	6	4
3411	Unt	34	71	4%			8	25	13	9	6	5	2	1	2
			3297		250	249	724	712	396	213	218	270	220	29	16
TYPE															
CH	MBD	44	35	7%	1			2	3	2	6	11	7	2	1
CH	TTC	35	192	41%	6	1	29	47	24	14	17	26	24	3	1
CH	UNO	26	199	43%	14	18	86	37	17	6	3	3	11	2	2
CH	Unt	33	42	9%	2		4	15	6	5	3	4	1		2
PR	MBD	42	6	1%				1	1		2	1	1		
PR	TTC	38	192	42%	8		9	32	35	14	25	35	30	2	2
PR	UNO	24	157	34%	17	38	50	25	7	4	7	6	1	1	1
PR	Unt	30	101	22%	4	3	26	27	14	12	6	5	3	1	
SE	MBD	38	179	8%	16			19	30	23	23	38	24	4	2
SE	TTC	31	1202	51%	91	14	218	312	177	91	90	109	90	7	3
SE	UNO	25	912	38%	90	175	281	174	73	34	27	28	23	5	2
SE	Unt	33	80	3%	1		21	21	9	8	9	4	5	2	
			3297		250	249	724	712	396	213	218	270	220	29	16
Subject															
12ENG	MBD	43	44	9%	2			2	5	5	6	14	8	2	
12ENG	TTC	34	261	56%	12	4	45	61	28	23	29	23	32	2	2
12ENG	UNO	24	149	32%	10	36	56	20	9	6	2	3	7		
12ENG	Unt	37	10	2%			2	1	1	2	2	1	1		
12MATH	MBD	44	29	7%				3	4		7	8	5	2	
12MATH	TTC	34	228	55%	10	1	38	63	32	18	15	23	26	2	
12MATH	UNO	25	146	35%	8	32	48	26	17	5	5	3	2		
12MATH	Unt	27	9	2%			4	3	2						
3Subjects	MBD	38	96	7%	8			13	15	15	14	15	14		2
3Subjects	TTC	33	697	51%	37	7	111	180	116	52	59	80	50	5	
3Subjects	UNO	27	509	37%	32	83	157	111	39	14	23	22	19	5	4
3Subjects	Unt	32	75	5%	1		18	25	10	7	7	3	3		1
8Other	MBD	37	51	5%	7			4	10	5	4	13	5	2	1
8Other	TTC	31	400	38%	46	3	62	87	60	26	29	44	36	3	4
8Other	UNO	22	464	44%	71	80	156	79	32	19	7	9	7	3	1
8Other	Unt	32	129	12%	6	3	27	34	16	16	9	9	5	3	1
			3297		250	249	724	712	396	213	218	270	220	29	16

Source: MOE Statistics (Tch56_x005.xls)

TABLE F3: Teacher Flows Data by School Type and Gender

	Type Gender	1PTop F	1PTop M	2CHS F	2CHS M	3GSS F	3GSS M	TOTAL
	Schools	121		12		41		174
TGT	Trained Graduate	11	4	35	7	182	73	312
TGU	Graduate untrained	1	2	7	2	103	59	174
TQT	Trained Qualified	123	77	136	43	774	331	1484
TQU	Qualified untrained	93	66	138	52	484	280	1113
TUN	Unqualified Teacher	61	34	36	4	42	17	194
Teachers 2005		289	183	353	108	1585	760	3278
TGrad	Grad New/Re-employed	1	0	0	0	2	1	4
	Grad Transfer (in)	7	4	8	1	32	7	59
TQual	Qual New/Re-employed	2	0	1	0	9	3	15
	Qual Transfer (in)	26	11	16	1	66	35	155
TUN	Untrained Teachers	41	24	13	10	131	73	292
Teacher INFLOW		77	39	38	12	240	119	525
TGrad	Losses	0	0	0	0	5	2	7
	Transfer (or not stated)	2	2	3	2	39	12	60
TQual	Losses	0	3	2	0	8	13	26
	Transfer (or not stated)	10	18	13	13	100	44	198
TUN	Untrained Teachers	32	15	20	9	90	89	255
Teacher OUTFLOW		44	38	38	24	242	160	546
Teachers 2004		236	173	353	120	1567	788	3237
Net Change Graduates		6	2	5	-1	-10	-6	-4
Net Change Qualified Teachers		18	-10	2	-12	-33	-19	-54
Net Change Unqualified		9	9	-7	1	41	-16	37
Net Change 2004/2005		33	1	0	-12	-2	-41	-21

TCH05_003TRF.sql

Caution: data covers only 174 schools (41/84 GSS)

TABLE F4: Teacher Flows Data by Region (Zone) and School Type

ZONE Type	R1789			R2560			R3411			Guyana 2005/06
	1PTop	2CHS	3GSS	1PTop	2CHS	3GSS	1PTop	2CHS	3GSS	
Schools	114	1	9	75	5	32	53	18	41	348
Mean Enrol	29	287	394	47	254	647	61	418	569	
Grad/Trained	2	0	9	3	2	90	10	40	156	312
Grad/Untrain	1	1	1	0	0	40	2	8	121	174
Qual/Trained	47	2	76	78	37	518	75	140	511	1484
Qual/Untrain	32	1	46	69	27	322	58	162	396	1113
Unqualified	62	0	14	22	5	28	11	35	17	194
Males 2005/06	84	2	67	52	26	334	47	80	359	1051
Females 05/06	60	2	79	120	46	664	109	305	842	2227
NewGradTrain	0	0	0	0	0	0	1	0	2	3
NewGradUnt	0	0	0	0	0	9	2	1	4	16
NewQualTrain	1	0	0	0	0	6	1	1	6	15
NewQualUnt	3	16	9	5	63	6	5	40	147	147
NewUnqualified	5	1	0	0	0	0	2	0	0	8

RempGradTrain	0	0	0	0	1	0	0	0	1	
RempGrad/Unt	0	0	0	0	1	0	0	0	1	
RempQualTrain	0	0	0	0	0	0	0	0	0	
RempQual/Unt	0	0	0	0	0	0	0	0	0	
RempUnqualified	0	0	0	0	0	0	0	0	0	
TransferGradT	2	1	3	1	14	6	8	24	59	
TransfGrad/Unt	0	0	0	0	2	0	3	9	14	
TransfQualTrain	6	5	10	2	43	21	15	53	155	
TransfQual/Unt	6	1	5	1	10	16	7	48	94	
Transf/Unqualif	8	0	3	0	0	0	1	0	12	
Inflow Males	12	0	10	7	4	56	20	8	53	170
Inflow Females	19	0	14	23	5	93	35	33	133	355
ResignGradTrain	0	0	0	0	3	0	0	1	4	
ResignGrad/Unt	0	0	0	0	1	1	0	1	3	
ResignQualTrain	0	0	0	1	10	0	0	2	13	
ResignQual/Unt	0	0	0	2	22	0	1	11	36	
ResignUnqual	0	0	1	0	2	0	0	0	3	
RetireGradTrain	0	0	0	0	0	0	0	3	3	
RetireGrad/Unt	0	0	0	0	0	0	0	0	0	
RetireQualTrain	1	0	0	1	7	1	0	1	11	
RetireQual/Unt	0	0	0	1	0	0	0	1	2	
RetireUnqualif	0	0	0	0	0	0	0	0	0	
DismGradTrain	0	0	0	0	0	0	0	0	0	
DismGrad/Unt	0	0	0	0	0	0	0	0	0	
DismQualTrain	0	1	1	0	0	0	0	0	2	
DismQual/Unt	0	1	0	0	1	0	0	0	2	
DismUnqualified	0	1	0	0	0	0	0	0	1	
TransfGradTrain	0	0	0	0	4	0	1	4	9	
TransfGrad/Unt	0	0	0	0	1	0	0	1	2	
TransfQualTrain	2	5	5	0	25	3	4	7	51	
TransfQual/Unt	3	0	5	0	14	1	2	1	26	
Transf/Unqualif	6	1	1	0	3	0	0	0	11	
OtherGradTrain	0	0	0	1	10	4	3	33	51	
OtherGrad/Unt	0	0	0	1	5	0	1	13	20	
OtherQualTrain	9	5	2	4	44	7	18	58	147	
OtherQual/Unt	7	6	1	3	36	5	10	38	106	
OtherUnqualified	11	3	2	0	6	3	8	10	43	
Losses Males	24	0	11	7	7	83	7	17	66	222
Losses Females	15	0	12	11	7	111	18	31	119	324
Males 2005/06	83	2	67	44	26	320	47	80	360	1029
Females 05/06	61	2	79	99	46	645	109	305	841	2187
Males 2004/05	95	2	68	44	29	347	34	89	373	1081
Females 04/05	57	2	77	87	48	663	92	303	827	2156

Source: MOE data (GY0506S_2008Zone.sql)

Attachment G: Education Finance

G1A: GUYANA EDUCATION BUDGET: BY REGION AND BY LINE ITEM. 2005, 2006, and Budget 2007 G\$000

Line Item	Region 01	Region 02	Region 03	Region 04	Region 05	Region 06	Region 07	Region 08	Region 09	Region 10	Region 11	Year 2005 G\$000
6111	36,517	106,305	239,444	198,262	112,242	93,532	24,007	8,748	33,160	143,704	266,043	1,261,964
6112	35,935	179,375	228,378	351,289	157,432	365,601	68,915	9,481	38,910	184,811	689,335	2,309,462
6113	1,132	49,173	103,847	145,889	70,359	149,950	19,159	6,872	25,484	75,379	205,477	852,721
6114	582	4,620	3,045	2,911	1,523	5,155	326	608	1,310	3,586	26,863	50,529
6115	87,126	26,728	78,559	80,698	49,832	76,287	30,331	20,313	52,080	52,750	101,697	656,401
6116	0	681	0	0	0	0	0	1,016	0	0	3,918	5,615
6117	655	35,519	0	0	0	0	0	0	120	276	40,454	77,024
6131	1,749	9,793	6,914	11,914	2,708	11,353	2,785	861	2,490	4,000	28,324	82,891
6132	0	0	0	0	0	0	0	0	0	0	0	0
6133	29,043	17,738	15,399	14,420	6,284	14,430	18,719	8,459	23,450	59,121	22,705	229,768
6134	12,060	28,770	48,866	62,403	30,205	53,973	10,928	3,521	11,520	33,288	99,059	394,593
6221	1,350	1,625	968	991	211	641	484	105	320	750	962	8,407
6222	8,000	8,505	5,307	15,934	4,880	6,704	5,360	1,600	3,518	16,400	35,902	112,110
6223	5,973	7,874	4,597	4,596	1,182	4,010	3,705	671	1,986	6,000	10,771	51,365
6224	5,900	6,785	5,596	6,084	3,265	5,607	3,000	980	1,828	4,300	17,446	60,791
6231	13,575	1,604	269	839	418	213	13,089	900	5,090	1,825	1,274	39,096
6241	700	0	204	2,255	120	1,536	300	0	0	780	5,588	11,483
6242	17,000	7,584	21,504	29,642	22,206	17,298	15,198	12,440	14,700	32,350	129,247	319,169
6243	2,200	750	725	1,369	2,258	1,709	529	272	729	3,404	7,499	21,444
6252	500	0	27	4,916	0	0	0	0	0	0	0	5,443
6255	1,600	2,600	10,067	7,632	1,500	2,025	9,039	5,170	3,790	13,200	39,878	96,501
6261	9,865	3,117	4,292	2,310	946	2,191	2,783	1,400	3,473	1,900	4,712	36,989
6262	0	0	0	0	0	0	0	0	0	0	0	0
6263	100	20	15	0	2	0	0	80	182	0	99	498
6264	2,124	190	392	113	497	348	569	0	1,097	1,349	2,090	8,769
6265	8,182	100	0	858	62	158	7,877	4,125	770	1,000	0	23,132
6271	360	1,399	509	711	233	700	755	0	220	950	3,344	9,181
6272	0	12,499	6,970	8,200	4,785	23,000	4,984	60	1,624	1,680	40,939	104,741
6273	0	2,274	4,010	2,087	1,383	2,500	209	0	0	1,666	12,311	26,440
6281	12,858	27,858	38,941	106,833	5,252	77,986	6,429	852	1,135	50,038	121,478	449,660
6282	200	239	1,006	189	264	890	297	490	318	1,000	6,152	11,045
6283	396	350	1,894	5,411	1,173	555	263	0	135	2,671	13,190	26,038
6284	1,544	1,470	5,408	3,983	4,728	6,157	5,539	300	1,290	2,240	4,401	37,060
6291	5,426	1,300	2,526	2,796	2,187	2,055	2,885	920	1,050	2,400	6,025	29,570

6292	14,407	8,819	0	50	0	0	40,302	18,500	9,452	3,817	889	96,236
6293	544	598	1,730	1,971	618	35	610	275	220	1,125	637	8,363
6294	145	60	309	3,466	378	43	448	0	50	2,322	88	7,309
6301	0	0	0	0	0	0	0	0	0	0	964,708	964,708
6302	3,323	3,250	1,536	0	1,762	2,800	1,202	1,000	350	1,300	17,180	33,703
6321	0	0	0	486	0	0	0	0	0	0	0	486
6322	0	0	0	0	0	0	0	0	0	0	0	0
Total	321,071	559,572	843,254	1,081,508	490,895	929,442	301,026	110,019	241,851	711,382	2,930,685	8,520,705

Source: BUDGET567.xls. Line item 6301 is subvention to Presidents College (Region 4) and Queens College (Region 11/Georgetown); Discrepancy in Region 2 ignored.

G1B: GUYANA EDUCATION BUDGET: BY REGION AND BY LINE ITEM, 2006, G\$000

Line Item	Region 01	Region 02	Region 03	Region 04	Region 05	Region 06	Region 07	Region 08	Region 09	Region 10	Region 11	2006 outcome G\$000
6111	40,760	127,789	253,992	222,542	130,382	114,246	27,541	14,101	38,199	172,218	307,156	1,448,926
6112	44,235	199,280	250,779	388,028	165,780	379,956	77,541	5,952	46,802	197,938	724,792	2,481,083
6113	771	43,107	113,479	160,439	80,045	183,483	22,778	9,405	39,915	60,438	182,420	896,280
6114	654	4,778	3,082	2,707	1,436	4,354	341	654	1,882	3,550	27,742	51,180
6115	94,755	46,670	73,619	82,737	49,751	76,828	31,289	22,780	40,609	51,179	106,606	676,823
6116	0	0	0	0	0	1,936	0	974	0	867	7,158	10,935
6117	730	0	0	0	0	0	0	0	20	338	51,184	52,272
6131	2,591	4,015	9,908	7,855	3,299	9,610	1,589	403	2,412	3,740	20,400	65,822
6132	0	0	0	0	0	0	0	0	0	0	0	0
6133	32,368	18,537	14,305	21,241	10,640	14,527	24,730	7,983	32,327	56,383	24,263	257,304
6134	13,557	31,489	51,924	68,434	31,965	58,297	12,077	4,237	12,203	35,442	102,115	421,740
6221	1,370	1,705	1,019	50	220	673	518	180	350	773	1,103	7,961
6222	8,600	8,529	5,949	14,907	5,506	7,498	5,608	1,999	2,800	16,450	41,545	119,391
6223	6,500	7,969	6,058	1,530	1,241	5,000	3,830	700	2,083	5,971	11,492	52,374
6224	6,050	6,900	6,098	5,099	3,427	5,999	3,200	1,479	1,649	4,386	22,600	66,887
6231	12,700	1,883	330	1,950	350	510	14,897	2,550	5,800	1,463	1,500	43,933
6241	770	0	1,247	2,095	120	1,999	360	0	0	461	6,500	13,552
6242	17,700	19,199	33,647	41,497	29,316	42,238	19,299	14,000	20,100	35,000	153,441	425,437
6243	2,275	788	749	973	2,370	1,849	629	400	765	2,868	8,492	22,158
6252	600	0	237	2,873	0	0	0	0	0	0	0	3,710
6255	1,680	3,140	11,512	8,124	1,649	5,900	9,413	4,848	3,900	7,736	18,000	75,902
6261	8,336	3,272	4,251	3,104	965	2,299	3,338	1,629	3,850	2,114	3,479	36,637
6262	0	0	0	0	0	0	0	0	0	0	0	0
6263	105	21	20	0	29	0	0	100	210	0	134	619
6264	1,910	199	515	161	873	400	500	0	1,340	1,400	3,600	10,898

6265	3,270	105	0	855	66	180	6,324	4,460	825	1,499	0	17,584
6271	451	1,470	700	750	347	900	740	0	250	760	4,099	10,467
6272	0	13,124	8,059	8,300	5,024	30,346	6,900	0	1,350	1,680	43,000	117,783
6273	0	2,389	4,500	2,898	2,194	3,680	410	0	0	1,522	23,100	40,693
6281	14,759	29,437	49,494	122,730	5,645	85,135	7,379	975	1,235	49,597	127,077	493,463
6282	225	252	1,224	467	275	945	548	340	375	1,080	11,049	16,780
6283	267	368	2,148	4,015	1,793	625	851	0	100	1,836	13,648	25,651
6284	478	15,528	7,315	13,887	16,344	25,773	5,355	1,082	5,250	8,966	5,763	105,741
6291	3,450	1,364	4,039	3,234	3,096	4,197	2,645	920	1,100	2,520	9,698	36,263
6292	11,300	9,545	0	0	3,551	97	41,408	18,911	11,080	9,225	970	106,087
6293	575	627	1,422	2,460	653	58	580	285	230	925	698	8,513
6294	150	63	79	3,791	397	200	175	0	52	2,024	1,113	8,044
6301	0	0	0	0	0	0	0	0	0	0	999,746	999,746
6302	2,904	3,112	1,278	0	1,848	3,117	1,590	1,010	490	1,251	15,736	32,336
6321	0	0	0	345	0	0	0	0	0	0	0	345
6322	0	0	0	0	0	0	0	0	0	0	0	0
Total	336,846	606,654	922,978	1,200,078	560,597	1,072,855	334,383	122,357	279,553	743,600	3,081,419	9,261,320

G1C: GUYANA EDUCATION BUDGET: BY REGION AND BY LINE ITEM, 2007 BUDGET, G\$000

Line Item	Region 01	Region 02	Region 03	Region 04	Region 05	Region 06	Region 07	Region 08	Region 09	Region 10	Region 11	2007 Budget G\$000
6111	46,975	135,014	294,226	258,505	154,937	127,661	32,771	15,916	42,339	184,984	333,365	1,626,693
6112	61,659	201,880	253,469	432,593	172,937	424,984	79,446	9,020	51,041	214,264	812,073	2,713,366
6113	0	42,126	130,242	179,058	93,198	210,039	35,349	13,981	44,459	59,626	189,958	998,036
6114	654	4,344	3,244	2,843	1,508	4,637	341	1,071	2,115	3,724	28,852	53,333
6115	97,410	49,157	75,092	86,908	55,399	83,381	23,433	27,851	43,152	53,922	109,857	705,562
6116	0	0	0	0	0	2,654	0	1,017	0	2,161	7,444	13,276
6117	732	0	0	0	0	0	0	0	21	342	53,242	54,337
6131	1,766	4,177	10,426	8,250	3,662	12,342	5,676	686	2,567	5,122	21,420	76,094
6132	0	0	0	0	0	0	0	0	0	0	0	0
6133	61,349	25,000	20,560	29,453	14,385	27,677	30,003	11,983	40,616	73,211	36,353	370,590
6134	17,194	32,634	58,800	71,875	35,443	62,468	11,990	5,293	13,969	36,696	105,382	451,744
6221	1,452	1,756	1,200	500	250	700	550	200	380	820	1,230	9,038
6222	8,650	9,745	6,400	15,000	5,500	8,000	5,900	2,100	3,740	17,500	44,520	127,055
6223	6,900	8,200	6,560	2,900	1,320	5,500	4,000	800	2,210	6,140	12,090	56,620
6224	6,200	7,400	6,480	5,100	3,700	7,000	3,400	1,700	2,100	4,700	24,954	72,734
6231	12,200	2,000	420	950	350	600	15,800	1,180	6,000	1,623	1,600	42,723
6241	800	0	1,524	2,780	400	3,600	500	0	0	768	6,500	16,872

6242	19,500	19,280	34,150	28,000	30,500	45,708	20,400	14,600	21,000	40,000	169,200	442,338
6243	2,400	850	820	1,000	2,500	1,965	660	450	820	3,040	9,100	23,605
6252	650	0	550	1,200	0	0	0	0	0	0	0	2,400
6255	1,750	2,965	12,456	7,000	2,000	6,300	10,100	4,400	4,300	9,200	18,100	78,571
6261	11,430	3,340	3,900	2,400	1,100	2,440	7,015	2,150	5,900	2,245	6,500	48,420
6262	0	0	0	0	0	0	0	0	0	0	0	0
6263	117	25	22	15	35	0	9	120	258	0	150	751
6264	2,000	240	500	180	555	430	500	0	1,300	1,485	3,780	10,970
6265	3,700	110	0	920	475	200	6,700	4,500	900	770	0	18,275
6271	470	1,570	1,980	780	368	1,060	1,010	300	310	820	4,400	13,068
6272	0	17,900	8,718	8,800	6,531	32,346	5,076	1,000	2,000	1,850	45,500	129,721
6273	0	3,715	4,854	2,900	2,733	4,000	283	0	0	1,720	24,100	44,305
6281	14,759	29,448	53,610	125,622	6,268	84,160	8,709	1,552	2,500	50,003	127,078	503,709
6282	225	280	1,400	755	295	1,000	580	550	400	1,120	15,150	21,755
6283	284	390	2,400	4,400	1,690	700	1,150	0	160	2,188	17,867	31,229
6284	500	14,040	22,427	13,008	18,112	29,680	5,910	2,500	10,276	8,750	2,369	127,572
6291	3,700	1,450	4,000	3,200	2,440	2,900	2,200	1,000	1,166	2,700	7,750	32,506
6292	13,900	10,510	0	175	5,820	4,200	47,702	26,000	12,515	12,347	1,333	134,502
6293	600	640	1,800	2,285	700	65	650	300	230	930	885	9,085
6294	170	75	350	4,030	400	210	480	0	52	2,250	240	8,257
6301	0	0	0	0	0	0	0	0	0	0	1,007,871	1,007,871
6302	6,268	3,113	1,500	0	1,850	3,310	6,491	1,200	11,116	1,300	21,000	57,148
6321	0	0	0	900	0	0	0	0	0	0	0	900
6322	0	0	0	0	0	0	0	0	0	0	0	0
9999	406,364	633,374	1,024,080	1,304,285	627,361	1,201,917	374,784	153,420	329,912	808,321	3,271,213	10,135,031

G2A: GUYANA EDUCATION BUDGET: BY REGION AND BY LINE ITEM. 2004, 2006 G\$000

YEAR	REGION	SUB PROG	611Z Salaries	613Z Oncosts	622Z	623Z	624Z Maintenance	625Z	626Z	627Z	628Z includes Security	629Z includes boarding	630Z includes Subvention
2004	01	402N	15,746	3,713	1,575	625	3,450	150	2,122	0	30	350	605
2004	01	403P	97,221	24,480	4,475	2,900	10,265	1,000	6,050	0	1,093	2,480	594
2004	01	404S	19,988	4,698	1,500	400	1,737	0	1,475	0	47	493	801
2004	02	402N	64,522	5,653	2,068	0	75	0	347	0	0	57	324
2004	02	403P	197,311	23,992	5,222	0	170	0	884	0	27,858	140	343
2004	02	404S	126,746	21,099	1,976	0	82	0	927	0	0	7,399	320
2004	03	402N	122,689	10,159	829	0	5,877	953	367	1,082	9,912	0	0
2004	03	403P	290,704	30,546	1,602	0	8,054	4,383	2,416	3,781	1,970	0	0
2004	03	404S	194,073	18,813	723	0	2,896	3,786	577	2,804	1,677	0	0
2004	04	402N	190,189	19,769	4,352	0	7,835	754	607	1,985	24,632	901	102
2004	04	403P	373,614	47,174	6,841	0	28,493	1,696	1,343	7,135	57,812	2,171	11
2004	04	404S	181,885	21,246	3,833	0	2,425	236	384	1,480	23,281	1,046	221
2004	05	402N	64,379	5,572	140	0	3,992	0	89	989	1,213	108	84
2004	05	403P	194,148	19,587	1,300	164	13,756	0	586	1,219	1,234	391	400
2004	05	404S	104,224	10,841	1,296	12	6,028	0	80	805	812	741	748
2004	06	402N	136,678	11,204	1,771	6	1,866	767	257	0	6,727	310	236
2004	06	403P	290,297	29,722	2,394	43	6,803	3,045	799	0	37,516	676	427
2004	06	404S	211,026	25,328	2,453	211	7,713	996	363	0	26,940	983	476
2004	07	402N	14,225	2,693	0	0	0	0	7	0	0	0	0
2004	07	403P	73,386	16,981	0	0	0	0	328	0	841	0	0
2004	07	404S	25,915	5,912	0	998	0	0	309	0	1,286	37,899	0
2004	08	402N	2,491	618	50	0	25	0	0	0	0	0	0
2004	08	403P	27,338	8,009	50	159	45	0	100	0	97	313	0
2004	08	404S	9,804	1,961	50	0	20	0	100	0	0	265	0
2004	09	402N	20,712	6,499	0	0	0	0	280	92	0	0	0
2004	09	403P	91,959	23,094	0	0	0	0	850	238	283	0	0
2004	09	404S	21,904	4,448	30	0	0	0	792	314	100	0	0
2004	10	402N	73,081	14,107	4,041	42	2,201	327	161	646	8,878	335	117
2004	10	403P	214,807	44,706	5,031	150	10,262	6,413	1,061	1,459	17,358	292	221
2004	10	404S	136,420	31,072	4,443	0	8,744	178	252	1,043	15,567	1,918	441
2004	11	402N	183,470	15,987	4,563	0	35,401	9,155	195	7,427	26,656	209	4,200
2004	11	403P	415,844	39,261	1,672	0	50,709	6,646	632	17,244	45,553	1,629	2,563
2004	11	404S	584,760	59,776	9,519	0	75,975	17,400	1,540	19,472	54,594	1,767	231,127
2004	99	402N	888,182	95,974	19,389	673	60,722	12,105	4,433	12,221	78,049	2,270	5,667
2004	99	403P	2,266,629	307,549	28,588	3,416	128,557	23,183	15,049	31,076	191,614	8,091	4,558
2004	99	404S	1,616,746	205,192	25,822	1,622	105,620	22,595	6,799	25,918	124,303	52,512	234,135

Item 6242 Maintenance Buildings may be reported in Administration Sub-Program (401A) not by Primary, Secondary etc.

Primary Tops reported against Sub-Program 403P not 404S. Item 6301 subvention to Presidents College (Region 4) and Queens College (Region 11/Georgetown)

YEAR	REGION	SUB PROG	611Z Salaries	613Z Oncosts	622Z	623Z	624Z Maintenance	625Z	626Z	627Z	628Z includes Security	629Z includes boarding	630Z includes Subvention
2006	01	401A	4,734	976	6,845	10,250	390	0	4,840	451	15,206	675	0
2006	01	402N	22,004	5,762	2,560	50	300	0	740	0	0	150	50
2006	01	403P	125,128	28,802	9,425	1,950	20,140	1,680	6,601	0	673	3,050	1,904
2006	01	404S	30,040	12,976	3,690	450	515	0	1,440	0	0	11,450	950
2006	02	401A	8,449	1,611	4,481	1,883	19,470	3,140	1,675	16,982	32,522	1,621	2,308
2006	02	402N	66,141	7,059	5,518	0	200	0	447	0	2,258	68	140
2006	02	403P	205,945	28,969	10,354	0	227	0	782	0	5,212	160	48
2006	02	404S	141,088	16,403	4,751	0	90	0	693	0	5,655	9,686	616
2006	03	401A	6,422	1,192	2,585	330	1,868	74	933	511	50,609	4,158	242
2006	03	402N	148,512	13,432	3,927	0	9,435	1,068	699	2,425	1,974	231	238
2006	03	403P	330,845	39,211	6,488	0	18,218	6,077	2,790	6,933	4,247	318	610
2006	03	404S	209,172	22,303	5,915	0	6,344	4,294	364	3,259	3,430	715	189
2006	04	401A	7,125	1,068	2,600	1,950	10,221	760	1,941	822	7,296	4,716	256
2006	04	402N	218,274	21,666	5,083	0	12,127	2,022	892	2,872	37,510	331	16
2006	04	403P	443,290	49,691	6,525	0	19,681	2,243	1,270	6,558	65,562	527	73
2006	04	404S	167,751	23,067	6,502	0	3,767	1,053	13	1,578	30,652	120	0
2006	05	401A	8,203	1,807	8,859	253	3,004	1,649	1,933	7,565	24,175	7,230	1,774
2006	05	402N	71,535	7,393	0	0	9,732	0	0	0	0	0	7
2006	05	403P	215,135	21,540	485	96	14,843	0	0	0	278	0	22
2006	05	404S	118,987	13,159	1,050	0	4,227	0	0	0	0	70	45
2006	06	401A	8,059	1,984	6,027	510	6,386	686	1,859	34,926	10,677	4,282	598
2006	06	402N	151,160	13,836	2,972	0	9,444	2,081	357	0	10,175	70	788
2006	06	403P	333,773	36,680	5,323	0	19,782	2,148	569	0	47,693	0	1,155
2006	06	404S	259,301	28,755	4,849	0	9,833	886	93	0	37,569	0	576
2006	07	401A	23,899	5,631	8,993	14,897	20,288	9,413	7,997	6,314	13,314	3,225	1,590
2006	07	402N	15,047	4,505	1,237	0	0	0	59	257	0	0	0
2006	07	403P	91,100	19,539	1,712	0	0	0	589	253	219	0	0
2006	07	404S	29,444	8,722	1,214	0	0	0	1,517	1,225	775	41,408	0
2006	08	401A	3,932	999	4,358	425	14,400	4,848	5,267	0	2,397	1,205	1,010
2006	08	402N	3,601	825	0	0	0	0	220	0	0	0	0
2006	08	403P	33,377	8,034	0	0	0	0	417	0	0	0	0
2006	08	404S	12,957	2,764	0	2,125	0	0	285	0	0	18,911	0
2006	09	401A	8,640	1,819	5,582	5,800	20,735	3,900	3,765	440	4,382	1,330	490
2006	09	402N	27,118	13,262	300	0	0	0	400	130	0	0	0
2006	09	403P	95,180	20,742	300	0	0	0	860	200	472	0	0
2006	09	404S	36,489	11,120	700	0	130	0	1,200	830	2,158	11,080	0
2006	10	401A	5,927	1,231	5,117	1,332	2,529	270	2,840	2,059	7,653	2,362	508
2006	10	402N	82,211	15,872	8,251	0	5,196	3,085	477	455	12,396	217	676
2006	10	403P	217,880	43,162	6,748	132	23,949	693	1,069	740	20,737	383	28
2006	10	404S	180,510	35,300	7,464	0	6,656	3,688	627	707	22,716	9,707	39

2006	11	401A	9,194	909	4,688	780	279	0	3,249	993	2,432	9,168	1,452
2006	11	402N	207,906	19,939	10,810	50	38,115	3,265	543	8,261	28,618	39	3,121
2006	11	403P	450,274	45,130	12,185	0	41,296	4,968	200	19,216	40,870	80	2,382
2006	11	404S	599,978	64,976	14,780	0	62,418	6,434	330	17,931	54,039	66	245,972
2006	99	401A	94,585	19,227	60,135	38,410	99,570	24,739	36,299	71,064	170,663	39,972	10,227
2006	99	402N	1,013,509	123,551	40,658	100	84,549	11,521	4,834	14,400	92,930	1,106	5,035
2006	99	403P	2,541,927	341,499	59,545	2,178	158,135	17,808	15,147	33,901	185,962	4,518	6,222
2006	99	404S	1,785,716	239,543	50,913	2,575	93,980	16,355	6,564	25,530	156,994	103,213	248,388

Table G3: Estimated Per Capita Expenditure by Region, 2006

REGION	SUB PROG	SALARY +oncosts G\$	NON-SAL (excl 6301) G\$	2005/06 Female	2005/06 Males	Salary /student	NonSal /student	Total G\$ /Student
Regions 1,7,8,9	402N	92,123,636	6,453,539	1,550	1,584	29,395	2,059	31,454
	403P	421,900,910	50,444,278	8,691	9,349	23,387	2,796	26,183
	404S	144,511,226	102,053,075	2,139	1,691	37,731	26,646	64,377
Regions 2,5,6,10	402N	415,206,318	75,008,729	5,363	5,625	37,787	6,826	44,614
	403P	1,103,084,158	163,655,961	21,456	22,994	24,816	3,682	28,498
	404S	793,503,252	132,293,860	11,675	10,288	36,129	6,023	42,153
Regions 3,4,11	402N	629,729,278	173,671,233	7,872	8,142	39,324	10,845	50,169
	403P	1,358,441,123	269,316,625	28,483	30,155	23,167	4,593	27,759
	404S	1,087,245,046	229,736,853	16,309	15,049	34,672	7,326	41,998
All Regions	402N	1,137,059,232	255,133,501	14,785	15,351	37,731	8,466	46,197
	403P	2,883,426,191	483,416,864	58,630	62,498	23,805	3,991	27,796
	404S	2,025,259,524	464,083,788	30,123	27,028	35,437	8,120	43,557
			6,045,744,947	1,202,634,153	103,538	104,877	29,008	5,770
TOTAL	Nursery	5,685,296	1,275,668	14,785	15,351	189	42	231
@G\$200 per USD	Primary	14,417,131	2,417,084	58,630	62,498	119	20	139
	Secondary	10,126,298	2,320,419	30,123	27,028	177	41	218

Source: Per Capita.XLS MOE Subvention to President and Queen's Colleges excluded from Expenditure.
Enrollments are for 2005/06 school year (including PC and QC); USD exchange rate used as illustration only.
Caution: School maintenance expenditure may be excluded if reported in 401A not by Sub-Program.

Attachment H: Summary of ODA Project Assistance

Figure 5.2: SUMMARY OF ODA PROJECT ASSISTANCE (SSRP, BEAMS, GEAP) AND REPORTED ENROLLMENT

REG	Type	School Name	Emerg. Repairs Schools	SSRP Pilots	BEAMS Renov.	BEAMS New	GEAP Rehab.	GEAP New	GY Capital	MOE ENROL 2000	MOE ENROL 2004	Stud 2004	Stud 2005 Male	Stud 2005 Fem.
R01	2CHS	Port Kaituma	SSRP1							179	108	108	151	136
R02	3GSS	Anna Regina Multi	SSRP1							933	1,100	943	409	631
R02	3GSS	Aurora				BEAMS2				434	515	515	285	266
R02	3GSS	Abram Zuil	SSRP1							628	621	651	254	367
R02	3GSS	Cotton Field		SSRP2						976	988	1,062	517	471
R03	2CHS	St. John's	SSRP1							488	402	402	207	147
R03	3GSS	Leguan	SSRP1							353	376	321	177	199
R03	3GSS	L'Aventure		SSRP2						357	491	476	237	254
R03	3GSS	Uitvlugt		SSRP2						532	566	597	264	302
R04	1PTop	Diamond				BEAMS2				87	100	100	58	44
R04	2CHS	Betervervagting	SSRP1							800	479	480	329	268
R04	2CHS	Friendship	SSRP1							482	599	599	218	281
R04	3GSS	Annandale		SSRP2						500	595	579	235	360
R04	3GSS	Bladen Hall			BEAMS1					735	0	677	151	234
R04	3GSS	Covent Garden	SSRP1							557	707	508	243	464
R05	3GSS	Bygeval	SSRP1							0	772	772	289	352
R05	3GSS	Rosignol	SSRP1							620	495	595	254	369
R05	3GSS	Belladrum		SSRP2						600	588	588	337	251
R05	3GSS	Fort Wellington		SSRP2						321	358	358	188	163
R06	3GSS	Corentyne Comp.	SSRP1							621	802	802	331	438
R06	3GSS	Skeldon High					GEAP1			621	574	574	331	342
R06	3GSS	Skeldon Line Path					GEAP1			630	795	795	353	351
R06	3GSS	Tagore Memorial					GEAP1			670	708	795	334	372
R06	3GSS	Manchester		SSRP2						334	391	391	253	162
R06	3GSS	Tutorial Academy			BEAMS1					560	707	379	162	185
R06	3GSS	Vryman's Erven		SSRP2						602	547	545	249	276
R06	3GSS	New Amsterdam Multi	SSRP1							687	568	568	280	382
R07	3GSS	Bartica	SSRP1			BEAMS2			GYCAP	871	1,085	1,085	544	536
R07	3GSS	Waramadong							GYCAP	0	342	342	142	205
R08	3GSS	Paramakatoi	SSRP1							235	404	362	150	254
R09	3GSS	St. Ignatius	SSRP1							337	347	360	163	197
R10	2CHS	Kwakwani	SSRP1							278	309	309	177	165
R10	3GSS	Christianburg Wismar					GEAP1			758	865	865	335	377
R10	3GSS	Linden Foundation						GEAP2		291	378	378	435	443
R10	3GSS	Mackenzie		SSRP2			GEAP1			531	607	607	233	436
R10	3GSS	Silvercity					GEAP1			491	619	537	256	363
R10	3GSS	Wisburg						GEAP2		0	723	672	412	311
R11	2CHS	Lodge			BEAMS1					509	0	407	211	196
R11	3GSS	Campbellville	SSRP1	SSRP2						760	867	867	425	442
R11	3GSS	St. John's College	SSRP1							986	811	811	290	363
R11	3GSS	Charlestown	SSRP1		BEAMS1					700	542	576	274	285
R11	3GSS	North Ruimveldt			BEAMS1					692	732	732	354	378
R11	3GSS	Tucville		SSRP2						0	541	541	271	270
R11	3GSS	Dolphin		SSRP2						577	714	714	347	367
			19	12	5	*3	6	2	2	22,323	24,838	25,345	12,115	13,655
SSRP(1) ERS			19							10,515	11,394	11,119	5,165	6,276
SSRP(2) Pilots				12						6,316	7,197	7,269	3,421	3,675
BEAMS(1) Renovation					5					3,196	1,981	2,771	1,152	1,278
BEAMS(2) new construction						3*				521	615	615	343	310
GEAP(1) Rehabilitation							6			3,701	4,168	4,173	1,842	2,241
GEAP(2) new construction								2		291	1,101	1,050	847	754
Government funded									2	871	1,427	1,427	686	741

PROJECTS.XLS (list provided by MOE 4 Dec 2007); plus selected records from MOE Statistical Data (GY0506S_Projects.sql 5 Dec 2007)

Attachment J: Summary of Baseline, Medium and High Outcomes Scenarios

SECONDARY STUDENTS	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline	62,424	65,391	65,638	67,141	68,973	71,209	72,104	71,616	71,159	67,913	98.5%
Medium	62,424	65,391	65,638	67,141	72,956	76,506	78,675	79,349	80,047	77,553	106.3%
High Outcome	62,424	65,391	65,638	67,141	74,134	78,595	81,250	82,385	83,563	81,408	109.8%

CXC ENGLISH CANDIDATES	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline (40%)	7,745	7,786	8,252	7,608	6,897	7,121	7,210	7,162	7,116	6,791	98.5%
Medium (45%)	7,745	7,786	8,252	7,608	7,296	7,779	8,129	8,325	8,523	8,376	114.8%
High (STR=52%)	7,745	7,786	8,252	7,608	7,628	8,369	8,933	9,333	9,735	9,736	127.6%

SECONDARY TEACHERS	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline (STR=20)			3,392	3,437	3,448	3,560	3,605	3,580	3,557	3,395	98.5%
Medium (STR=23)			3,392	3,437	3,558	3,643	3,659	3,606	3,557	3,371	94.7%
High (STR=26)			3,392	3,437	3,530	3,572	3,532	3,432	3,342	3,131	88.7%

TRAINED TEACHERS	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline (61%)			1,788	1,844	1,868	1,933	1,964	2,004	2,027	2,070	110.8%
Medium (70%)			1,788	1,844	1,956	2,076	2,158	2,235	2,312	2,359	120.6%
High (80%)			1,788	1,844	1,976	2,107	2,225	2,299	2,406	2,504	126.7%

NEW TEACHERS	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline				56	24	65	31	40	23	43	226

Medium					56	112	120	82	77	77	47	515
High Outcome					56	132	131	118	74	107	98	660

RECURRENT EXPENDITURE G\$M (constant)	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline				4,065	4,108	4,264	4,342	4,366	4,381	4,290	4.43%
Medium				4,065	4,278	4,471	4,585	4,641	4,704	4,631	8.25%
High Outcome				4,065	4,281	4,460	4,569	4,603	4,677	4,646	8.53%

EXPENDITURE Per TEACHER G\$000 (constant)	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline				1,183	1,191	1,198	1,204	1,220	1,232	1,264	6.1%
Medium				1,183	1,202	1,227	1,253	1,287	1,322	1,374	14.3%
High Outcome				1,183	1,213	1,249	1,294	1,341	1,399	1,484	22.4%

EXPENDITURE Per STUDENT G\$000 (constant)	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline				60.544	59.560	59.880	60.218	60.964	61.567	63.169	6.1%
Medium				60.544	58.638	58.440	58.277	58.488	58.765	59.714	1.8%
High Outcome				60.544	57.746	56.747	56.234	55.872	55.970	57.071	-1.2%

EXPENDITURE Per STUDENT US\$ (constant)	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	5 years change
Baseline				303	298	299	301	305	308	316	6.1%
Medium				303	293	292	291	292	294	299	1.8%
High Outcome				303	289	284	281	279	280	285	-1.2%

