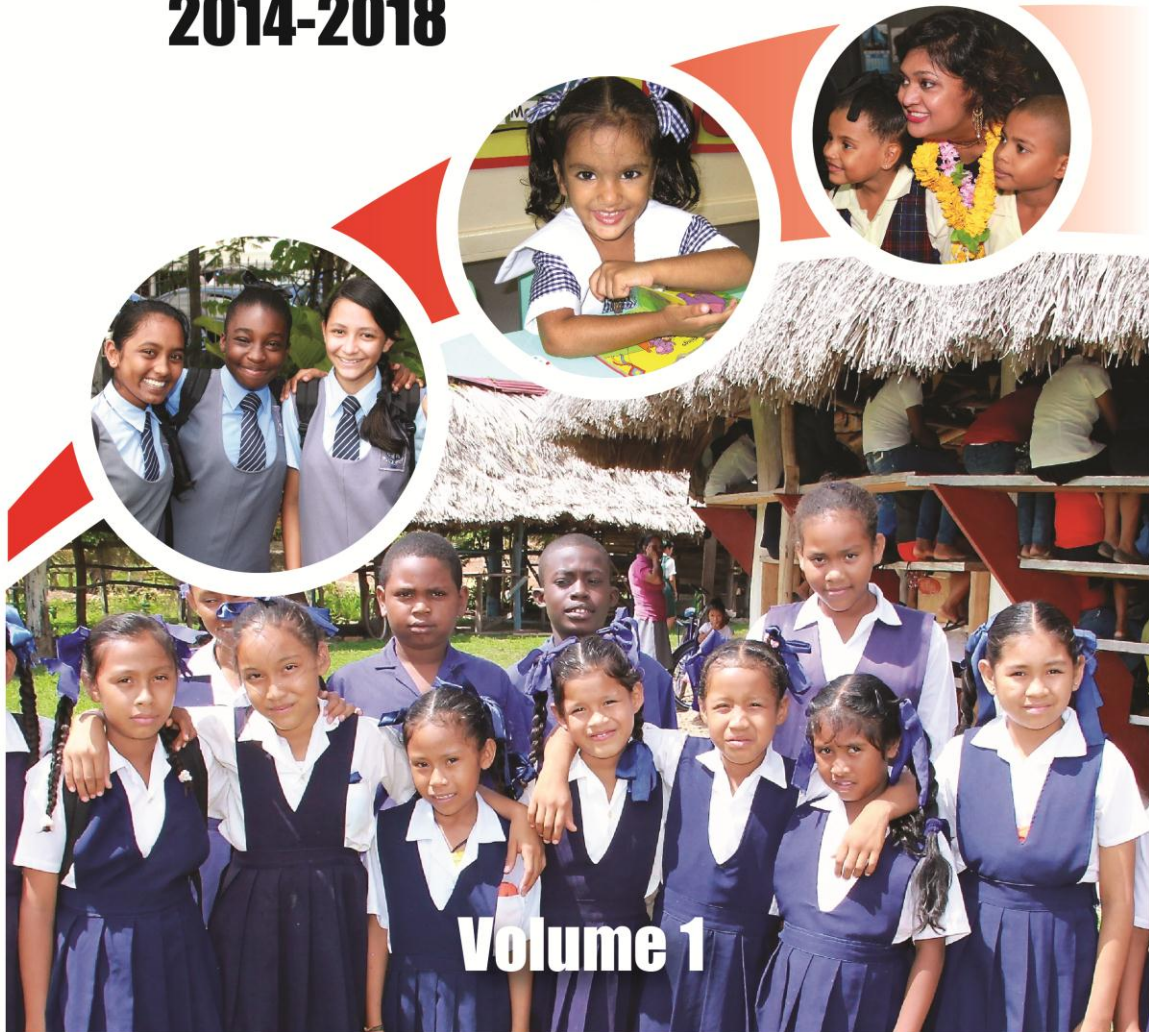




MINISTRY OF EDUCATION

# Guyana Education Sector Plan 2014-2018



Volume 1



## Foreword

This document is Volume I of the Ministry of Education's 2014-2018 National Education Sector Plan. It covers all levels of education except university education. Volume II will consist of the detailed action plans of each unit or department that must take actions in order to meet the targets of the strategy. This plan continues the focus on improving the quality of education that was outlined in previous plans, but it places much more emphasis on accountability by continuously monitoring results throughout the plan period.

Preparation for this plan started with an internal assessment of what had been achieved in the plan period that began in 2008. Considerable progress was clearly made in a number of areas. The target of having 70% of the teaching force professionally trained was achieved before the end of the plan. Although not an objective of the last plan, the number of teachers with a degree also increased. Progress was also been made in improving the performance of students in many subjects at the CXC examinations. However, the major concern continues to be the performance of students in the core subject areas of English and mathematics. While the results in English improved considerably by 14 percentage points, there was no improvement in mathematics. In 2014 the percentage pass rose to 38 percent, the highest percentage pass that our country has recorded in its history, but this achievement was just outside the last plan period. The Ministry has already begun to tackle this issue. Our new and revised strategies begin as early as the nursery level with more emphasis on emergent numeracy and continue into the primary and secondary levels with emphasis on continued professional development for teachers and more interactive methods to engage students.

The development of this plan, like previous plans, was based on the active practice of the principle of consultative democracy defined in article 13 of the Constitution of Guyana. Many stakeholders were consulted all across Guyana. General consultations, as well as consultations on specific education issues, began as early as 2012 and continued throughout 2013. While stakeholders expressed concerns about a range of issues, their overarching priority was improved student learning outcomes. The major focus of this plan therefore is improving the learning achievements of students at all levels, especially in the core areas of English and mathematics, and on reducing the disparity in achievement between different sectors and populations. For example, this plan seeks to reduce the differences in learning outcomes between students with special education needs and students without and between hinterland and coastal students.

We believe that good teachers are the backbone of any education system. Accordingly, this plan places great emphasis on increasing the number of trained teachers and on continuous professional development (CPD) training programmes for practicing teachers. These CPD programmes will be much more focused on observed weaknesses in subject areas, and they will be followed by increased support and supervision to ensure that the teachers put into practice new knowledge and skills gained from these programmes. This strategy will provide considerable support for teachers to meet the professional standards that are now the subject of nation-wide consultations.

The Government continues to believe that the future development of Guyana rests on the quality of persons emerging from the education system. The Ministry of Education acknowledges that it has a major responsibility for this, but it has become increasingly aware that the education sector alone cannot achieve the changes and improvements in results that the country needs without the support of some very important partners.

The Ministry of Education will enhance its efforts to engage and seek the support of these partners during the implementation of this plan. The new Education Bill, which was recently laid in Parliament and awaits debate and passage into law, speaks to the establishment of a National Advisory Committee on Education. The members of this Committee will be drawn from various stakeholder groups. Their duty will be, inter alia, to receive and study reports submitted by the Ministry and offer advice arising therefrom. This plan also specifically outlines proposals to sensitize and empower PTAs and other community organisations to monitor and support school improvement. It outlines a robust accountability system, which will involve annual reports on the performance of schools and of the education system as a whole to all stakeholders.

We believe that if all stakeholders embrace and support the objectives of this plan, we will see a major transformation in the education system by the end of this decade. We warmly invite all to review and support and implement this new strategic plan and its accompanying plans of action.

Hon. Priya Manickchand  
Minister of Education

## **Acknowledgements**

The production of this Education Sector Plan is the work of hundreds of persons. The development of the plan was coordinated by the Ministry of Education's Planning Unit, but the articulation of policies, suggestions and recommendations into operational plans was the work of technical and professional officers in both central and regional education units and departments.

The Ministry of Education owes its biggest debt of gratitude to the large number of persons (parents, teachers, students, representatives of Disability Persons' Organisations and community members in general ) who came to consultation meetings, PTA meetings, and special workshops, and shared their views on what the Ministry needs to do to improve the education system. Some consultations were very specific, such as the consultations on Special Education Needs, Literacy, Technical and Vocational Education and Training, Early Childhood Education and Science. Others, however, such as those at PTA and community meetings, were more general in nature. In all cases the Ministry appreciated the effort that persons made to come to the meetings and valued all contributions to the discussions.

The Ministry also wishes to acknowledge the technical and/or financial contributions of development partners such as the Global Partnership in Education (GPE) the World Bank, UNICEF, UNESCO and the IDB. The assistance of those partners and consultants, who advised on best practices, reviewed the document at various stages, and made suggestions for improvement, is particularly appreciated.

## Vision and Mission for the Education Sector

### Vision

The Vision of the Ministry of Education is that education should be the main and most effective contributor to the development of a citizenry able to modernize Guyana; to support the citizenry in becoming more productive and tolerant; and to live in mutual respect.

### Mission Statement

To provide an education system that delivers quality education and training at all levels and in particular:

- Eliminate illiteracy
- Modernize education
- Strengthen tolerance

### Core Values and Mandates

The Ministry of Education is dedicated to ensuring that all citizens of Guyana, regardless of age, race or creed, physical or mental disability, or socio-economic status, are given the best possible opportunity to achieve their full potential through equal access to quality education, as defined by the standards and norms outlines by the Ministry. The commitment to quality and equity in education, with no barriers in access to anyone, is clear in this declaration.

The Ministry defines education as more than the instrumental activity for supporting greater national development or reducing poverty, even though it can contribute significantly to both of these objectives. It has intrinsic value. It is the main way to help each human being achieve his/her highest potential. It should help the nation's citizens develop the necessary knowledge, skills and values to lead happy and productive lives. On the basis of the education that they receive, they should love their country and respect the diversity of their country's ethnic, religious and political traditions. They should adhere to the ideals and practice of democracy, justice, peace, diversity and accountability.

In addition, although children are, and should be, the main target of educational efforts, rapidly changing economic circumstance and changes in technology require that the Ministry commit to a policy of providing continuing education and training opportunities to the adult population.

Although private schools will be encouraged to operate, the Ministry is committed to providing free and compulsory education from the pre-primary to secondary levels. The Ministry also remains committed to strengthening its partnerships with stakeholders, in particular teachers and their representative organisations, parents/guardians and communities.

## Acronyms

ACEO (N)	Assistant Chief Education Officer (Nursery)	HIV-AIDS	Human immunodeficiency virus infection / acquired immunodeficiency syndrome
ACEO (P)	Assistant Chief Education Officer (Primary)	ICT	Information and Communication Technology
ACEO (S)	Assistant Chief Education Officer (Secondary)	IDB	Inter-American Development Bank
ADE	Associate Degree in Education	IRI	Interactive Radio Instruction
BCCP	Basic Competency Certificate Programme	M&E	Monitoring and evaluation
BNTF	Basic Needs Trust Fund	MDGs	Millennium Development Goals
BoS	Bureau of Statistics	MICS	Multiple Indicator Cluster Survey
CARICOM	Caribbean Community	MoE	Ministry of Education
CBET	Competency-based Education and Training	NCERD	National Centre for Education Resource Development
CDB	Caribbean Development Bank	NER	Net Enrolment Rate
CEO	Chief Education Officer	NGO	Non-governmental organization
CFS	Child Friendly School	NGSA	National Grade Six Assessment
CHS	Community High Schools	OECD	Organization for Economic Co-operation and Development
COHSOD	Council for Human and Social Development	PAHO	Pan American Health Organization
CPCE	Cyril Potter College of Education	PIC	Practical Instruction Center
CPD	Continuous professional development	PISA	Programme for International Student Assessment
CSEC	Caribbean Secondary Education Certificate	PRSP	Poverty Reduction Strategy Paper
CSME	CARICOM Single Market and Economy	PS	Permanent Secretary
CVQ	Caribbean Vocational Qualification	PTA	Parent Teacher Association
CXC	Caribbean Examination Council	PU	Planning Unit
DCEO (A)	Deputy Chief Education Officer (Administration)	SCCP	Secondary Certificate Competency Programme
DCEO (D)	Deputy Chief Education Officer (Development)	SEN	Special education needs
EFA-FTI	Education for All-Fast Track Initiative	SES	Socio-economic status
ESP	Education Sector Plan	SHN	School Health and Nutrition
EU	European Union	SIAC	School Improvement Action Committees
GDP	Gross Domestic Product	SIP	School improvement plan
GER	Gross Enrolment Rate	TIMSS	Trends in International Mathematics and Science Study
GITEP	Guyana Improving Teacher	TVET	Technical and vocational education

GoG	Education Project		and training
GPE	Government of Guyana	TOR	Terms of Reference
	Global Partnership for	TSC	Teaching Service Commission
	Education		
GSS	General secondary schools	UG	University of Guyana
HFLE	Health and Family Life	UNESCO	United Nations Educational, Scientific and Cultural Organization
	Education		
HIES	Household Income and	UNICEF	United Nations Children's Fund
	Expenditure Survey		
		USE	Universal Secondary Education



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## EXECUTIVE SUMMARY

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### Priorities for the 2014-2018 ESP

In designing the Education Sector Plan (ESP) for 2014-2018, a wide variety of stakeholders both within and outside of the Ministry of Education (MoE) was consulted. As a result, this ESP focuses on **increasing the learning achievements at all levels of education and for all sub-groups** and **decreasing the differences in learning outcomes between sub-groups, especially between students in coastal and hinterland schools**. The learning outcomes of primary concern are literacy and numeracy, followed by science and technology.

The deficiencies at all levels and for all sub-groups are weak learning outcomes, especially in English and Mathematics for coastal students and in all subjects for students in the hinterland. Although enrollment rates cannot be credibly estimated until the new census data on the size of the population by age have been released, Guyana seems to have achieved respectable rates at the different levels of education except for two sub-groups: at risk and vulnerable children and special education needs children. The first priority for these two sub-groups is to bring them into school and to help them stay in school. However, once in school, the focus even for these two sub-groups will be to maximize their learning achievements.

The Education Sector Plan has these two priorities for 2014-2018 because all those managing successful change in private and public organizations stress how important it is to establish a clear **FOCUS**. The lessons learnt in Guyana also imply that, if we are to see significant improvement, the strategy must be protected from becoming overloaded, fragmented, and unmanageable. As a result of inclusive consultations, different stakeholders may expect the ESP to place a priority on their specific concerns. However, the Ministry feels that it has selected the priority issues identified by the majority of stakeholders. A focus on improving learning outcomes and reducing sub-group differences in learning reflects the interests of all groups at all education levels.

A strategy depends on the capacities of those organizations and groups responsible for implementing it. It is in this context that a proper organizational audit of key units in Guyana's education sector is required to assess the capacity strengths and shortfalls of departments that affect their abilities to implement those activities in the new ESP that will be under their jurisdiction.

### International research identifies factors that drive higher learning achievements

Reviews of the most rigorous international evaluations available identify three system-level enabling conditions that indirectly affect learning and four factors that directly increase students' learning outcomes by increasing the quality and the amount of time that students spend in learning. Guyana's current legal and administrative arrangements do not allow it to change all of these factors immediately, but the MoE wishes to focus on most of these factors in its 2014-2018 ESP.

The three system-level enabling conditions are the capacities of implementing units, the presence of an accountability system, and limited autonomy for schools.

- Capacities of implementing units. Those responsible for delivering educational services must have the capacities to improve learning outcomes--specifically, appropriate human capital, well-structured and adequately resourced organizations, and the incentives to focus on increasing students' learning achievements.
- An accountability system. An accountability system creates incentives for students, teachers, schools, and the regional and national departments of the MoE to work harder to achieve better learning results. This system includes using exit examinations and learning assessments to measure learning results and school-level and national report cards.
- Limited autonomy for schools. Schools with limited autonomy over certain process and personnel decisions have better learning outcomes.

The four factors that directly drive learning outcomes are the quality of facilities, the quality of teaching, the quality of the curriculum and the availability and quality of teaching and learning tools for students and teachers (e.g., textbooks, teacher guides, and libraries), and the amount of time that students spend learning during the school year.

### **Initiatives to be pursued under the 2014-2018 ESP**

The initiatives to be pursued in this ESP are selected so as to achieve six intermediate outcomes. Progress on these outcomes is expected to translate into improved learning outcomes for all subgroups.

1. The performance of government departments responsible for implementing ESP priorities is improved.
2. An accountability system that creates incentives to improve student learning outcomes is established and functioning.
3. The quality of school facilities improves
4. The quality of teaching improves
5. The quality of the curriculum, the availability of teaching and learning materials, and the alignment of materials and the curricula of training programmes with the revised curricula improve.
6. Instructional time is increased

An example of an initiative under intermediate outcome 4 is an action to professionalize the role of head teacher. A post-graduate programme will be designed that prepares candidates for the position of head teacher. The program will include training in how to observe and improve the performance of teachers in their schools. It will establish criteria for competitively selecting applicants into the post-graduate programme and into the position of head teacher.

Under intermediate outcome 6, an example is that, after consultation with families, schools, and regional government offices, flexible school schedules may be introduced in some regions/sub regions to reduce student absenteeism attributable to rainy seasons (e.g., in Region 9), low water that prevents travel by boat (Region 1), and weeks when children are needed to help in harvesting crops.

### **Responsibilities for implementing different initiatives**

The ESP tentatively allocates the primary and support responsibilities for implementing each initiative to be pursued to one or more central or regional units as seen in Table VI.1. The audit of the capacities of these units may result in the reallocation of responsibilities.

### **Risks to achieving ESP targets and their mitigation**

Any five year plan in any sector and in any country is potentially vulnerable to events beyond the sector's control. These include:

- Political instability in the country.
- Changes in the Government priorities on which the plan depends. Changes in priorities can occur when the party in power changes or under the same party.
- Economic disruptions that undermine the Government's funding base for the plan.
- Changes in donor priorities that undermine the funding of the plan.

Any of these events could happen in Guyana over the next five years, but their probabilities are judged to be moderately low or low. The education sector has always been regarded as a major priority across the political divide and civil society, with this Administration evidencing stable support for the sector. To support the political and civic consensus, the formulation of this plan was based on an extensive consultative process with senior and technical officers within the sector and civil society. Initiatives of the ESP, such as school-level and national report cards and arrangements for monitoring and evaluating the ESP, ensure that the nation and communities are kept informed of progress and problems with achieving the ESP's objectives. Communities will also be kept informed of the plan through their participatory roles in devising the Regional Action Plans.

Regional and international/donor agencies supported the 2008-2013 ESP extensively, helping to bridge gaps that could have negatively impacted implementation. It is hoped and expected that this level of support will continue. In an effort to ensure sustainability, the Ministry of Education continues to strengthen its collaboration and coordination of supportive organizations, such as the World Bank, UNICEF and the Global Partnership for Education through the conceptualization of on-going and future programmes/project initiatives.

Human and organizational capacity constraints in some units and departments of the Ministry of Education pose a much greater risk to the implementation of the ESP and to the achievement of its objectives. This risk is rated moderately high to substantial. This risk is exacerbated by problems with retaining good performers within the MoE.

The Ministry of Education recognizes these risk factors and is undertaking several mitigation measures. The organizational audit, a first activity to be conducted under the new ESP, will assess whether units responsible for implementing aspects of the ESP have the individual and organizational resources and incentives to deliver on those responsibilities effectively. The audit will focus on the MoE's central and regional departments, but might also include a sample of PTAs and schools. The framework for the audit will be organized around the three factors that seem to determine whether organizational performance is good or weak: human capacity, organizational characteristics, and the formal and informal incentives that shape individuals' choices. The audit for each unit will identify the unit's capacity building needs. These can include human capital shortfalls, relative to responsibilities; organizational problems that need to be resolved; or perverse incentives that need to be addressed. For example, the auditors may find that improving the incentives, such as remuneration packages, is the only way to reduce the loss of good performers from key units.

Given the audit results and ESP priorities, the auditors will recommend to the MoE where to focus its capacity building. The auditors will also recommend to the MoE whether to delay the implementation of an intervention pending better capacities of the implementing units. If an intervention cannot be well-designed and capably implemented, it is better either to delay its implementation, pending the development of the key unit's capacities, or to include it in the next ESP.

Another risk, which is rated substantial, is the complexity of this ESP. The 2014-2018 ESP takes a systems perspective in terms of improving students' learning outcomes. It addresses the conditions that international experience and research find to be necessary and sufficient for increasing student learning. However, these conditions cumulate to a complex agenda, no matter how capable the implementing units of the Ministry are. The initiatives intended to realize these conditions may combine to overwhelm a unit within the MoE, regardless of that unit's capacities relative to normal loads.

To mitigate this very real risk, the MoE will not pursue the ESP mechanically. It will sequence tasks on the basis of the recommendations of the organizational auditors and so as to even out the loads on individual units as much as possible. It may add consultants to provide temporary help for regular staff of a unit. Whenever appropriate, it will start initiatives as pilots to let MoE departments "ease into" implementation. It may even defer the implementation of initiatives until the next plan period.

### **Monitoring and evaluating the results of the ESP**

Monitoring and evaluation (M&E) is essential to any strategic plan. It provides the evidence that lets Government officials, the units responsible for specific interventions, and the civic society judge whether the ESP's interventions are implementing as planned and are likely to achieve their intended outcomes.

The 2008-2013 ESP incorporated M&E as an element, but the results-based management process was at an embryonic stage. In 2012 the Ministry of Finance initiated the drive towards managing for results and selected two pilot ministries, the (Ministry of Health and the Ministry of

Education. It is against this background that M&E will be a central focus of this plan. The Ministry of Education intends to inculcate a culture of results-based management. It will ensure that internal M&E systems are established that can yield timely and more frequent reporting on results and that evaluations are conducted that can inform policies and programmes. It will use interim results to modify interventions in order to increase their chances of success, thus demonstrating that the sector is a true learning organism.

This ESP specifies the results framework for the overall objectives of the ESP and for initiatives conducted during the ESP period of 2014-2018. This framework links the initiatives under the six intermediate outcomes specified earlier to the outputs of these initiatives, to the intermediate outcome that each is expected to help achieve, and to the indicators of that outcome.

### **Cost of ESP and financing options**

The total cost of this ESP over the five-year period, beginning in 2014 is G\$214 billion. Fifty-five percent (55%) is recurrent cost while forty-five percent (45%) is capital cost associated with new/rehabilitated/ maintenance of infrastructure, purchase of equipment and tools, and developmental projects. Although there is a financing gap, the Ministry feels that this is a financially feasible plan. Education as a percentage of the national budget has been maintained at an average of 15% in the last five years, and there is every reason to expect that this will be maintained and even increased in the future. Donor support to the sector has declined in terms of large projects. However, given the coincidence of the priorities in this plan with those of many donor partners, additional external support is expected to fill any gaps in financing.

## PART I - Context

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### Macro-economic Context

Guyana's economy has shown steady improvement over the last six years, in comparison to the period just before the beginning of the Education Strategic Plan 2008-2013 when the world economy began contracting in response to roiling financial markets. This slump has had some residual negative effects, such as in the sugar industry that had a decline in production.

Recognizing the need to insulate itself from the shocks of the global economy, the Government strengthened its monetary and fiscal policies to maintain price and exchange rate stability, managed its debt through the formulation of a national debt and new financing strategy, and fostered greater private investment, exports, and employment through its National Competitiveness Strategy. Rates of growth increased, as reflected in a 4.8 percent growth in gross domestic product (GDP) in 2012, compared to 3.1 percent in 2008. By 2012 inflation rates had declined by 55 percent from 6.4 percent in 2008 to 3.5 percent in 2012. Table I.1 shows the growth trends in real GDP and inflation rates at the beginning of the 2008 ESP, midway and in its penultimate year.

**Table I.1.** Real GDP growth and inflation rates 2008-2012

<b>Economic Indicators</b>	<b>2008</b>	<b>2010</b>	<b>2012</b>
% Growth in Real Gross Domestic Product	3.1%	3.6%	4.8%
Inflation Rate	6.4%	4.5%	3.5%

*Data source: Ministry of Finance, Budget speech Appendix 1- 2009, 2011 and 2013.*

Associated with the upward trend in real GDP is an expansion in export volumes, growth in production, and favorable prices. *Inter alia*, the rice industry grew by 5 percent; non-traditional agricultural production (including agro-industry) by 5.3 percent; mining and quarrying by 14.8 percent; and manufacturing by 2.4 percent. New sectors such as Information and Communication Technology (ICT), Oil exploration, and Eco-tourism emerged. Industries that did not fare as well were the sugar, construction, and forestry industries. Government is now working to expand opportunities for improving the performance of these industries and for further diversifying the economy to reduce reliance on the sugar and forestry industries that may be under threat in the medium term.

The improvements in some sectors, coupled with growth in the availability of private sector credit, resulted in a notable decline in the cost of borrowing in the banking system, as reflected in the interest rates. In 2008, commercial banks' average interest rate was 12.36 percent; this rate is now 11.08 percent (2012). These improved economic conditions resulted in increased central government revenues in 2012 by 7 percent, compared to a 2.6 percent increase in 2008.



## Education Financing

Education is regarded by many as the single most effective tool for reducing poverty. Policy papers and plans of different administrations in Guyana have stated that through education people can live more productive lives and contribute to economic growth. The present Government's continued commitment to the social sectors is evident through the share of expenditure on education, health, and other social sector programmes in a period when Government had to increase expenditures to improve sea and river defenses, repair roads and improve the provision of water and electricity. Expenditure on education and health grew by 2.2 percent and 3.1 percent respectively

Over the last four years an average 15 percent of the National Budget was allocated to education, and Education as a percentage of GDP is approximately 4.7 percent. See Table I.2.

**Table 1.2.** Education expenditure as a % of national budget and GDP (G\$M)

Year	Natl			GDP	% GDP
	Budget	Edu. Budget	% Natl Bud		
2009	118,329	19,269	16%	359,549	5.4%
2010	122,148	18,755	15%	400,922	4.7%
2011	139,757	22,176	16%	460,108	4.8%
2012	161,079	24,121	15%	511,337	4.7%
*2013	162,174	23,632	15%	537,428	4.6%

*Data source: Estimates of the Public Sector (2009-2013)*

Note \*2013 budgeted expenditure.

In the last ESP 2008-2013 some of the MoE's priorities at the primary and secondary levels were improving literacy, numeracy, science and technology. Between 2009 and 2012 the primary and secondary levels received a steady 53-55 percent of the recurrent expenditures. See Table I.3, below.

**Table 1.3.** Percent of education recurrent expenditure by level

Year	Nursery	Primary	Secondary	TVET
2009	11%	28%	25%	3%
2010	11%	27%	28%	3%
2011	10%	27%	28%	2%
2012	10%	26%	28%	3%

*Data source: IFMAS FreeBalance Report (2009-2012); Estimates of the Public Sector (2009-2013).*

Table 1.4 shows per student expenditure by level of education. The secondary level had the highest public expenditure per student for most years in the 2009-2012 period. This higher per capita cost results from initiatives during the last ESP period in science and technology, including the establishment of computer laboratories, the refurbishing or construction of new science laboratories, the distribution of Micro-Science kits to schools, and establishing the

Technical Vocational Education Training (TVET) workshops to facilitate the Secondary Certificate Competency Programme (SCCP) in schools. The unit cost for nursery education is also higher than that of primary education, primarily because the nursery level has a lower student/ teacher ratio.

**Table 1.4.** Average public recurrent expenditure per pupil by education level in US\$

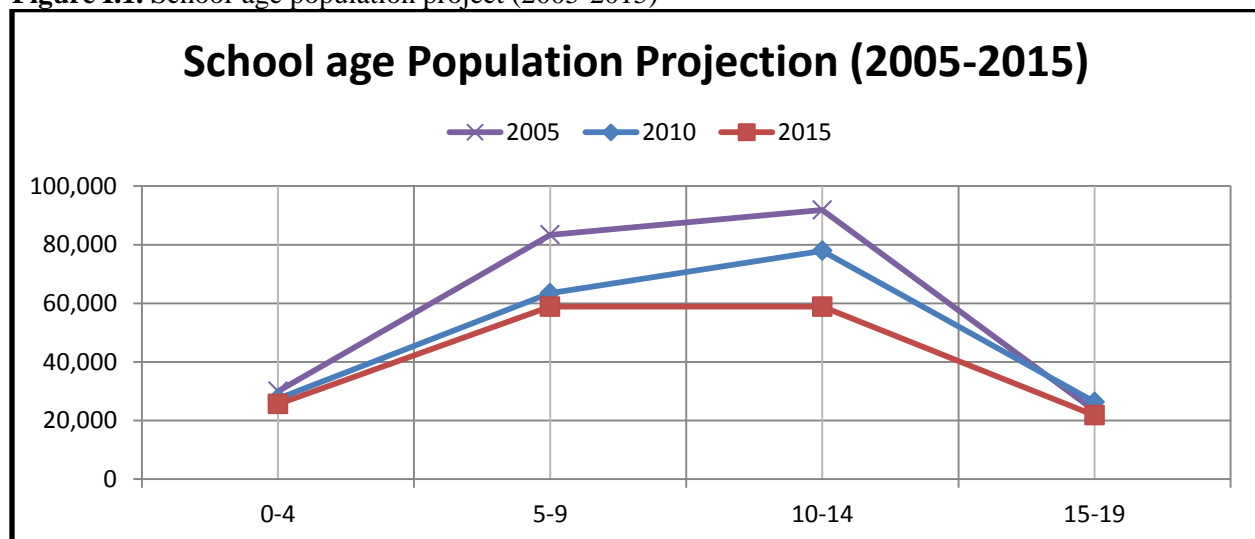
Level	2009	2010	2011	2012
Nursery	323	308	313	333
Primary	221	242	272	304
Secondary	223	323	350	395

*Data sources: IFMAS FreeBalance Report (2009-2013); Budget Speech 2009, 2011&2013.*

## Demographics and socio-economic context

The under-15 population (201,686) in 2008 accounts for just over one-fifth of the general population in Guyana. In 2010 it was projected to be 195,177 and is expected to be 165,142 by 2015.<sup>1</sup> This is indicative of a declining school-age population.<sup>2</sup> See figure I.1.

**Figure I.1.** School-age population project (2005-2015)



*Data source: Bureau of Statistics, Guyana, Population Projections 2005-2025.*

<sup>1</sup> Bureau of Statistics Guyana, Population Projections 2005-2025. As pointed out later on in this document, these projections should be treated with caution.

<sup>2</sup> If the new census numbers show significant declines in the school-age population, the sector may face efficiency challenges and resource opportunities. Schools that are operating substantially below capacity are inefficient. There may be ways to consolidate such schools into fewer schools operating at capacity. Failing that, it may be possible to consolidate the teaching staff at such schools. In either case resources are released that can be used to provide better education for students.

At the beginning of the preceding period (2008), 85 percent of the under 15 population were enrolled in pre-primary to secondary schools. Currently, all students in the above-mentioned age-specific population are enrolled in some form of compulsory education programme in public or private institutions.

In the most recent (2006) Household Income and Expenditure Survey (HIES) conducted in Guyana, rates of poverty at the national level were estimated as 18.6 percent in extreme poverty and 36.1 percent in moderate poverty. The incidence of poverty was highest amongst young people, in particular children, where 47.5 percent of all children between 16 years and below were classified as poor.<sup>3</sup> Of the four ethnic groups (Amerindians, African, East Indian and Mix-races) in Guyana, the highest incidence of poverty is found amongst Amerindians. Most of this group resides in the rural-interior (Regions 1, 7, 8 and 9) of the country. The problems of this group are exacerbated by the lack of proper infrastructure, utilities and qualified human resources, making it difficult to deliver quality educational services in these regions. Results from the 2012 census will provide more up-to-date information, but these were not available during the preparation of this document.

### **Education in Guyana in the context of regional and international standards and commitments**

Guyana is divided into eleven education districts. Ten of these education districts correspond with the administrative and geographical regions of the country, while the capital, Georgetown, is treated as a separate education district.

The Chief Education Officer is the professional head of the education system. Two Deputy Chief Education Officers, one each for Administration and Development, assist him. There are also five Assistant Chief Education Officers with functional responsibility for nursery, primary, secondary, technical and vocational education and an inspectorate unit. Each Assistant Chief Education Officer functions at a national level within his/her sphere of responsibility.

The Principal Education Officer, Georgetown and Regional Education Officers are responsible for monitoring and supervising all educational activities within their respective regional education departments. The teams for the administration of these departments include District Education Officers. The number and types of schools that fall within its boundaries as well as its demographic make-up determine the number of District Education Officers assigned to a department.

The formal education system of Guyana has a structure that spirals up from nursery education through primary education, secondary education, technical/vocational education and training, (TVET), teacher training, and to university, the highest level.

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<sup>3</sup> Guyana Poverty Reduction Strategy Paper 2011-2015.

In addition there are special schools that cater to students who have physical, sensory, and/or intellectual disabilities and to those who are socially disadvantaged or in especially difficult circumstances.

The Adult Education Association and the Institute of Distance and Continuing Education, an arm of the University of Guyana, provide continuing education.

Guyana has committed to a number of long-standing International and Regional Agreements that influence policies and programmes within the sector. Some international agreements are: the Millennium Development Goals (MDGs) and the Education for All (EFA) goals. At a regional level the work of the Caribbean Examination Council (CXC), the regional framework to support the delivery of Health and Family Life Education in CARICOM countries, the agreement through the Council for Human and Social Development (COHSOD) for the Caribbean Vocational Qualification (CVQ) to facilitate the movement of skills through the CARICOM Single Market and Economy (CSME), and the establishment of the CARICOM Accreditation Agency for Education and Training all influenced policies, programmes and the level of expenditure in the education sector.

During the 2008 ESP the education sector benefitted from external support to the sector priority areas. As outlined in the 2008 ESP and the Poverty Reduction Strategy Paper (PRSP) 2011-2015, this support included: Improving Numeracy and Literacy; Improving Classroom Environment; School Health, Nutrition and HIV&AIDS; Universal Secondary Education or USE; Improving Teacher Education and Training; and Education and the World of Work. External support took the following forms. In 2008, the GOG through the World Bank sought and received funding of US\$20.5M from the Fast Track Initiative Catalytic Fund to finance a subset of the Education Strategic Plan 2008-2013 that focused on improving primary education in the hinterland regions (1, 7, 8 &9). This enabled the MoE to continue with the Education for All – Fast Track Initiative, which *inter alia*, dealt with the procurement and distribution of textbooks at the primary level; payment of the Remote Area Incentives to teachers teaching in primary schools in deep riverine and hinterland regions; provision of hot meals, construction of teachers' houses in hinterland communities, and improvement of utilities (water, electricity) and sanitary facilities. In 2011, a second tranche of this grant was provided to continue with this programme.

In January 2011, the MoE received a credit of US\$4.2M from the World Bank to implement the Guyana Improving Teacher Education Project (GITEP). The development objective of this project, which ends in July 2015, is “to assist the recipient to improve the effectiveness and efficiency in the delivery of quality teacher education in Guyana.”<sup>4</sup> The main intervention to achieve this objective is the delivery of the new Associate Degree programme at the Cyril Potter College of Education (CPCE) and the Bachelor of Education at University of Guyana (UG) through a 2+2 model. This project requires development of appropriate courses, provision of support to improve the quality and implementation of the practicum, integration of Information and Communication Technology (ICT) into the teaching learning process, and building capacity of human resources through training programmes for teacher educators and administrators at CPCE and UG.

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<sup>4</sup> Project Appraisal Document- August 2010.

In 2008 the Caribbean Development Bank (CDB) approved a loan of US\$7.5M to the GOG to improve the quality and effectiveness of technical and vocational education (TVET). This three year project was aimed at constructing and equipping two (2) new facilities at Leonora and Experiment in Regions 3 and 5, respectively, procuring learning resources, and providing teacher training. The programme also contributed to the establishment of an institutional framework to further enhance the development of TVET.

The United Nations Children’s Fund (UNICEF) signed a US\$1.2M, 2013-2016 agreement with the GOG which continued its long term support aimed at protecting women and children through various initiatives in the social sector. Among the initiatives for education are Health and Family Life Education (HFLE), Special Education Needs, Promoting and Upgrading Child-friendly Classrooms and Dormitories, Improving the School Welfare service and supporting Monitoring and Evaluation activities.

There were other non-specific education interventions such as the Basic Needs Trust Fund (BNTF). This US\$6M grant agreement from the CDB targeted building capacity in rural/hinterland communities through basic certificate courses in numeracy and literacy and computer training and construction/rehabilitation of schools and teachers houses in Guyana. The GOG also receives general budget support from the European Union (EU), and a proportion of this lump sum is spent on education activities.

### **Accomplishments under the 2008-2013 Strategy**

The policies and programmes implemented during 2008-2013 reflected the priority areas outlined in the Education Strategic Plan for the period and the Poverty Reduction Strategy Paper (PRSP). There were five main outcome targets. The first two were an improvement by ten percent in the daily attendance of students and an improvement of thirteen percent in the attendance of teachers. Other indicators dealt with the proportion of students achieving 50 percent or more on national learning assessments at the primary level. This outcome was targeted to move from 30 to 60 percent. At the secondary level the proportion of passes, Grades 1 to 3 in all subjects, was targeted to increase from 56 (in 2007) to 70 percent in 2013. Special targets were set at the secondary level for English and Mathematics passes at Grades 1 to 3, the former was to move from 40% in 2007 to 50% while Mathematics was to move from 23% in 2007 to 40%. There were also some very important deliverables or output indicators. The information given below and in the tables in Part II of the document highlights the progress to date.

- ***Early Childhood Development (ECD)***

*Increase provision of nursery places, especially in remote hinterland regions.* Part of the reason for this initiative was the steady increase in the nursery population in the hinterland regions. This objective was to be achieved by constructing eight (8) new nursery schools and extending 20 primary schools to accommodate nursery classes. To date, ten (10) new schools have been constructed, nine (9) schools have been rehabilitated, and Regions 1, 7, 8 and 9 have added 68 additional nursery classes in Primary schools.

*Emphasize emergent literacy and provide nursery schools with materials.* In the final year of the 2008-2013 ESP, the ECD team conceptualized, created, piloted and published a series of nursery workbooks, readers, and assessment booklets aimed at targeting literacy and numeracy instruction at this level. The team researched models from the Caribbean and further afield for reading programmes and the production of materials to support emergent literacy and numeracy. Based on this research, the team was able to develop culturally relevant materials that reflected best practices for supporting emergent reading, writing, and numeracy. The resulting series, the Roraima Reader Series, consists of class sets of readers for Years 1 and 2 at the nursery level; literacy, numeracy and writing skills workbooks (one each per child); and literacy and numeracy assessment booklets, also one each per child. These materials constitute the first ever locally produced literacy and numeracy workbook series at this level. They release nursery teachers from the laborious, daily task of preparing students' workbooks by hand. The series was piloted in ten schools in the Georgetown and Region 4 education districts and, based on positive practitioners' feedback, will be introduced nationwide in the 2014-2018 plan period. A new five-day instructional plan, in which learning sessions have been revised to give a more purposeful approach to Shared Reading, Guided Reading, the Language Experience Approach and Mathematics, builds on the Roraima initiative.

In the spirit of being more empirically grounded and analytical in its approach to nursery education, the ECD sector also conceptualized, created, piloted and published the first diagnostic assessment in 2013. The assessment instrument established baseline measures of children's emergent literacy, emergent numeracy, fine motor skills, and, as an indicator of intra –personal and inter- personal awareness, their self-knowledge. The diagnostic instrument was administered at the beginning of one term in the pilot schools and in three control schools and was administered again at the end of the first term in the same pilot and control schools. The pilot schools that were using the new materials and were exposed to the new interventions had significantly better end-of-term results than the control schools. Although limited in scope, the pilot demonstrated the usefulness of the nursery diagnostic assessment. When re-administered at the end of the first term of school, the instrument can also be used to measure teacher effectiveness that can inform decisions about, among other things, further areas of capacity building for teachers.

*Help ECE teachers benefit from expanded teacher certification opportunities.* The proportion of trained teachers at the nursery level increased from 60 percent in the 2008/2009 academic year to 68 percent in the 2011/2012 academic year, indicating that teachers at this level benefitted from expanded certification opportunities. All nursery head teachers in Georgetown have taken advantage of certification opportunities via the Management Certificate programme, and 38

Nursery Field Officers from all education districts have been trained to support colleagues in a cluster of schools. These Nursery Field Officers are Heads of nursery schools, who are assessed as being very good managers and trainers in their own schools, and who were given further training over a two-year period to coach, mentor and supervise colleagues in a cluster of schools around their own school. They visit schools in the cluster periodically to assess their instructional programmes and their internal and external environments and to offer advice as necessary. The Infant Field Officers are also used as resource persons for major training activities and will be used to roll out the new literacy and numeracy materials throughout the country. The major challenge for this cadre is providing support and additional training to teachers in the more remote areas. The distances from one community to another in these areas make the task of Nursery Field Officers, regional education officials, and central ministry personnel extremely difficult. The Ministry will be looking at ways to address this challenge in the next five years. These include training more Nursery Field Officers so that clusters are smaller and budgeting additional funds for their travel for monitoring purposes.

- ***Literacy and Numeracy at Primary Level***

*Use Interactive Radio Instruction (IRI) in Mathematics teaching.* This initiative was implemented in 2008 in grades 1 to 3 classes in primary schools. Schools received radios and CD players so that they could access radio broadcasts or could use the CDs at times convenient to them. Table II.3 in Part II of this document shows an improvement in both hinterland (14 percentage points) and coastal (23 percentage points) regions in the proportion of students scoring 50% and over in Mathematics at the National Grade Six Assessment (NGSA). The IRI programme has led to the need for a review of the Mathematics curriculum for the last three grades of the primary level since the students are now covering more topics in the first three grades.

However, several problems limited the success of the programme. Many regions failed to budget for repairs and replacement after the initial distribution radios and CD players from the Central Ministry. As a result, in some cases the students were doing the programme using only the booklets, or teachers reverted to their original methods of teaching the subject. In some instances teachers did not conduct the “after audio” activities that are an integral part of the lesson plan. Teachers in multi-grade schools found it difficult to implement these activities with classes at different levels. During the March-April 2013 period, the Ministry of Education procured and distributed seven hundred and fifty (750) radios to all primary schools. Regions are now required by the Central Ministry, supported by the Ministry of Finance, to ensure that they budget for an adequate number of functioning sets in schools. This will ensure the availability of the programme in the schools. The Ministry is considering several strategies aimed at improving supervision and monitoring of mathematics at the primary level to ensure that the “after audio” activities are done.

*Implement new literacy methodologies in all schools.* In addition to emphasizing the development of pre-literacy skills at the nursery level, the new literacy methodology, and in particular the literacy hour, was implemented in all primary schools as the strategy for teaching reading at Grades 1 and 2. Literacy standards and benchmarks were developed through the Basic Education Access and Management Support (BEAMS) and CCETT projects. The free

distribution of core textbooks to each student has been a policy since 1976, although there were years when the Ministry was not able to provide each student with a book. The EFA-FTI programme and Government made significant investments in reading textbooks so that each student should be able to have their individual reading book. These books, with the exception of workbooks, are returned by students at the end of the academic year and the Ministry, using an estimate of four years for the life of a book, budgets periodically for replacements. A total of 3,218 primary school teachers (approximately 90% of the primary teaching force) were trained in various literacy methodologies; literacy advisors provided support; and an after-school remediation programme was implemented. A literacy tool kit for the primary level was developed in 2013, but the 2008-2013 ESP did not include funds for its production and distribution. The new ESP will cover these costs. Regional literacy committees have been established in all the coastal regions, and literacy committees have been established in 44 schools.

Another initiative to support the literacy and numeracy programme at the primary level was using the Success-Maker software in 70 primary schools that had computer laboratories to help students who had achieved 50% or less in English and Mathematics at the end of the previous term. These students were placed in a special group that, under the guidance of their teachers, worked with the software. After 100 sessions (about two terms) of Success-Maker, approximately 80% of the group were able to achieve more than 50% in another assessment and were able to be integrated with their peers.

Scores on the literacy component of the National Grade 4 assessment shed some light on the effects of these literacy initiatives. The proportion of pupils who scored below standard in the three components of the assessment has declined by approximately 8% between 2011 and 2013. Results in English at the NGSA in the last two years have shown a small improvement (3%). However, these small improvements did not reach the projected goal of 80% of the students meeting defined grade level standards in literacy or English. The major challenges were shortages of Regional Literacy Coordinators and of staff in the central National Literacy Unit and the Innovative Technology Unit. These staff shortages reduced the level of support and monitoring of schools. A major challenge was the number of one-teacher and multi-grade schools in hinterland regions. The absence of the teacher in a single-teacher school essentially means closure of the school for the period the teacher is absent. In addition many of the teachers in the multi-grade schools are untrained teachers. Other challenges were high attendance rates at examinations versus low attendance rates at schools and the resistance of some teachers to change. Low attendance at schools sometimes occurs because of factors exogenous to the system, such as high transportation costs or weather patterns. The Ministry has tried to address the attendance issue in a variety of ways. Boats and buses have been provided to hinterland communities to assist with the transportation of children. The Ministry has continued the community-based school feeding programme. This programme, started with assistance from an EFA-FTI grant, has proved a major factor in improving attendance.

In the MoE's approach to improving literacy education, a great deal of attention has been given to the curriculum, appropriate teaching strategies, materials, and assessment of student performance. The professional development of teachers now needs attention to ensure that



teachers are adequately supported in their efforts to deliver quality education. The new plan period will focus on this issue.

In the last year of the Education Strategic Plan 2008-2013, some changes were made. As reported in the ECD section, materials for emergent literacy and numeracy at the nursery level were developed and produced. At the Primary level, work has begun on a series of reading materials that will consolidate and build on the material produced for the nursery level. These and other initiatives will continue in the new plan period with particular emphasis on hinterland regions. In addition, regional literacy committees have been established in all the coastal regions, and literacy committees have been established in 44 schools.

*Remediation Programme for pupils not meeting the standards.* The MoE introduced a National Remediation Package for pupils in Grade six. The objective was to increase Grade 6 student achievement levels in English and Mathematics so that students would be better prepared to succeed in Grade 7. The target group was those students who had not met the required standards for this level. The package provided materials and detailed instructions on the use of these materials for teachers. In 2012 an overall improvement of 8.5% was seen between pre and post test scores in English and in 2013 the difference was 18.6%. In Mathematics the average improvement between pre and post test scores was 15% in 2012 and 12.3% in 2013. There was no rigorous assessment of the reasons for this change. However, teachers found this package useful and asked for it to be extended to other grades. In response a three tiered level package was compiled to work with pupils at different grades in all primary schools, and this package will be distributed to schools during the new plan period.

▪ ***School/Classroom Environment***

The physical infrastructure of many schools was enhanced during the Education Strategic Plan 2008-2013 period. Nearly G\$2 billion was spent on the maintenance of buildings. Under the EFA-FTI programme special attention was paid to improving sanitary facilities and providing basic utilities such as water and a source of power to hinterland and riverine schools. Under this programme, 122 teachers' houses were built; 43 schools were provided with electricity; and 67 schools had sanitary facilities constructed or rehabilitated. In response to questions on the physical condition of their schools in the MoE 2012/2013 administrative survey, Head Teachers indicated that 74% of schools were in either an average condition (in general fair condition with need for modest repairs) or in an above average condition (in general good condition with minor defects).

In addition to physical improvements, the School Health, Nutrition and HIV&AIDS Unit and the MOE's Community Involvement Specialist, with assistance from PAHO and UNICEF, worked with schools to develop School Health Plans and programmes to help maintain a clean, safe school environment. The Ministry also drafted a Disaster Preparedness Plan as part of a Disaster Preparedness Plan.

Although schools are in better condition than they had been for more than three decades, some regions are not adhering to the standards outlined in the building standards of the Ministry of

Education. Some have not implemented a systematic preventive maintenance plan. These are issues that will be addressed in the next five years.

*Adopt child-friendly methodologies with emphasis on multi-grade teaching in primary schools.* In the penultimate year of the 2008-2013ESP, UNICEF assisted the MoE in developing a more systematic approach to assessing the extent to which schools can be described as child-friendly. This was done by recruiting Child-Friendly Monitoring Officers, who, along with inputs from different stakeholders, reviewed and revised the existing assessment instrument and provided support for this concept through monitoring visits to schools. After being trained on the new instrument, regional teams assessed schools in their regions. They identified for a national review body the most advanced to be considered for certification as child-friendly. The final assessment of the schools was done by a panel of eleven judges comprising officers from within the Ministry of Education, UNICEF, Non-Governmental Organisations (NGOs), Parent-Teacher Association representatives, and an Education Consultant.

Schools were assessed in five (5) main categories that contribute to student learning outcomes. These are: Quality, warm & successful learning environment; Safe physical environmental conditions; Water, school sanitation & hygiene education; Health & Nutrition; Rights, duties and participation. Sixty-four (64) primary schools across the country were assessed and identified as having child-friendly elements. To date 6 schools have attained a child friendly school (CFS) rating of grade 3, meaning a 75% achievement of the standards. One school has attained a rating of Grade 2, indicating achievement of 85% of the standards. This assessment has allowed schools to assess themselves against previous ratings to determine their place in the continuum. This is an on-going process as schools now follow a structured process nationally and aspire to a common goal to demonstrate all components of the CFS ideal.

- ***Universal Secondary Education***

In the 2008-2013 ESP the Ministry adopted the policy that most primary school leavers should have access to a five-year secondary programme with a curriculum that emphasizes mathematics, science and technology. In addition subjects and enrichment activities such as arts, sports and physical education would be offered in 80% of secondary schools. The plan also had a target of equipping all secondary schools with computer laboratories.

*Increase access.* During the plan period, all Community High Schools (CHS)--schools with four-year programmes--were converted to General Secondary Schools (GSS). In addition, eight new secondary schools (two more than had been planned for) were constructed in Regions 2, 3, 4, 5, and 7. Over 400 new dormitory places were provided in Regions 1, 2, and 9 for students who required this facility. Thirty-one (31) Secondary Departments of Primary Schools were amalgamated into discreet secondary schools. Although this amalgamation increased the system's efficiency, better facilities seem to have had a positive effect on boys' retention in school.

*Increase science participation and performance.* The number of students doing the single sciences at the CXC examinations for the secondary level more than doubled, going from an average of 689 students in 2008 to 1,471 students in 2013, and the proportion of students gaining

Grades 1 to 3 remained at over 60%.<sup>5</sup> During the last five years interest in Science has been stimulated through stakeholder consultations on Science education, Science conferences, the regular holding of Science Fairs, development of educational materials in different formats (e.g. DVDs/CDs) on climate change and biodiversity awareness, and the adaptation of UNESCO micro-science materials. Science laboratories were established in 18 secondary schools and, with assistance from UNESCO, micro-science kits were distributed to 40 secondary schools. The Ministry was very conscious that an interest in Science must be encouraged at the earlier levels. To this end it has introduced Inquiry Based Science Education (IBSE) on a pilot basis in ten primary schools in six regions in grades 5 and 6. An evaluation will be conducted during this new plan period to inform the expansion of IBSE in primary schools nation-wide. Teacher training workshops have been held on IBSE, and approximately 1,860 teachers have participated to date.

*Improve access to Information and Communication Technology (ICT).* The MoE made significant progress over the past five years in providing access to ICT resources for students of secondary schools in Guyana. At the beginning of the last strategic plan period, 2008, only a few schools had computer laboratories. These were often equipped through donations or support from PTAs or Old Students' Associations. The physical infrastructure was often inadequate--inappropriate furniture and a lack of cooling, electrical power, security or network cabling. By 2013 ninety-five percent (104) of secondary schools had a computer laboratory with designs that allowed for the proper functioning of a computer network. This includes provision of a refurbished space, customized furniture, and other facilities that were previously lacking, such as a wired local area network. Students were provided with student workstations, a server, a printer, power protection devices and a projector. The MoE has developed an ICT Competency Framework for teachers. Over 7,000 teachers from all levels of the school system have already been exposed to the first level of IT literacy training.

The data show a significant increase in the number of secondary school leavers who have some level of ICT competency. In 2008 only 1,842 students wrote an IT related subject for the CXC examinations. In 2013 that number was 4,200.

On a less positive note, schools received disparate ratios of computers to students because of annual budgetary constraints. Some ICT laboratories have 30 computers while others received only 15 computers. This has created scheduling problems for schools and reduced the impact of ICT laboratories. There has also been a lack of resources for infusing technology into the delivery of other subject areas, and schools lack interactive projectors or computer devices that can be taken into any classroom to enrich the learning experience.

*Increase Allied Arts and Sports offerings.* Most secondary schools now offer one or more subjects in the area of Arts, Sports and Physical Education. This was supported by the infusion of Physical Education and Sports into subjects such as Biology and Health and Family Life Education (HFLE). Theatre Arts was introduced into secondary education, and 22 teachers were trained to teach this subject at the Caribbean Secondary Education Certificate level. The number

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<sup>5</sup>Passes for the CSEC are graded from Grades 1 to 5, with 1 being the highest grade. Entry into a tertiary programme, e.g., the university or the teacher training college, requires a pass in at least five subjects, including Mathematics and English, with a grade no higher than 3.

of students doing Visual Arts, Theatre Arts and Physical Education for the CXC examinations while small, is growing steadily. In 2008 approximately 533 students wrote subjects in the expressive arts and physical education. In 2013 this number had doubled to 1,371 students writing these subjects. The proportion of students gaining Grades 1 to 3 is over seventy percent.

- ***Technical and Vocational Education and Training (TVET) or Education and the World of work***

The sector has made notable strides in TVET between 2008 and 2013. It pursued a paradigm shift from the traditional TVET to competency-based programmes, geared at making TVET more relevant to a technologically advancing society. The reforms included the piloting of Caribbean Vocational Qualification (CVQ) and Competency-Based Education and Training (CBET) in eight out of the ten TVET institutions. The Basic Competency Certificate Programme (BCCP) was revitalized in 2010 and is now called the Secondary Competency Certificate Programme (SCCP). This programme, which utilizes the CBET mode of training, was initially rolled out into 22 Secondary Schools and 7 Practical Instruction Centers (PICs). By 2013 this programme was offered in 50 Secondary Schools and 10 PICs in all Regions, except Region 9. These changes resulted in over 2000 students graduating from the SCCP programme. Most TVET institutions were equipped with functioning computer laboratories, and all students are exposed to Basic Computer Science. Over half of the institutions have at least three teachers who are using ICT in the classrooms. The MOE intends to expand these programmes through training, institutionalizing SCCP/CVQ, introducing more electives to the programmes, and other initiatives.

To expand access to the new TVET approach, two new post-secondary institutions were constructed (Leonora and Mahaicony). Existing institutions are at various levels of upgrade and re-tooling to facilitate these programmes.

- ***Teacher Education: Improving the number and quality of trained teachers***

The proportion of trained teachers in the system increased from 58% at the beginning of the 2008 ESP period to the target of 70% set for the end of the plan period. The MoE implemented the Guyana Improving Teacher Education Project (GITEP). The GITEP aims to improve the quality of teachers by focusing on improving the qualifications and capacity of teacher-educators, improving the quality and structure of programmes offered at the Cyril Potter College of Education (CPCE), and ensuring that the new Associate Degree in Education (ADE) programme is well articulated with the Bachelors in Education programme offered by the University of Guyana. All graduates of the pre-service ADE programme have to go through an induction year during which they are monitored and supported by officers of the Ministry.

GITEP provided lap tops and notebooks at subsidized cost to the lecturers and teacher trainees in order to integrate the use of technology into the programme. It is expected that graduates of the programme will leave the College with the basic computer skills as well as some skill in using the technology to support their delivery of education.

Since its inception the National Centre for Education Resource Department (NCERD) has been the main agency for providing continued professional development (CPD) of practicing teachers and school administrators. It modified its approach to CPD in the 2008-2013 implementation period. NCERD had previously designed all training programmes and identified the participants. In the 2008-2013 period NCERD offered about 30 CPD courses whose substance reflected the views of surveyed teachers. Teachers could choose among these courses. They earned credits that could enhance their promotional opportunities. The EFA-FTI programme initially funded the development and implementation of these CPD courses, but they have now become a regular part of NCERD's annual work programme. On average, 500 teachers have accessed these courses annually. One problem that still remains, however, is the shortage of trained teachers in subject areas such as Mathematics and Science. A significant number of the teachers teaching these subjects at the secondary level, especially those teaching Mathematics, majored in other subject areas. The Ministry will be implementing a programme over the next five years that will focus intensively on improving the knowledge and skills of teachers in this subject area.

- ***Special Education Needs (SEN)***

The MoE took some major steps to alleviate the challenges faced by students who have some type of disability. These steps included completing a draft national inclusion policy, appointing a national SEN Coordinator, and, in some regions, appointing persons with specific responsibilities for coordinating SEN and screening programs. The intent of these programs is to identify children with disabilities who are not in school and, where possible, to bring them into the school system. The School Health Unit supported the work of the SEN unit through its screening programmes to identify students with hearing and visual disabilities. In terms of human resources, a basic SEN module/ foundation programme is now offered by the CPCE that is compulsory for nursery and primary trainees. An on-the-job training programme of SEN teachers, especially those from special schools, is being implemented by the SEN unit at NCERD. MoE also strengthened its relationship with NGOs that represented persons with disabilities. It supported education programmes for persons with disabilities (mainly hearing and visually impaired) run by two of these organisations. Through its capital programme the MoE has constructed a state-of-the art facility to house a special school for children with serious and/or multiple disabilities.

A review of the system nonetheless shows that much remains to be done before the MoE can realize the objective of offering a quality education to students with disabilities. Some critical deficiencies are shortages of specialized SEN teachers and quality teaching learning processes and environments and limited access to basic work and life skills programmes, particularly at the post-secondary level.

- ***Support Programmes***

The Ministry of Education has recognized that societal conditions pose some of the most formidable challenges to the effective delivery of education. During the preparatory period of the 2008-2013 ESP, the emerging and most pressing issues were increasing HIV/AIDS infections, substance and sexual abuse, increasing violence in schools, and the development of gangs. It therefore made dedicated efforts in the 2008-2013 period to strengthen its support to vulnerable

students and their families. The support programmes are the School Health, Nutrition, HIV/AIDS; Health and Family Life Education (HFLE); and the Schools Welfare and Guidance units.

*School Health, Nutrition, HIV&AIDS (SHN and HIV/AIDS).* In response to the rising challenge of HIV/AIDS and other health issues, the MoE instituted a robust policy to give direction and dedicated space for structured programming across schools. A SHN and HIV/AIDS policy was disseminated in 2009. The main areas and some sub-sections covered by the policy were: roles and responsibilities of different stakeholders involved in SHN and HIV prevention; life skills-based health education; Safe and Sanitary School environments, including a section on creating an environment free of stigma; School Health and Nutrition services, which included care and treatment for employees and students infected with HIV; and Health, Nutrition and HIV/AIDS-related school policies, such as confidential testing and disclosure of HIV/AIDS.

Some of the activities of the School Health, Nutrition and HIV&AIDS unit have been outlined under the sections on Child Friendly Schools and Special Education Needs. In collaboration with the Ministries of Health and Home Affairs and with non-governmental organisations (NGO), training was conducted in basic first aid and disaster preparedness for teachers and parents. The Unit, through the HIV&AIDS officer, continued to train and sensitize head teachers, teachers and sector management staff on issues related to HIV&AIDS. It also provided support for persons in the sector infected or affected by HIV&AIDS.

*Health and Family Life Education (HFLE).* The HFLE Programme has been implemented by the MoE during two plan periods and benefitted from technical and financial support from several development partners. Responding to the CARICOM HFLE curriculum, the MoE devised a comprehensive life skills programme to provide the foundation for building the ideal Guyanese/Caribbean/World citizen. The life skills emphasized in Guyana are (1) social and interpersonal skills, such as communication, refusal, assertiveness, and empathy; (2) cognitive skills, such as decision-making, critical thinking and self-evaluation skills; and (3) emotional coping skills, such as self-awareness, self-control, and conflict resolution. The Ministry had been dissatisfied with the implementation strategies (integrated into other subject areas) used for nearly a decade. Thus, it piloted HFLE as a stand-alone subject in 30 secondary schools in 2010. This initiative has since been rolled out to the remaining secondary schools. In 2013 the UNICEF-supported evaluation of HFLE as a timetabled subject revealed that if the intervention is to have greater positive impact, much more work needs to be done in the area of teacher training; learning materials; teacher attitudes towards sensitive topics; parental involvement; whole school approach; and effective referral systems. Though the impact so far has been marginal, implementing the necessary corrective measures may increase the positive results. This will be a priority in the new strategic plan.

*School Welfare Programme.* Assistance to parents to buy uniforms for their children has been in place for the last five years. After donor assistance ceased, Government assumed the cost of a school feeding programme with an annual cost of over G\$1billion. Subsidies to help students pay examination fees have increased because of the larger number of children sitting the regional CSEC examinations. The School Welfare Unit has developed indicators for characterizing and locating actual and potential exclusion; identified barriers to inclusion; and proposed strategies to

remove barriers. These strategies have been coupled with capacity building programmes, chief of which is the Masters programme in Counseling and Trauma Sensitive interventions. A new focus on schools welfare programming has emerged and 15 beneficiaries of this programme can now coach peers in expressive arts therapy and conduct parent education programmes. These new perspectives pave the way for embracing and sustaining a robust child protection system in all schools and narrowing the gap for out-of-school children.

- ***Education Television Channel***

One unplanned accomplishment in the last plan period was the creation of an education television channel. The Learning Channel was established in 2011. It has targeted children of almost all ages, as well as adults, including teachers. It offers purely educational programmes 24 hours daily. The Learning Channel has moved from reaching only a few areas in Guyana to more than 16 locations, touching all regions, even remote hinterland ones. The major limitation to its reach at this time would be access to a television and a source of power in some of these communities. The MoE feels that the Channel has not reached its full potential. It boasts a fair amount of local programming and continues to seek to produce a higher percentage of local programmes. This will happen incrementally in the next few years with an emphasis on programmes that will support the delivery of the curriculum at various levels. It is expected to be particularly useful in supporting untrained teachers through the production of model lessons that can be used not only to deliver content, but also to show the teachers ways in which they can improve their teaching methodologies.

## **PART II - Current Performance of Guyana's Education Sector**

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This ESP is based on a diagnosis of the performance of the sector on outcomes. Four types of outcomes were evaluated. These outcomes are sought by education systems throughout the world even when countries' education systems and their reform priorities differ. These are:

- High enrollment rates in nursery, primary education and secondary education and to a lesser extent at the post-secondary and tertiary levels. Enrolment goals for post-secondary TVET and university education depend on a country's level of economic development. However, even in developing countries such as Guyana, the proportion of the population expected to proceed to post-secondary and tertiary education continues to increase.
- Good learning achievements, especially for literacy, mathematics, and science, with an increasing percent of students scoring at advanced levels.
- High levels of internal efficiency (high attendance rates, low repetition rates, low dropout rates, high completion rates for each level of education)
- High levels of equity (low differences on enrolment rates, learning scores, and internal efficiency rates between sub groups of students)

The tables below show the performance of Guyana on three of these outcomes, but not on enrolment rates. There are two major indicators for enrolment rates: Gross Enrolment Rate (GER)<sup>6</sup> and Net Enrolment Rate (NER)<sup>7</sup>. Calculating both of these rates requires age-specific population data. Although a census was conducted in 2012, the last actual census data available to the MoE is from the 2002 census. The Bureau of Statistics (BoS) provided estimates of the population in the inter-census years up to 2010, but a two-fold problem remains: 1) the margin of error is greater the further the year is from the actual census year, and 2) there are no estimates available after 2010. Enrolment rates therefore could not be calculated with any acceptable degree of accuracy because of the unavailability of recent population data. Despite these caveats, the data suggest that Guyana is approaching respectable enrollment rates at each level of education.

The MoE will be able to obtain firmer estimates of enrollment rates as soon as the new census data become available. These calculations will also benefit from the Multiple Indicator Cluster Survey (MICS) that is being conducted by BoS with the support of UNICEF.

Tables II.1 and II.2 show the most recent data for measures of internal efficiency by level of education. A comparison of these data with data for 2008 reveals that there is still cause for concern about the level of attendance both for hinterland and coastal schools. One of the targets

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<sup>6</sup>Definition of GER – Total enrolment in a specific level of education, regardless of age, expressed as a percentage of the official school-age population at the same level in a given academic year.

<sup>7</sup>Definition of NER – Enrolment of the official age-group for a given level of education expressed as a percentage of the corresponding population.



in the previous ESP was a ten percent improvement in attendance. However, the most recent data show little change in attendance rates at the nursery and secondary levels, with only a small increase of approximately three percent at the primary level. Further analysis of the data shows that on average the rates in the coastal regions were slightly higher than those of the hinterland regions.

Table II.2 shows that girls had slightly higher attendance rates than boys, especially at the secondary level. However, the hinterland-coastal differences reported in Table II.2 are essentially unaffected by gender--both boys and girls in coastal schools show slightly better attendance than boys and girls in hinterland schools.

**Table II.1.** Measures of internal efficiency for Hinterland versus Coastal Regions

Education level	Key sector outcome indicators					
	Attendance		Repetition <sup>1</sup>		Dropout <sup>2</sup>	
	Hinterland	Coastal	Hinterland	Coastal	Hinterland	Coastal
Nursery	72%	74%	NA	NA	NA	NA
Primary	77%	79%	NA	NA	4%	3%
Secondary	71%	73%	NA	NA	7%	7%

*Data Source: Annual Statistical Questionnaires 2012-2013.*

<sup>1</sup>The nursery level has never had repetition. In 2010 the MoE eliminated repetition in public schools for other levels, rendering the concept inapplicable for the academic year 2010 to date.

<sup>2</sup>Dropout information 2011-2012

**Table II.2.** Measures of internal efficiency by gender and Hinterland versus Coastal regions

Education level	Key sector outcome indicators											
	Attendance				Repetition <sup>1</sup>				Dropout <sup>2</sup>			
	Hinterland		Coastal		Hinterland		Coastal		Hinterland		Coastal	
	F <sup>3</sup>	M	F	M	F	M	F	M	F	M	F	M
Nursery	73%	71%	75%	74%	NA	NA	NA	NA	NA	NA	NA	NA
Primary	78%	77%	80%	78%	NA	NA	NA	NA	3%	4%	3%	3%
Secondary	74%	68%	76%	70%	NA	NA	NA	NA	7%	7%	5%	8%

*Data source: Annual Statistical Questionnaires 2012-2013.*

<sup>1</sup>The nursery level has never had repetition. In 2010 the MoE eliminated repetition in public schools for other levels, rendering the concept inapplicable for the academic year 2010 to date.

<sup>2</sup>Dropout information 2011-2012.

<sup>3</sup>F = female students; M = male students

As indicated in the notes to the Table II.1 a policy of automatic promotion was initiated in 2010. In the year prior to this repetition at the primary level was one percent nationally, and repetition

only occurred in hinterland regions. At the secondary level it was eleven percent nationally with the rate in hinterland regions being 6% and in coastal regions, 12%.

Tables II.3, II.4, and II.5 show the results of the exit examinations at the primary and secondary levels. One major conclusion emerges from analyses of these results: *the average performance in the coastal regions was significantly higher than in the hinterland regions*. Specifically, Table II.3, which highlights the Grade six assessment results for 2009 versus 2013, shows regional differences for the three subjects analyzed: Mathematics, English, and Science. Relative to 2009, the results for 2013 show an increase of 20 percentage points nationally in the proportion of students scoring 50% and over in mathematics. However, the increase in the hinterland regions was 11 percentage points compared to 23 points in the coastal regions. The improvement in English was lower generally (four percentage points nationally), but again the improvement in the coastal regions was slightly better (5 percentage points compared to 2 percentage points for hinterland regions). In Science the overall improvement was 6 percentage points, with hinterland regions improving by 4 percentage points and coastal regions by 7 percentage points.

Table II.4 shows regional patterns for the CSEC examinations in English and Mathematics that are similar to the results for these subjects in the Grade 6 assessments. While the percentage passes increased for English in both types of regions, the results for mathematics remained at the same level or, in the case of the hinterland regions, actually dropped. The hinterland/coastal disparities may be attributable in part to a much smaller percentage of trained teachers (about 20 to 40 percent less) at the various levels in hinterland schools, and less access to supervisory support and supportive education materials and equipment.

Table II.5 shows the actual number of subjects in which both male and female students took CSEC examinations and the proportion, shown in brackets, who attained grades 1 to 3. The table reveals that there was little difference in performance by gender when all subjects are taken into account in 2008 and 2013, with the proportion of passes at Grades 1 to 3 being 60% for both males and females. It is noteworthy that in 2013 both the number of students taking the CXC examinations and the number of subjects for which they sat the examinations increased markedly relative to 2008. In 2008 many students would have been in Community High Schools or in the Secondary Department of Primary schools and would not have been considered for these examinations. In spite of the disappointing Mathematics and English results, it is no small achievement that the proportion of subjects passed at Grades 1 to 3 remained at 60%.

To reduce the disparity in performance between the hinterland and coastal regions, the Ministry will look very carefully at its teacher preparation, curriculum materials, and access to supportive materials and services. . It will also pay special attention to any gender disparities in performance and take action to reduce them

The Ministry of Education, with assistance from UNICEF, has conducted a survey in the regions to determine the number of children with special education needs (SEN). This information must be enhanced by the new census data and by data gathered by the National Commission on Disability. However, until the information from these sources is tabulated and analyzed, it is not possible to calculate the enrollment rates or any of the other indicators.

Table II.6 uses an “environmental scan” of the SEN situation to arrive at gross estimates of the status of these groups on the three outcome measures. It is in fact difficult to generalize about this group because children with SEN, even among children with the same disability, differ considerably. Based on previous surveys, and on information from the work now being done, many children with disabilities are not enrolled in any type of education. The rate of attendance at the first two levels is not very high. Although in recent years attendance at some special education institutions has increased to about 70%, on average students’ attendance is approximately 4 out of the 5 school days in a school week. There are relatively few teachers who are trained to teach children with sensory disabilities (e.g. hearing and visual impairments) or learning challenges such as dyslexia. Thus, learning achievements are expected to be low even when the children are quite intelligent. Those who manage to overcome the shortcomings of the system and to reach post-secondary and tertiary levels tend to perform creditably.

**Table II.3.** Performance on National Grade Six Examination by coastal and hinterland regions

Education level	Key sector outcome indicators								
	National Grade Six Exam(NGSE): Pupils Scoring 50% and Over in Mathematics		National Grade Six Exam(NGSE): Pupils Scoring 50% and Over in English		National Grade Six Exam(NGSE): Pupils Scoring 50% and Over in Science		National Grade Six Exam(NGSE): Pupils Scoring 50% and Over		
	Hinterland	Coastal	Hinterland	Coastal	Hinterland	Coastal	Math	English	Science
Primary - 2013 (MF)	18%	42%	10%	28%	9%	28%	31%	20%	18%
Primary - 2009 (MF)	4%	19%	8%	23%	5%	21%	11%	16%	12%

*Data source:* National Grade Six Examination Analysis 2009 and 2013.

*Note:* MF = male and female students combined.

**Table II.4.** CSEC performance in Mathematics & English for all public secondary schools in the Hinterland and Coastal regions by gender

Education level	Key sector outcome indicators											
	CSEC passes w/Grades 1-3: National				CSEC passes w/Grades 1-3: Mathematics				CSEC passes w/Grades 1-3: English			
	Mathematics		English		Hinterland		Coastal		Hinterland		Coastal	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Secondary (2013)	26%	29%	48%	43%	7%	10%	27%	29%	26%	22%	49%	45%
Secondary (2008)	30%	35%	36%	26%	16%	12%	32%	36%	15%	11%	38%	28%

*Data source:* CSEC Guyana Results 2008, & 2013.

**Table II.5.** CSEC performance in all subjects for all public secondary schools by gender

Education level	Key sector outcome indicators		
	CSEC passes w/Grades 1-3 in all subjects (National)		
	Girls & Boys	Girls	Boys
Secondary ( 2013)	58,040 (60%)	35,843 (60%)	22197 (60%)
Secondary (2008)	39,057 (60%)	24,193 (60%)	14,864 (59%)

*Data source: CSEC Guyana Results 2008 and 2013.*

**Table II.6.** Estimates of the current status for special education needs children on key outcomes by level of education

Education level	Key sector outcome indicators		
	Participation in school	Internal efficiency (attendance, repetition, dropout rates)	Learning achievements
Nursery	Low	High	Low to average
Primary	Low	High	Low to average
Secondary	Low	Low	Low
TVET	Very Low	Low	Average
University	Very Low	Low	Average
Adult literacy	Not applicable	Not applicable	

*Data source: Planning Unit Data..*

In conclusion, although enrollment rates cannot be credibly estimated until the new census data on the size of the population by age have been released, Guyana seems to have achieved respectable rates at the different levels of education. Although there have been improvements in learning outcomes, all levels and all sub-groups evidence weak learning outcomes, especially in English and Mathematics for coastal students and in all subjects for students in the hinterland.

## PART III - Priorities for 2014-2018

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### Education priorities

In the last decade Guyana has made significant progress in access to education at all levels, increasing the proportion of trained teachers, providing more access to interactive technology, in particular computers, and upgrading physical facilities. While there is still room for improvement in all of these areas, some of which will be addressed during this plan, **the emphasis in this plan is on improving the quality of education.**

On the basis of consultations with a variety of stakeholders both within and outside of the Ministry of Education, the strategy for 2014-18 has two priorities: **1) increase learning outcomes for all levels of education and all sub-groups;** and **2) decrease the differences in learning outcomes between sub-groups, especially between students in coastal and hinterland schools.** The learning outcomes of primary concern are literacy and numeracy, followed by science and technology.

The weak learning outcomes evidenced in the previous tables exact substantial costs for Guyanese graduates, their families, and the nation. Education affects graduates' economic outcomes (their employment chances and wages) and the nation's economic growth rates through the knowledge and skills that students acquire in school, not through the years of schooling that they complete.<sup>8</sup>

This Education Strategic Plan has these two priorities for 2014-2018 because all those managing successful change in private and public organizations stress how important it is to establish a clear **FOCUS**. The lessons learnt in Guyana also imply that, if we are to see significant improvement, the strategy must be protected from becoming overloaded, fragmented, and unmanageable.

As a result of the MoE's very inclusive consultations with stakeholders, different stakeholders may expect the ESP to place a priority on their specific concerns. The Ministry feels that, by selecting the objectives of increasing learning achievements for all sub-groups at all levels of education, it has focused on the priorities identified by the majority of stakeholders. Analyses of recent trends in the tables on achievement in Part II certainly confirm stakeholders' concerns about learning outcomes.

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<sup>8</sup> Hanushek and Woessmann (2007 and 2009) find that differences in growth rates between countries are completely described by differences in the population's acquisition of cognitive skills. The years of schooling completed were unrelated to differences in growth rates.

## Implementation capacity priorities

The Ministry of Education recognizes that a strategy is as good (or as bad) as the design of the strategy itself and the capacities of those organizations and groups responsible for implementing it. It is therefore critical to assess whether those responsible for implementing Guyana's 2014-2018 ESP have the capacities that they need to achieve its objectives.

Three factors seem to determine whether organizational performance is good or weak: human capacity, organizational capacity, and the "rules of the game"-- the incentives--that shape individuals' choices.

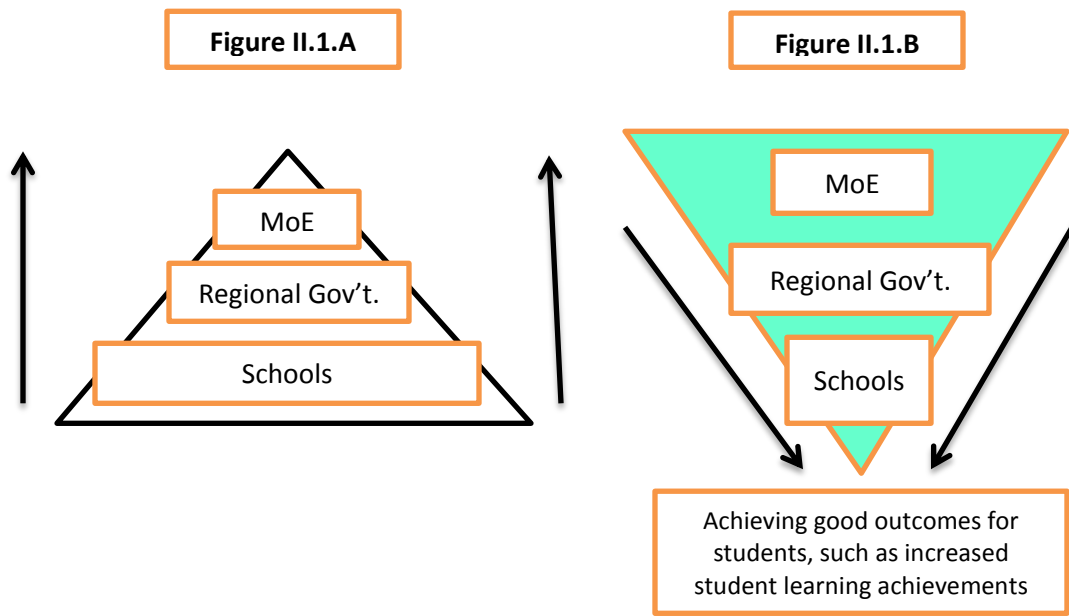
1. **Human capital:** is the stock of an individual's cognitive abilities and competencies, knowledge, and social and personality attributes such as teamwork and creativity. This stock defines the person's ability to perform labor that yields economic value. In the context of the provision of public services, it is the stock of individuals with skills to analyze development needs; design and implement strategies, policies, and programmes; deliver services; and monitor results. When human capital shortfalls are a problem, different criteria for selecting staff, not training, may be the answer.
2. **Organizational capacity:** Organizations are groups of players bound by some common purpose to achieve objectives. Organizations have internal structures, processes, systems such as databases, staffing, allocations of responsibilities, budgets, and buildings to achieve their objectives. Poor performance often indicates a dysfunctional organization - -for example, an inappropriate, muddled, or overlapping allocation of responsibilities or resources that are poorly aligned with responsibilities.
3. **Institutional capacity:** "Institutions" are the formal rules and informal norms within which organisations and people operate. Examples of formal rules are a country's constitution, laws such as the Education Act, or public service directives requiring reporting on the use of public resources.

There can also be informal rules--unwritten norms that everyone understands that influence the operation of an organisation. An example of such a norm in an education system may be the preference given to appointing Head Teachers for schools from among teachers with the longest years of service as opposed to those best qualified to hold these posts.

Whether formal or informal, the rules of the game are the humanly devised and socially shared parameters that provide the framework of incentives within which organizations and people operate. All too often employees in an organization have to work under perverse incentives, and sometimes changing the incentives--and doing nothing else--can produce better performances by individuals and organizations.

Figure III.1 contrasts the effects of different incentive regimes. Panel A illustrates the focus of attention when the sector's incentives reward individuals who please those "above".

**Figure III.1. Where do the sector's incentives focus the attention and effort of its players?**



In this case the focus is not on what should be the point of the sector-- achieving good outcomes for students. Panel B shows how the focus of attention changes when incentives are structured to reward all players in the sector for focusing on good outcomes for students.

A proper organizational audit of key units in Guyana's education sector is proposed to assess those capacities of departments that will affect their implementation of those activities in the new ESP are under their jurisdiction. This audit is the first strategic activity identified in Part V.

Findings of the audit will undoubtedly affect the implementation of the ESP. The initiation of an intervention may be deferred until the implementing unit has acquired the capacities that it needs to manage the intervention properly. Alternatively, the design of an intervention may be restructured to reduce the capacity demands on the implementing unit.

In the first two years of the 2008-2013 plan, there was a major reorganization of the central ministry based on an internal audit of the weaknesses and strengths of the system and on the emergence of new challenges within the sector. The Monitoring Evaluation Reporting and Development, the Policy Implementation and Monitoring and the School Health, Nutrition, HIV/AIDS units were created and the School Welfare and Guidance and Counseling units were strengthened. There is therefore some experience and a recognition that an audit and capacity building activities can be carried out without all activities coming to a halt.



## PART IV - Increasing Learning Outcomes: Models of Change

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This section is based on reviews of the most rigorous international evaluations available about those factors that have been found to raise students' learning outcomes. Where possible, these evaluations are for developing countries. Guyana's current legal and administrative arrangements may not allow it to change all of these factors immediately, but the MoE wishes to focus on most of these factors in its 2014-2018 ESP.

Figure IV.1 identifies three system-level enabling conditions that indirectly affect students' learning outcomes and four factors or inputs at the school level that directly increase students' learning outcomes because they increase the quality and the amount of time that students spend in learning. The system-level and school-level factors were selected on the basis of the findings of high quality studies. More technical and theoretical information about the research evidence behind the selection of these factors appears in the End Notes.

The three system-level enabling conditions are:

- Those responsible for delivering educational services have the capacities to improve learning outcomes. Part II identified the capacities required: appropriate human capital, well-structured and adequately resourced organizations, and the incentives to focus on increasing students' learning achievements.
- An accountability system An accountability system creates incentives for students, teachers, schools, and the regional and national departments of the MoE to work harder to achieve better learning results. This system includes using exit examinations and learning assessments to measure learning results. The accountability system creates incentives that affect how inputs to learning are provided and used.
- Limited autonomy for schools. Schools with limited autonomy--over process and personnel decisions--have better learning outcomes.

The four input factors are:

- The quality of facilities.
- The quality of teaching.
- The quality of the curriculum and the availability and quality of teaching and learning tools for students and teachers (e.g., textbooks, teacher guides, and libraries).
- The amount of time that students spend learning during the school year. For example, when students or teachers are absent from school, learning does not occur.

**Those delivering educational services have the capacities needed to improve students' learning outcomes**

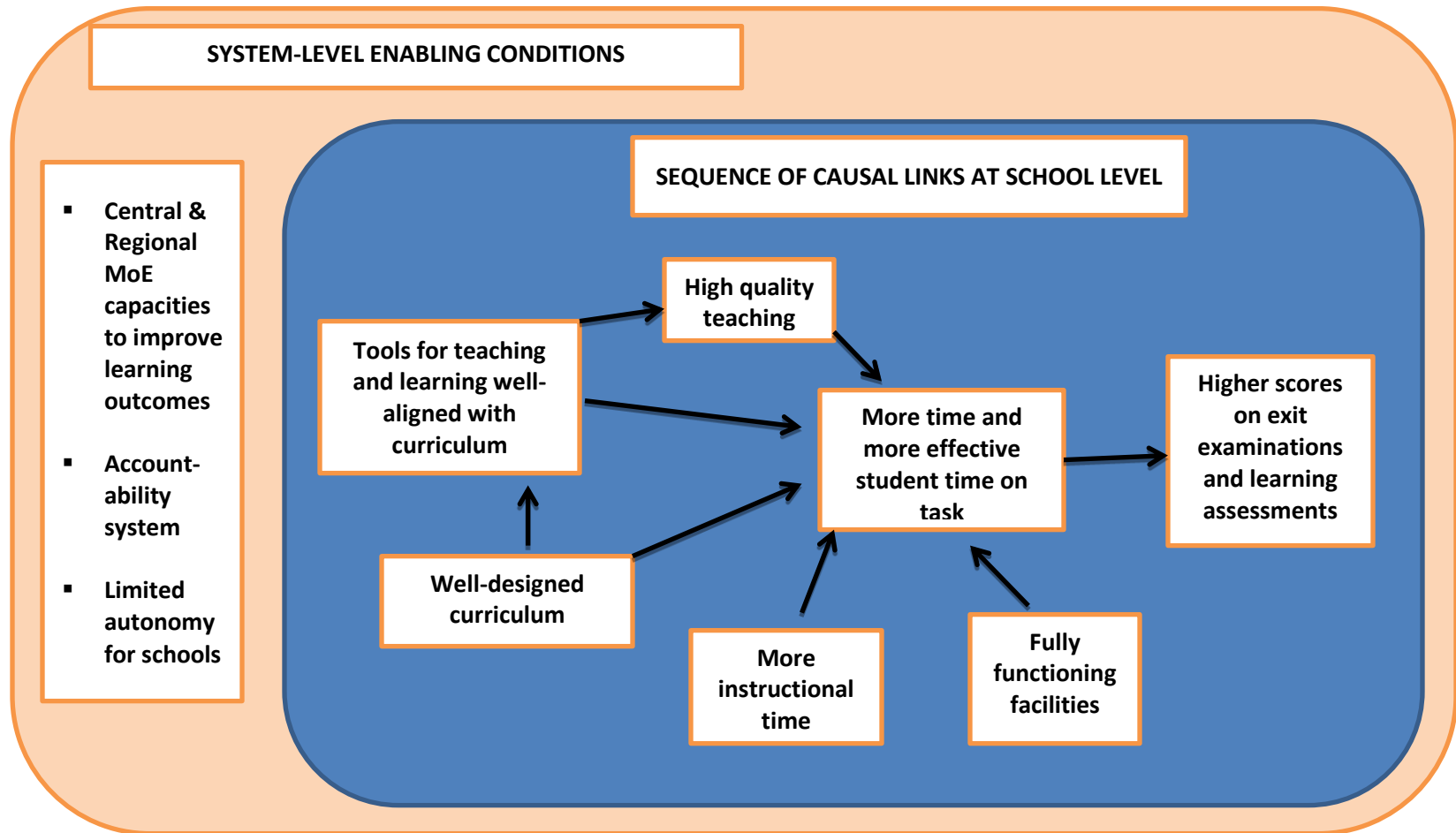
This system-level factor is a pre-condition for any reform of an educational system, regardless of the intent of the reform. No progress on student learning will happen:

- If the individuals charged with delivering educational services--whether these are staff within the central or regional Ministry departments, NGOs, or contractors--do not have the skills, knowledge, or incentives to improve student learning; and/or
- If the organizations within which they work are not structured and resourced to make effective use of their skills and commitment to improving learning outcomes.<sup>9</sup>

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<sup>9</sup> The establishment of the Innovative Technology, Science and Special Needs units as special units within NCERD in the previous plan period was in recognition of the need to strengthen service delivery in these subject areas.

Figure IV.1. IN-SCHOOL AND SYSTEM-LEVEL DETERMINANTS OF IMPROVED LEARNING OUTCOMES



## Accountability system that focuses on learning outcomes

Accountability arrangements consist of achievement standards, measures of student achievement, and consequences for measured achievement. These consequences may be positive (rewards) or negative (sanctions), and they may be implicit (e.g. the respect of peers) or explicit (e.g. cash bonuses). They may apply to any stakeholder in the education process, including students, teachers, and schools.<sup>a</sup>

Based on analyses of OECD's PISA database for 2003 for about 220 thousand students, over 8000 schools, and 29 countries, Woessmann et al. (2008) found the results reported in Table IV.1. This table lists different accountability measures and shows whose behaviors are expected to be affected by a given intervention.<sup>b</sup> It reports the effects of each intervention on learning achievements. The study<sup>10</sup> found that the combined effects of the first five accountability measures, when measured at the school level, increase student learning achievements by more than one and a half grade-level equivalents.<sup>c</sup>

**Table IV.1.** Accountability devices, players targeted, and effects on learning

Accountability devices	Who is held accountable	Rank order of effects on learning achievements <sup>1</sup>
External exit examinations	Students, teachers, schools	1
Results of regular learning assessments are used to make decisions about students' retention/ promotion	Students	2
Monitoring of teacher lessons by head teacher	Teachers	3
Monitoring of teacher lessons by external inspectors	Teachers	4
Results of learning assessments are used to compare school to district or national performance--Published school report cards	Schools, teachers, and students	5
Results of learning assessments are used to compare national performance to the learning performance of neighboring countries or other comparators--national report cards <sup>2</sup>	Central government primarily, but also schools	Not measured

*Data source:* Woessmann et al. (2008), pp.24-31

<sup>1</sup> The device rated 1 had the largest effect; the one rated 5, the smallest

<sup>2</sup> This study did not measure the effects of the last device listed in table IV.1: a comparison of the nation's learning performance with the performances of neighboring countries or other comparators.

Table IV.1 also shows which accountability devices had bigger effects on student learning than others. External exit examinations, which in Guyana include the CSEC and grade 6 learning assessment, have the greatest effect. Relative to head teachers' monitoring of teachers' lessons, external exit examinations have about three times the effect on students' learning achievements. Using the results of learning assessments to decide whether to promote or retain a student in grade had about twice the effect on achievement as head teachers' monitoring.<sup>d</sup> Head teachers' monitoring has about twice the effect of school report cards. All of these devices provide

<sup>10</sup> Woessmann et al. (2008).

information for beneficiaries who should press for better performance on the part of those delivering educational services. These include parents, PTAs, and civil society.

### **Limited autonomy for schools**

Studies of the effects of school autonomy<sup>e</sup> on students' achievement outcomes find that students perform significantly better in those schools that have autonomy in some process and personnel decisions.<sup>11</sup> These decisions include such areas as the purchase of supplies and budget allocations within the school, hiring and rewarding teachers (within a given budget), and choosing textbooks and instructional methods. The positive performance effects of school autonomy in these kinds of decision-making areas are also found in international tests in primary school.<sup>12</sup>

In Guyana the provision of grants to schools to purchase janitorial and office supplies, field materials (chalk, cardboard, markers, chemicals etc.), and security grants has given some autonomy to schools. School improvement grants for schools that have produced credible SIPs have expanded these grants. These funds are managed by the School Improvement Action Committees, comprised of representatives of parents, teachers, students (in secondary schools), and the wider community.

### **Quality of school facilities**

Good quality facilities raise students' learning test scores.<sup>f,13</sup> Although the availability of electricity was not found to have much effect on learning, schools that had desks, tables, and chairs and good quality school walls, roofs, and ceilings were found to have strong effects on student learning.

A quality school facility is usually defined to include proper sanitation and water, aspects of school infrastructure unmeasured in the studies reviewed. It can be predicted that proper sanitation increases the time in school and thus, potentially, learning gains. It increases the attendance rates of both teachers and students, especially of girls. It reduces the disease burden and thus missed school days.

In recognition of the importance of good physical facilities the MoE in Ganduyana has established clear standards for schools in its "Manual of Non-academic Standards" and in addition to the improvements in physical facilities and the expansion of basic utilities in the last five years; it has provided basic training for many school administrators and PTAs in preventative maintenance.

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<sup>11</sup>Woessmann, 2001 and 2003; Fuchs and Woessmann, 2007.

<sup>12</sup>Fuchs and Woessmann, 2007.

<sup>13</sup>Glewwe et al, 2011.

## Quality of teaching

Rigorous studies show that teachers vary in the quality of their teaching and that this variation matters for students' learning outcomes.<sup>g</sup>

An effective teacher produces larger learning gains in mathematics than in reading and larger learning gains for students in low socio-economic status (SES) schools than for students in high SES schools. Both of these results plausibly reflect greater opportunities for teachers to affect learning and should generalize to education systems across the world. Mathematics is mostly learned in school and thus can be more directly influenced by teachers. Reading, on the other hand, is more likely to be learned (in part) outside of school, and thus the influence of school and teacher on reading is smaller. Similarly, students in schools with a large share of students from poor families (low SES schools) are more dependent on school for their learning than students in schools with a large share of students from wealthier families (high SES schools). Poor families are generally less able than wealthier families to enrich and deepen out-of-school learning by their children.

International studies also find that the effects of differences in teaching quality appear to be additive and cumulative.<sup>14</sup> Students who are assigned to several ineffective teachers in a row have significantly lower achievement and gains in achievement than those who are assigned to several highly effective teachers in sequence.

Although it is known that good teachers produce larger learning gains in their students than less effective teachers, the origins of differences in teacher quality are much less clear.

**Improving the quality of new entrants into teaching.** Rigorous studies<sup>15</sup> find that teachers with better subject matter knowledge, as measured on subject matter tests, produce larger learning gains in their students. Thus, if pre-service programmes increase trainees' command of their subjects, whether history, science, or mathematics, there should be positive effects on their students' learning if they enter teaching. In recent years the academic qualifications required to enter teacher training are the same as to enter the University of Guyana.

It is important for ministries of education--or, in Guyana's case, its Teaching Service Commission--to use their powers as the employer of pre-service graduates to increase the quality of the products of these programmes. That is why the model in figure IV.2 places ministries of education (in Guyana's case, its Teaching Service Commission) at the center of improving the quality of new entrants into the teaching labor force.

**Improving the quality of teaching.** The model for improving the quality of the active teaching force in figure IV.3 makes three big assumptions.

- Competitive salaries are needed to retain good performers.

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<sup>14</sup>Sanders and Rivers, 1996.

<sup>15</sup>Glewwe et al., 2011.

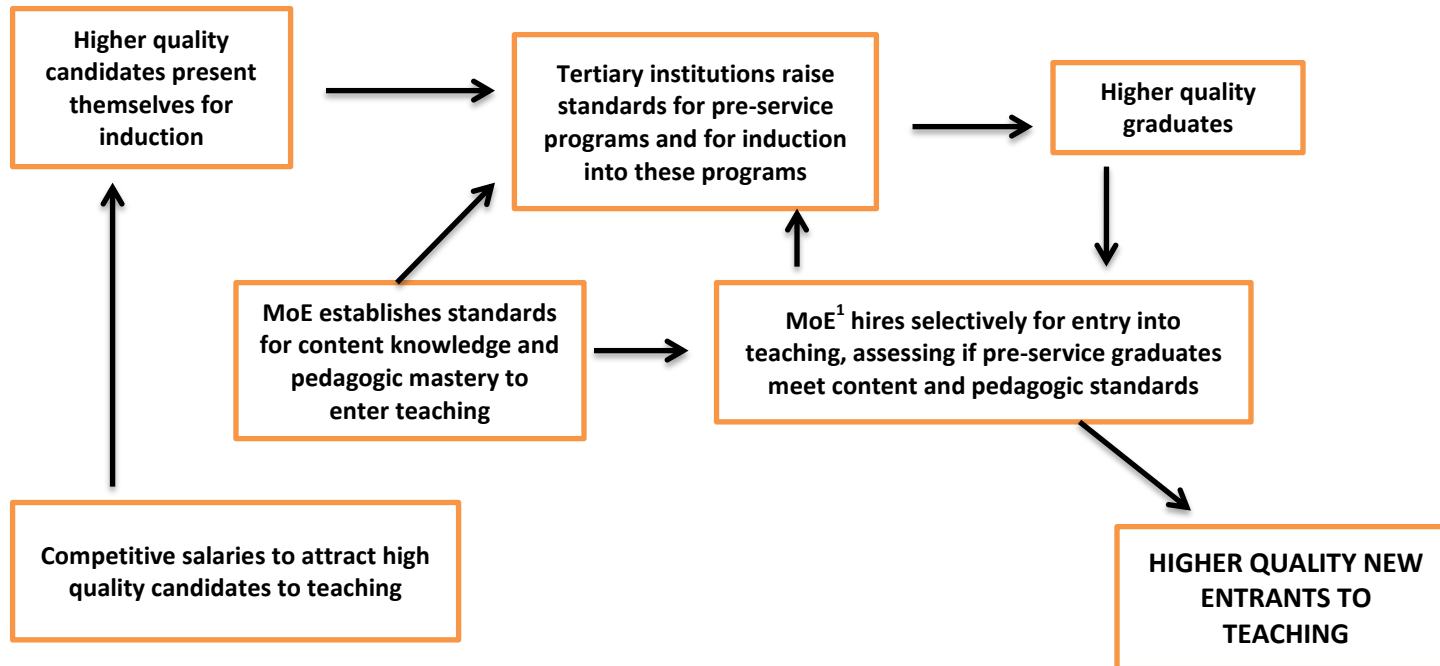
- The head teacher is a crucial player in monitoring and raising the quality of the performance of the school's teachers. The selection of candidates for this role must be competitive, and their training for the position must be serious through mechanisms such as a post graduate programme.
- A continuous professional development programme must be in place. This programme should use centrally prepared television programmes, DVDs videos, and other materials. Facilitators should be in place to work with groups of teachers--preferably organized by subject matter or, for the early grades, by grade. Teachers should participate in training frequently and regularly and on paid time. During training they should observe and critique good and bad examples of teaching a particular topic, analyze the implications of learning assessments and examination results for altering teaching strategies, and so forth.

In the context of Guyana, the MoE and the teachers' union have signed multi-year agreements on increases in salaries. As in all other areas there is always room for continued improvement, but there are also other incentives from which teachers may benefit; these include uniform allowances, possible housing loans, and provision of housing in remote areas.

### **Quality of curriculum and instructional tools**

The curriculum specifies what teachers are expected to teach and students are expected to learn. Instructional tools, such as textbooks, workbooks, teacher guides, libraries, manipulable items, and computer software, are expected to reflect the curriculum and facilitate its delivery by teachers to students and its acquisition by students.

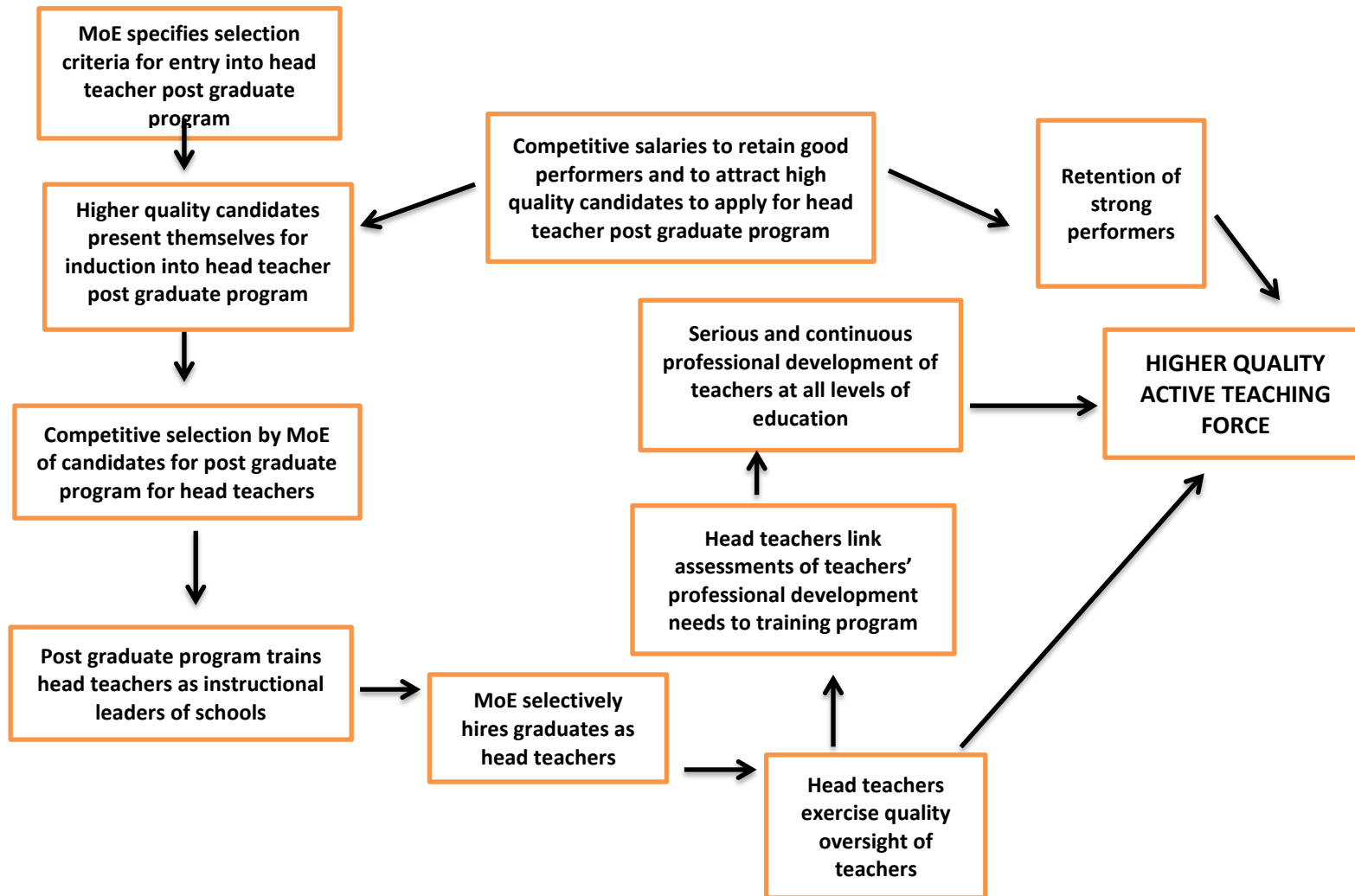
Figure IV.2. INTERVENTIONS TO PRODUCE HIGHER QUALITY ENTRANTS TO TEACHING



<sup>1</sup> For Guyana, this is the Teacher Service Commission.



Figure IV.3. INTERVENTIONS TO RAISE QUALITY OF ACTIVE TEACHING FORCE



*Quality of curriculum.* The curriculum used for each grade and subject is the bedrock for teaching and learning. Teaching and learning tools such as textbooks and teacher guides, hiring standards for new entrants to teaching, and the design of in-service professional development programmes, learning assessments, and exit examinations should be aligned with the curriculum. The whole instructional enterprise is compromised if the curriculum is compromised. The curriculum can be incoherent, grade inappropriate, inefficient (as when topics are revisited superficially for several grades), or it can set low, inappropriate, or excessively high performance objectives for students. Given the multiplier effects of the curriculum, it deserves a careful review in any strategy to raise students' learning achievements.<sup>h, 16</sup>

*Quality of teaching and learning tools.* Rigorous studies<sup>i</sup> find that libraries have positive effects on learning.<sup>17</sup> The effects of textbooks<sup>18</sup> and especially of computers are equivocal, possibly reflecting design and implementation problems with these inputs to learning. Whichever tools are provided, their selection and design must be dictated by the curriculum. Tools disconnected from the teaching and learning objectives of the curriculum distract teachers and students. And even if tools are well-designed and well-aligned with the curriculum, if teachers do not know how to use them properly, they will not increase and could decrease learning.

### **Increased instructional time**

Adding time when it is unproductively used will not increase student learning. However, all else being equal, ensuring that each student spends significant time on the job of learning increases learning gains. Credible studies<sup>19</sup> find that several measures of increased "time on task" positively affect learning: teacher presence, student attendance, annual hours of schooling, homework assigned, and tutoring provided.

Figure IV.4 assumes that a student's "time on task" (productive or otherwise) depends on whether the school is open, the teacher is there and well prepared for teaching, the student is there, the number of instructional hours per school year mandated by the national government is within the international range, and opportunities to augment students' time on task such as homework and tutoring are used.

Engineering the school to withstand natural disasters common to the region, such as floods, hurricanes, or earthquakes, at least ensures that the school is available after a catastrophic event, although Ministries of Education usually can do little by themselves to reduce the damage to areas that students have to traverse to get to the school.

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<sup>16</sup> Guyana's MoE has already taken some important steps towards curriculum reform, especially in science and Technology--for example, the Inquiry Based Science Education approach has required changes in the primary curriculum and preparations are already in place for the integration of Climate Change for Sustainable Development and Disaster Risk Reduction Education into the Science curriculum.

<sup>17</sup>Glewwe et al., 2011.

<sup>18</sup>Glewwe et al., 2009.

<sup>19</sup>Glewwe et al., 2011.

Making school report cards available to each school's PTA will let the PTA monitor teachers' attendance, sanction teachers' absence, and encourage parents to reduce the absenteeism of their own children. Getting teachers and students to the school will provide two inputs critical to more instructional time.

Children's absence is also related to schooling costs that poor families cannot afford, to parents' need for their children's labor during harvests, and to living too far from the school. If properly designed and implemented, providing subsidies to poor families in exchange for their keeping their children in school has been found to be very effective in many countries. Allowing flexibility in the school schedule to circumvent seasons when it is very difficult for students to attend school or even to reach the school is a simple way to reduce absenteeism. At harvest time families may need their children to help with harvests; during periods of heavy rain, it may be virtually impossible to traverse the muddy terrain that must be crossed to reach the school; during periods of low water, children who rely on river boats to get to school may not be able to reach them.

Research shows that, especially at the primary level, shortening the distance that students have to travel to school substantially increases parents' willingness to enroll their children and to ensure that they attend school.<sup>20</sup> Reducing the distance necessarily implies the need for more and smaller schools, rather than fewer and larger schools. As travel distance decreases, the population in the catchment area falls. Multi-grade teaching, then, must become an integral part of the school planning strategy to ensure the efficient utilization of facilities. Considerable research evidence demonstrates that when teachers are properly trained in the methods of multi-grade teaching, this type of teaching is as effective as, and often more effective than, single-grade teaching in terms of learning outcomes.

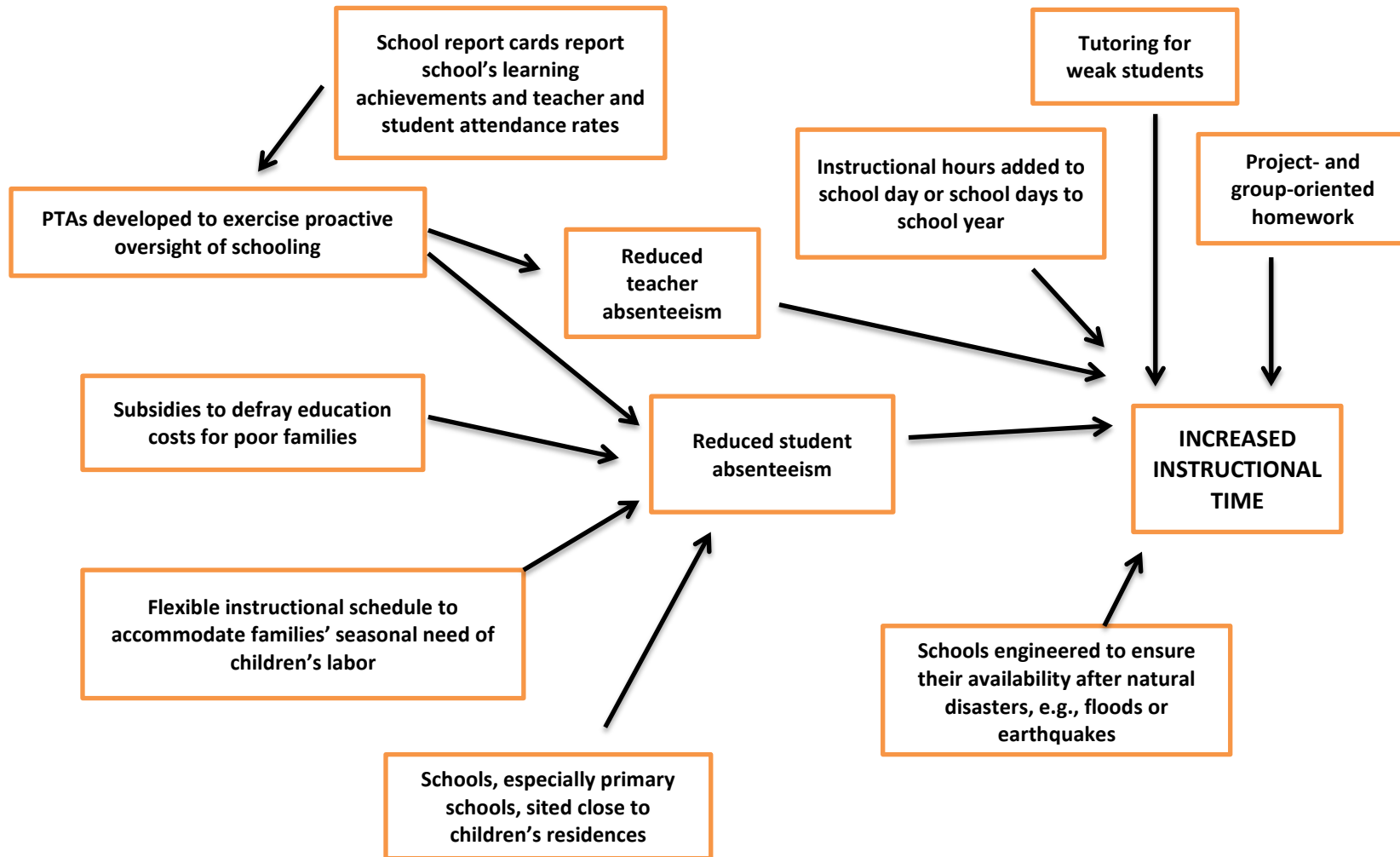
The story on formal instructional time is more complex.<sup>21</sup> The issue is not total instructional time, but the time allocated to subjects of high priority to the country, such as language, mathematics, and science and the productivity of each instructional hour. The estimated effects of instructional time for mathematics, science, and language for the OECD countries are all positive and large,<sup>j</sup> but an hour of instructional time in developing countries is found to have only half the effect on student learning as in developed countries because of the lower productivity of each hour of instructional time.<sup>k</sup>

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<sup>20</sup>Theunynck, 2009.

<sup>21</sup>Lavy, 2010.

Figure IV.4. INTERVENTIONS TO INCREASE INSTRUCTIONAL TIME (“TIME ON TASK”)



## **PART V—Initiatives to Help Guyana Achieve Better Learning Outcomes**

The findings of these studies on factors that increase learning outcomes in developing countries narrow the focus for Guyana’s 2014-18 ESP priorities. However, Guyana’s final selection of initiatives to raise students’ learning achievements was made after consideration of the criteria listed below.

### **Selection criteria**

**Do the institutional requirements of an intervention fit Guyana’s governance and policy context?** Guyana now decentralizes only modest decisions to the schools, and any intervention that involves significant school-level autonomy does not fit Guyana’s current policy environment. On the other hand, schools do have PTAs. Some schools have School Improvement Action Committees (SIAC) that include PTA representatives, as well as other members of the community and, in some cases, even students who work on the development of the School Improvement Plans (SIP) for the schools. Thus, strengthening the PTAs and other related groups to provide more oversight of the school is possible.

**What is the proper sequencing of interventions?** Sequencing decisions should reflect both technical and implementation considerations. For example, the MoE will sequence the implementation of interventions to prevent a “clumping” of implementation burdens on its units while recognizing the need for complementarity amongst the various components.

**Do the cost/benefit or cost/effectiveness tradeoffs for an intervention argue against investing resources in it?** When instructional time is used effectively, allocating more instructional time to subjects of high priority to Guyana, such as literacy, mathematics, and science, will significantly increase students’ learning outcomes in these subjects. This depends, however, on how effectively the increased time is used. This suggests that Guyana should focus first on improving the effectiveness of the time already spent on its priority subjects before adding more.

In general, this question has to be asked. Is an intervention costly in absolute terms and relative to alternative uses of the money? If so, the expected benefits/effects on learning outcomes must be significant in order to warrant the fiscal costs required in order to achieve the expected results, especially if financing the intervention “crowds out” the ability to fund attractive alternatives.

**Does the responsible unit have the capacity to design and implement the intervention?** Even simple interventions demand design and implementation skills. Complex interventions strain the sector’s design capacities, its logistics system, oversight capacities, and often its fiscal resources. If an intervention cannot be well-designed and capably implemented, it is better to defer its implementation until the Ministry has or is able to contract the requisite capabilities.

An example for textbooks illustrates the costs of poor design and/or poor implementation.

1. Textbooks are purchased, but a large share remains marooned in regional warehouses.
2. Textbooks reach the schools, but head teachers keep them locked up in cupboards for “safety”.
3. Textbooks reach the teachers and the students, but they are in a language that the students and sometimes even the teachers do not understand or with which they have only limited facility.
4. Textbooks reach teachers. However, because they have had no training in how to use them effectively, they end up not using them at all in their teaching.
5. Textbooks reach students, but benefitting from them requires a foundation of skills and knowledge beyond those of many of the students.

The results of the organizational audit should feed in to decisions downstream about whether to proceed with or to defer the design and implementation of an intervention. If the audit indicates that the relevant units are not ready to manage an intervention effectively, pursuing the intervention can be postponed until efforts to build that unit’s capacities have borne fruit. As previously indicated, there are also the options of contracting services and using pilots that are less demanding of implementing units than national initiatives. De facto, they let the implementing units “ease into” implementation. Implementing programmes on a phased basis if positive outcomes are not too much in question is another option.

**Will positive findings based on particular levels of education generalize to other levels?**

Many high quality evaluations are based on primary or basic education. Positive findings from these studies may or may not generalize to other levels of education, such as secondary education or TVET.

**Will positive effects generalize to Guyana’s different sub-groups?** An intervention may work for some, but not all, sub-groups. An example is when textbooks benefit the learning of students with strong reading skills, but not those with weak reading skills, or when textbooks are printed in a language that is not understood by students from rural and poor families.<sup>22</sup> In cases where there is no prior experience of successful interventions, activities will be based on knowledge about the specific needs of the communities and groups.

**Priority interventions for the ESP**

***Intermediate outcome 1: The performance of government departments responsible for ESP initiatives improves***

**Initiative 1.1. Assess capacities of central and regional MoE departments to manage ESP reforms.** An organizational audit will be conducted to assess whether units that have responsibilities for implementing major aspects of the ESP have the individual and organizational resources and incentives to deliver on these responsibilities effectively. The audit will focus on the MoE’s central and regional departments, but might also include a sample of

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<sup>22</sup>Glewwe et al., 2009.

schools. The framework for the audit will be organized around the three factors that seem to determine the quality of organizational performance: human capacity, organizational characteristics, and the formal and informal incentives that shape individuals' choices.

The organizational audit will have four outputs.

- As part of the audit, the unit defines (or revisits and revises) its action plan for accomplishing those actions under its jurisdiction that the ESP's interventions require. The action plan includes the main actions, who should take each action, the resources needed, time lines, and performance indicators. Auditors' observations of how well the unit manages this process let the auditors assess the unit's planning capacities.
- The audit for each unit identifies capacity building needs. These can include human capital shortfalls, relative to responsibilities; organizational problems that need to be resolved; and perverse incentives that need to be addressed.
- Given the audit results and ESP priorities, the auditors recommend to the MoE where to focus capacity building.
- The auditors recommend to the MoE on whether to proceed with the implementation of an ESP intervention, given the capacity status of those organizational units responsible for its implementation.

**Initiative 1.2. Build capacities for departments selected via organizational audit for capacity building.**

Capacity building may include hiring additional staff; hiring staff with better qualifications; training existing staff; reviewing systems of operation; or better resourcing of units and departments in terms of inputs such as equipment.

**Intermediate outcome 2: Accountability system that creates incentives to improve student learning outcomes is established and functioning.**

Initiatives here will focus on examinations and learning assessments, including diagnostic assessments. Results will be published in school-specific and national report cards widely available to local communities and the civil society. These data will be used to improve learning outcomes. Diagnostic assessments will be done on entry to nursery schools using the instrument piloted in 2013. This instrument will be administered again at the end of year 1 to assess learning achievements. A diagnostic test in literacy will also be done at the beginning of each year at the primary level. Analyses of the results of national attainment tests will identify those areas of serious weaknesses on the part of students.

Analyses of examination and assessment results are used to increase the MoE's accountability for improving students' learning outcomes. Under Intermediate Outcome 4 that focuses on improving the quality of teaching (see below), the MoE will develop training materials for its CPD programme to help teachers address students' learning failures. More specific information will also be provided at the school level, and teachers will be encouraged to use this information to do remedial work with their students. Head teachers will be much better trained than most are now to monitor teachers' lessons effectively. Although interventions to create a cadre of well-

trained head teachers are proposed for the 2014-2018 ESP, the first graduates will probably be in their head teacher positions only by the end of the 2014-18 ESP.

**Initiative 2.1. Revise learning assessments and examinations to reflect changes in curricula.** The measurement and evaluation and the curriculum and development units of NCERD will collaborate closely to ensure that all changes in the curriculum are reflected in the design of national assessments and examinations. Discrepancies between the curriculum and the assessments/examinations place teachers and students in a conflict that they cannot resolve. The Ministry may contract the services of specialists or CXC to prepare assessments while it builds capacity in these Units.

**Initiative 2.2. Develop alternative methods of assessment, depending on the methodologies used to teach the subject and on the requirements for special needs students.** The reliability and validity of the current assessment instruments can be further improved. These improvements will increase the accuracy of item analyses of assessment results and thus of the targeting of interventions, such as the design of professional development programmes for teachers. Methods of assessment may be modified depending on the subject and the methodology being used to teach it. For example, pen and paper tests have not been found to be a good way to measure learning in Science at the primary level when the approach is experiential teaching/learning. The competency-based approach already in place for technical subjects will be considered for other subject areas. For special needs students, the assessment or examination may be administered in different formats.

**Initiative 2.3. Use item analysis of the results of student assessments to identify areas of student weaknesses** and use these analyses to prepare teaching training materials and special teacher in-service training sessions to help teachers address these weaknesses.

**Initiative 2.4. Participate in one of the regional or international learning assessments that assess student performance prior to the time that the CSEC is administered.** Guyana already has learning assessments for grades 2, 4, 6 and 9, but participating in international and regional assessments would give Guyana an assessment of learning in comparison with other countries. Since participating in these assessments entails meeting stringent requirements, participation is not likely to occur until near the end of the plan period.

**Initiative 2.5. Establish stakeholder organizations at the school and community level and build their capacities to diagnose and take action to address issues affecting their schools.** This initiative and initiative 2.6 are interdependent.

**Initiative 2.5.1.** Increase the percentage of schools with fully constituted and functioning PTAs, School Boards and Student Councils.

**Initiative 2.5.2.** Develop capacities of PTAs/SIACs to monitor observable aspects of the schools (e.g., quality of facilities) and to use school report card data to advocate for changes that they believe will lead to better results--for example, working with the head teacher on measures (rewarding and punitive) to improve teachers' attendance and with parents to improve their children's attendance.



**Initiative 2.5.3.** To prepare schools to assume more autonomy and responsibility for certain process decisions, help schools and PTAs construct school improvement plans (SIPs). Consider rewarding schools with good SIPs with a grant that they can spend on any activity in their approved SIP.

**Initiative 2.6. Increase the information available to stakeholders, especially PTAs, parents, communal organizations, and employers, about the status of their schools, and increase the lines of communication and collaboration between stakeholders and the Ministry of Education.**

**Initiative 2.6.1.** Put school report cards and national report cards in place, making them widely available to stakeholders. School report cards will include learning outcome scores on national assessments, rates of teacher absenteeism, rates of student absenteeism, and perhaps the results of engineering audits and follow-up upgrading. The national report card should include trend data for national assessments at grades 2, 4, 6, and 9 and compare Guyana's performance on regional (e.g., CSEC) or international assessments with those of other countries

**Initiative 2.6.2.** Establish a MoE strategic communication programme. This programme has three purposes. It will sensitize the public to important education issues that impact their lives, their communities, their businesses, and the lives of their children. It will explain the reasons for and relevance of the Ministry's initiatives to different stakeholders. Finally, it will help build collaborations between stakeholders and the MoE in order to make progress on major initiatives that improve education and training. The MoE hopes to engage the public on priority issues such as Literacy and Numeracy, Early Childhood Education, Establishing Parental Partnership, Establishing Professional Teachers Standards, and Strengthening Technical Vocational Education and Training in Guyana. It will use a range of communication mechanisms and sensitization training sessions in order to deliver its messages effectively and efficiently, such as parent seminars in various public spaces (e.g., schools and Health and Resource Centers), the MoE's Website, MoE's Facebook and Twitter Pages, Brochures, television programmes and Face-to-face community meetings.

**Initiative 2.6.3.** Use the PTA Coordinating Unit as a means through which the concerns of PTAs can be brought to the attention of senior education officials.

**Intermediate outcome 3: Quality of school facilities improves.**

**Initiative 3.1. MoE reviews and, as needed, revises quality standards for all aspects of an engineering audit of schools.**

**Initiative 3.2. Using MoE standards, regional departments conduct an engineering audit of all schools** that includes assessments of, *inter alia*: a) quality of school walls, roof, and floor and structural integrity; b) availability of desks, chairs, tables; c) availability of clean water; d) availability and quality of sanitary facilities for teachers and students; e) availability of power and of non-fossil fuel sources of power; f) quality of dormitory facilities where present; and g) presence and quality of teacher houses in remote areas.

**Initiative 3.3. Regional departments submit annual budget requests and annual targets for upgrading sub-standard facilities to standard.**

**Initiative 3.4. Assist Regions to develop preventive maintenance plans for schools.**

**Initiative 3.5. Create additional places at the secondary and nursery levels** through construction of three (3) secondary schools in Regions 3 & 4 and eight (8) nursery schools in Regions 3, 4 and Georgetown.

**Intermediate outcome 4: The quality of teaching improves.**

**Initiative 4.1. Improve the quality of teaching through sustaining and intensifying initial teacher training across levels each year.** The Guyana Improving Teacher Education Project (GITEP), which will continue for the first two years of this plan, now provides for all potential teachers to be trained to the level of an associate degree. During this planned period sustained efforts will be made to target those untrained teachers in the hinterland and riverine areas with an associate degree program that is the same as that required at the pre-service level.

**Initiative 4.2. Establish MoE's subject matter and pedagogic standards and measures of these standards to determine who enters teacher training and who is hired into teaching.**

The Ministry is currently engaged in public consultations throughout the country on proposed professional standards for teachers. This draft document has proposed entry qualifications to CPCE that are similar to the University. These standards will be the basis for entry to and continued engagement in the teaching profession. The Teacher Training College (CPCE) will take account of these standards in its programmes for teacher trainees. The Ministry, however, recognizes the special circumstances of some hinterland and deep riverine communities. CPCE will continue to offer the Foundation programme to bring practicing untrained teachers to a level at which they can begin the professional teacher training programme.

**Initiative 4.3. To off-set shortages of qualified teachers in particular subjects, NCERD and expert consultants prepare lessons in various subjects, especially in science and mathematics.** These will be beamed directly to students in classrooms through the Broadcast to Schools programme, the education TV channel, DVDs, or the internet.

**Initiative 4.4. The Ministry sets targets for increasing the number and subject specializations of teachers in remote hinterland and riverine schools and expands the incentives to attract teachers to meet these targets.** These incentives may include scholarship programmes for bright young people willing to serve for a period in these areas, accelerated promotion after service in a difficult area, or enhanced financial or other incentives.

**Initiative 4.5. Prepare sample lesson plans and other instructional material for teachers, in particular at nursery and primary levels,** together with guides on how to use these resources so that teachers are better prepared to utilize the instructional period more effectively.

**Initiative 4.6. Design a post-graduate programme that prepares candidates for the position of head teacher.** The design will establish criteria for competitively selecting applicants into the programme. The program will include training in how to observe and improve the performance of teachers in their schools.

**Initiative 4.7. Systematize and significantly upgrade the quality of the continuous professional development (CPD) of teachers.** As the lead agency for the CPD programmes, the NCERD will, as a matter of policy, base many of its training programmes for teachers on observable weaknesses in student performance. Workshops will therefore be more regional and school-based to address specific needs. Head teachers with post graduate qualifications will be expected to provide follow-up support to teachers to help them apply what they learned in their continuous professional development workshops. During the plan period NCERD will commission evaluations of its major programmes.

The CPD programmes will be supported by the establishment of a database system that will allow the Ministry to track who participated in programmes, what training they received, and, if available, information on post training behavior. It is recommended that those teachers whose performance noticeably improves become candidates for accelerated promotion and eligible to compete for training as a head teacher. Those whose performance fails to improve have to be at risk of termination.

The CPD programme will include:

- Regular and frequent development sessions through a resuscitation of grade level or subject committees (where appropriate) at primary level and subject committees at secondary level.
- Enhanced facilities in Resource Centres or other suitable locations throughout the country with appropriate equipment (e.g., printed materials, TV, computers, videotaping) for use in presentations and training. Proper equipping of facilities with computers will be especially important. Teachers should integrate ICT into their classes, and CPD courses will be delivered so as to develop teachers' basic and advanced ICT skills under the UNESCO framework.
- Centrally prepared content for the educational TV channel, DVDs and that demonstrate what effective teaching of a major topic, e.g. Grade 6 mathematics, looks like and what ineffective teaching looks like.
- Rotation of teachers in presenting a teaching session that is videotaped and is critiqued by the group under the facilitator's guidance.
- The use of development sessions to analyze student test results in order to identify good practices which can be replicated, as well as to establish what the weaknesses are and to generate ways to address them.

The new CPD approach is expected to result in teaching improvements at all levels and in all subject areas, including life skills teaching and teaching SEN students. However, emphasis will be given to the core areas of mathematics, literacy and science.

**Initiative 4.7.1.** Improve the quality of mathematics teaching at all levels, basing CPD mathematics courses at the primary and secondary levels on item analyses of the mathematics results for examinations and assessments that reveal student failures.

- The nursery level and grades 1 and 2 will use Early Childhood Development resource kits to improve mathematics teaching.
- At the primary level, teachers will learn to use manipulatives to make their teaching more interactive and practical and to properly use the interactive radio instruction in mathematics. One or two teachers in each school will be designated and intensively trained to teach mathematics throughout the school. This approach will first be piloted in 10 schools.
- At the secondary level CPD courses will be customized to variations in teachers' mathematical knowledge and skills. They will support teachers' participation in a mathematics pilot. In 10 pilot secondary schools in regions 2, 3, 4, 6, 7, 9, and Georgetown students the MoE will give students access to hardware (tablets or notebooks) and software to support their learning in mathematics during and after school.

**Initiative 4.7.2.** Improve the quality of literacy teaching at all levels, basing CPD literacy courses at the primary and secondary levels on item analyses of the literacy results for examinations and assessments that reveal student failures. Literacy courses will be extended to District Education Officers (DEOs) and head teachers to help them monitor and provide supportive supervision of literacy initiatives in the schools.

- At the nursery level CPD training will focus on teaching shared reading, guided reading, language experience approach, and phonics and phonemic awareness and on using the new resources, such as Roraima readers, to build emergent literacy.
- Training at the primary level will use literacy toolkits to teach reading, comprehension, assessments, and literacy standards and benchmarks.
- CPD at the secondary level will focus on infusing literacy across the curriculum, especially for teachers in low performing schools and schools that operate a transitional curriculum programme.

**Initiative 4.7.3.** Improve the quality of science teaching at the primary and secondary levels, basing CPD science courses on item analyses of the science results for examinations and assessments that reveal student failures.

- The Inquiry Based Science Education approach will be extended to another 250 primary schools during this plan period, with CPD being used to train teachers in those schools in this approach. Specialist training for primary school science teachers will be provided through links with the University of Guyana and local and international science institutions. In a pilot of 10 schools secondary school science teachers will be twinned with primary schools to support science in those schools.
- CPD at the secondary level training will continue to use the micro science kits to improve science teaching.

**Initiative 4.7.4.** Improve the quality of teaching in TVET at the secondary level. TVET teachers will be granted releases to study at the University of Guyana and the technical Institutes in the Technician certificate and Diploma programmes. Individual technical institutes will conduct staff training in Pedagogy, English Language, Item Writing, Assessors, Verification

(internal and external), competency-based education and training (CBET)<sup>23</sup>, Entrepreneurship, and Occupational Health Environment and Safety. Some training, such as in Tourism and Hospitality, may have to be done outside of Guyana in the absence of programmes more advanced than those offered by the Carnegie School of Home Economics (CSHE) in Hospitality.

**Initiative 4.7.5.** To improve the quality of life skills teaching and teaching for SEN students, deliver CPD courses that help teachers: a) develop the life skills of their students, using materials developed by the Health and Family Life Education programme in concert with NCERD; and b) identify and work with students who have special education needs. These courses will include the use of alternative methods of delivery, such as sign language and being able to teach Braille.

***Intermediate outcome 5: Teaching-learning materials/ instructional tools/ assisted devices aligned to facilitate better learning outcomes.*** As part of the accountability system, initiative 2.1 focuses on the alignment of the content of assessments with revised curricula. This strategy focuses not only on ensuring that teaching and learning materials are aligned with any revised curricula, but that there is increased access to equipment that facilitates more interactive learning.

**Initiative 5.1. Benchmark the curriculum by grade and subject against regional/international standards.** These standards characterize more versus less effective curricula: content standards, performance expectations for students and teachers, coherence, and efficiency. The Ministry will contract persons, including local, regional and international professionals, to help with this task.

**Initiative 5.2. Revise the curricula in all the subject areas in accordance with the evaluation results.** Priority will be given to the core subjects at the primary level and, given the social challenges facing students and schools, on reviewing the HFLE curriculum for relevance.

**Initiative 5.3. Adapt the curricula for children with special education needs.**

**Initiative 5.4. Review and modify textbooks and the content of training programmes to ensure that they meet the requirements of the revised curricula.**

**Initiative 5.5. As a check on the reliability of its logistics chain, monitor whether adequate teaching and learning tools reach schools and classrooms in a timely fashion.** Take corrective actions as necessary.

***Intermediate outcome 6: Students' instructional time increases.***

Reducing teacher absenteeism increases students' instructional time. However, initiatives identified earlier address the teacher problem: strengthening the capacities of PTAs to provide oversight and providing report cards to PTAs with information on teacher absenteeism. The initiatives here focus on increasing students' attendance.

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<sup>23</sup> CBET training is applicable to both secondary and post-secondary levels.

**Initiative 6.1. Continue and enhance welfare measures to reduce the costs of education for poor families and thus to encourage them to keep their children in school.** Measures will include providing free exercise and text books, school uniforms, and school feeding programmes.

**Initiative 6.2. After consultation with families, schools, and regional government offices, introduce flexible school schedules in some regions/sub regions to reduce student absenteeism** attributable to rainy seasons (e.g., in Region 9), low water that prevents travel by boat (Region 1), and weeks when children are needed to help in harvesting crops.

The next three initiatives (6.3-6.5) recognize that family and health factors can constrain the instructional time available to students, especially at risk and vulnerable children and special education needs children. These initiatives enhance health and special education support to such students.

**Initiative 6.3. Guidance and Welfare Unit establishes a database that flags “at risk” and vulnerable children for purposes of organizing support for them.**

**Initiative 6.4. The Guidance and Welfare Unit and the School Health Units provide support to at risk and vulnerable children,** such as teenage mothers and children in difficult socio-economic circumstances, in abusive homes, or affected by HIV/AIDS. Major initiatives are the reintegration programme for teenage mothers and the provision of cash, material support (such as textbooks, exercise books, and uniforms), and mentoring, counseling, and health services for at risk children. In addition, through HFLE students are exposed to life skills.

**Initiative 6.5. The SEN and School Health Unit will collaborate in identifying SEN children through screening and in providing educational support,** for example, transportation, hiring of teacher aides, to SEN children.

## **PART VI –Implementation Plan**

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### **Responsibility for the ESP initiatives**

The design and implementation responsibility for each initiative pursued under the ESP has to be assigned by designating those departments primarily and secondarily responsible for each. Table VI.1 defines these responsibilities and is based on consultations with the various central and regional departments.

**Table VI.1.** Lead and support agencies for each intervention

<b>Initiative</b>	<b>Lead department</b>	<b>Support departments</b>
Monitoring the results framework for the ESP, including progress towards its primary goals	Planning Unit	Office of the PS, DCEOs (A) and (D)
Organizational audit	External organizational audit team , Personnel Division and MoE Planning Department	NCERD, DCEO(A)
Build capacities for departments selected via organizational audit for capacity building.	External organizational audit team, PS, Personnel Division	DCEO(A),
Revise learning assessments and examinations to reflect changes in curricula.	NCERD	Examination Unit, Office of the CEO, ACEO (P) and (S)
Develop alternative methods of assessment depending on methodologies use to teach the subject and for students who have special education needs.	NCERD (SEN)	CEO, ACEOs, DCEO, Region Education Office(s)
Based on item analyses of the results of student assessments that identify areas of student weaknesses, use these analyses to prepare teaching training materials and special teacher in-service training sessions to help teachers address these weaknesses.	NCERD	Region Education Office(s), relevant ACEOs
Extend Guyana's participation in regional CSEC to participation in one of the international learning assessments such as PISA.	NCERD, Examination Division, ACEO (S)	DCEO(A)/CEO, CPCE, UG
Increase the percent of schools with fully constituted and functioning PTAs.	Office of the PTA Unit	DCEO(A), Depts. of Education
Develop capacities of PTAs to monitor observable aspects of the schools and to use school report card data to improve teacher attendance and student attendance.	PTA Coordinating Unit, ACEO (N,P,S,)	Region Education Office(s), CEO/DCEO (A) Building Engineer
To prepare schools to assume more autonomy and responsibility for certain process decisions, help schools and PTAs construct school improvement plans (SIPs). Consider rewarding schools with good SIPs with a grant that they can spend on any activity in their approved SIP.	Office of the CEO, DCEO (A), PTA Unit	Region Education Office(s), SIACs



<b>Initiative</b>	<b>Lead department</b>	<b>Support departments</b>
Put school report cards and national report cards in place. Establish a MoE strategic communication program to sensitize public to important education issues, explain and promote MoE positions, and build collaborations with stakeholders.	Office of the CEO, PRO	DCEO (D) and (A), Region Education Office(s), Communication Specialist Office of the PS, NCERD
Establish a MoE strategic communication programme.	PRO, Office of the Minister	DCEO (D) and (A), Region Education Office(s), Communication Specialist Office of the PS, NCERD
Use the PTA Coordinating Unit as a means through which the concerns of PTAs can be brought to the attention of senior education officials.	PTA Coordinating Unit	Region Education Office(s), DCEO (A), Welfare Unit.
MoE reviews and, as needed, revises quality standards for engineering audit of school facilities	Buildings Unit, Office of the PS	Departments of Education and Regional Public Works Section
An engineering audit of all school facilities is completed, and the schedule for bringing sub-standard schools up to standard is in place.	Buildings Department	Departments of Education, Public Works Section.
Regional departments submit annual budget requests and annual targets for upgrading sub-standard facilities to standard.	PS Office, Buildings Department, Departments of Education	Regional Executive Officers.; Regional Education Officers
Regions will be assisted to develop preventive maintenance plans for schools.	PS Office, Buildings Department, Departments of Education	Regional Executive Officers. Regional Education Officers
Additional places at secondary and nursery will be created.	PS Office, Buildings Department, Departments of Education	Departments of Education and Regional Public Works Section, ACEOs
Improve the quality of teaching through sustaining and intensifying initial teacher training across levels each year.	CPCE and UG	Region Education Office(s)
Establish MoE's subject matter and pedagogic standards and measures of these standards to determine who enters teacher training and who is	NCERD, CPCE, CEO, DCEO(D)	DCEO (A)

<b>Initiative</b>	<b>Lead department</b>	<b>Support departments</b>
hired into teaching.		
To off-set shortages of qualified teachers in particular subjects, prepare lessons in various subjects, but especially in science and mathematics, that are beamed directly to students in classrooms through the Broadcast to Schools programme, the education TV channel, DVDs, or the internet.	NCERD	CEO, DCEO Region Education Officer(s)
MoE sets targets for increasing number and subject specialization of teachers in remote hinterland and riverine schools and expands incentives to meet targets.	CEO, DCEO (A) and Office of the Minister	Region Education Office(s)
Prepare sample lesson plans and other instructional material for teachers, in particular at nursery and primary levels, together with guides on how to use these resources so that teachers are better prepared to utilize the instructional period more effectively.	NCERD	ACEOs.
Design a post graduate programme to train head teachers, establish criteria for competitively selecting applicants into the programme, and establish criteria for competitively selecting graduates into vacant head teacher posts.	CPCE, UG, MOE Senior Policy Team	NCERD
Systematize and significantly upgrade the quality of continuous professional development of teachers.	NCERD	Region Education Officers.
Improve quality of mathematics teaching at all levels	NCERD, ACEO(S) & (P)	CPCE
Improve the quality of literacy teaching at all levels	NCERD, ACEO (N, P, & S)	CPCE
Improve the quality of science teaching at the primary and secondary levels	NCERD, ACEO(P & S)	CPCE
Improve the quality of teaching in TVET at the secondary level.	NCERD, ACEO(S) SSCP unit	CPCE ACEO (T)
Improve the quality of life skills teaching and	NCERD (SEN)	CPCE

<b>Initiative</b>	<b>Lead department</b>	<b>Support departments</b>
teaching for SEN students		
Benchmark the curriculum by grade and subject against international standards that characterize more versus less effective curricula: content standards, performance expectations for students, coherence, and efficiency.	External Consultants, NCERD (Curriculum Unit and Measurement & Evaluation Unit)	CEO/DCEO (A & D), ACEOs
Revise curricula for relevant grades, starting with primary level, and subjects in accordance with evaluation results.	External Consultant, NCERD (Curriculum Unit and Measurement & Evaluation Unit)	ACEO (N, P & S)
Adapt revised curricula for children with special education needs.	NCERD	CEO
Textbooks and curricula of training programmes reviewed and modified to meet the requirements of the revised curricula.	External Consultant, NCERD (Curriculum Unit and Measurement & Evaluation Unit)	ACEO (N, P & S)
As a check on the reliability of the logistics chain, audit whether teaching and learning tools reach schools and classrooms in timely fashion.	Book Distribution Unit, Office of the PS and NCERD.	Regional Education Offices, ACEO (P), (N) and (S)
Continue the provision of support to reduce the costs of education to families, especially poor families.	Welfare Unit, Office of the PS	DPS (G) and Finance Department, Region Education Offices
Flexibly re-arrange school schedule to circumvent adverse weather and weeks when parents need students in the fields.	Office of the CEO/ ACEO (N, P & S)	Region Education Offices
Establish a database that flags “at risk” and vulnerable children for purposes of organizing support for them.	Welfare and Guidance Unit	ACEO (N, P & S), Region Education Offices
Provide support to at risk and vulnerable children, such as teenage mothers and children in difficult socio-economic circumstances, abusive homes, or affected by HIV/AIDS.	Welfare and Guidance Unit, School Health and Nutrition Unit, HIV/AIDS Unit, HFLE unit	DCEO(A)
Collaborate in identifying SEN children through screening and in providing educational support to SEN children.	SEN Unit and School Health Unit	DCEO(A)

## **PART VII - Risks to Achieving the ESP Targets and their Mitigation**

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Any five year plan in any sector and in any country is potentially vulnerable to events beyond the sector's control. These include:

- Political instability in the country.
- Changes in the Government priorities on which the plan depends. These can occur when the party in power changes or under the same party.
- Economic disruptions that undermine the Government's funding base for the plan.
- Changes in donor priorities that undermine the funding of the plan.

Any of these events could happen in Guyana over the next five years, but their probabilities are judged to be moderately low or low. The education sector has always been regarded as a major priority across the political divide and civil society, with this Administration evidencing stable support for the sector. To reinforce the political and civic consensus, the formulation of this plan was based on an extensive consultative process with senior and technical officers within the sector and a wide range of stakeholders in the civil society. Initiatives of the ESP, such as school-level and national report cards and arrangements for monitoring and evaluating the ESP, ensure that the nation and communities are kept informed of progress and problems with achieving the ESP's objectives. Communities will also be kept informed of the plan through their participatory roles in devising the Regional Action Plans.

Regional and international/donor agencies supported the 2008-2013 ESP, helping to bridge gaps that could have negatively impacted implementation. It is hoped and expected that this level of support will continue. In an effort to ensure sustainability, the Ministry of Education continues to strengthen its collaboration and coordination of supportive organizations, such as the World Bank, IDB, UNICEF and the Global Partnership in Education through the conceptualization of on-going and future programmes/project initiatives.

Human and organizational capacity constraints in some units and departments of the Ministry of Education pose a much greater risk to the implementation of the ESP and to the achievement of its objectives. This risk is rated moderately high to substantial. This risk is exacerbated by problems with retaining good performers within the MoE.

The Ministry of Education recognizes these risk factors and is undertaking several mitigation measures. The organizational audit, a first activity to be conducted under the new ESP, will assess whether units that have responsibilities for implementing aspects of the ESP have the individual and organizational resources and incentives to deliver on these responsibilities effectively. The audit will focus on the MoE's central and regional departments, but might also include a sample of PTAs and schools. The framework for the audit will be organized around the three factors that seem to determine organizational performance: human capacity, organizational characteristics, and the formal and informal incentives that shape individuals' choices.

The audit for each unit will identify capacity building needs for that unit that can include human capital shortfalls, relative to responsibilities; organizational problems that need to be resolved, or

perverse incentives that need to be addressed. For example, the auditors may find that improving the incentives, such as remuneration packages, is the only way to reduce the loss of good performers from key units.

Given the audit results and ESP priorities, the auditors will recommend where the MoE should focus its capacity building. The auditors will also recommend to the MoE whether to delay the implementation of an intervention pending better capacities of the implementing units. If an intervention cannot be well-designed and capably implemented, it is better either to delay its implementation, pending the development of the key unit's capacities, or to include it in the next ESP. A poorly designed or implemented intervention wastes money, damages the credibility of the implementers, and distracts them from focusing on interventions that they can implement well.

Another risk, which is rated substantial, is the complexity of this ESP. The 2014-2018 ESP takes a systems perspective in terms of improving students' learning outcomes. It addresses the conditions that international experience and research find to be necessary and sufficient for increasing student learning. However, these conditions cumulate to a complex agenda, no matter how capable the implementing units of the Ministry are. The initiatives intended to realize these conditions may combine to overwhelm certain units within the MoE, regardless of that unit's capacities relative to normal loads.

To mitigate this very real risk, the MoE will not pursue the ESP mechanically. It will sequence tasks on the basis of the recommendations of the organizational auditors and so as to even out the loads on individual units as much as possible. It may add consultants to provide temporary help for regular staff of a unit. Wherever appropriate, it will use pilots to help implementing units "ease into" implementing initiatives. It may even defer the implementation of initiatives until the ESP of 2019-2023.

## **PART VIII - Monitoring and Evaluating the Results of the ESP**

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Monitoring and Evaluation (M&E) is essential to any strategic plan. It provides the evidence that lets Government officials, the units responsible for specific interventions, and civil society judge whether the ESP's interventions are being implemented as planned and are likely to achieve their intended outcomes.

The Ministry of Education recognizes the importance of a Results-Based System (RBS) that can ensure accountability, transparency and improved performance in the sector. The previous plan incorporated M&E as an element, but the results-based management process was at an embryonic stage. Although there were regular monitoring meetings convened by the Minister that had some value, the M&E system did not become an integral management tool for heads of units/departments--for example, results and data did not always enter into the future planning of the units.

In 2012 the Ministry of Finance initiated the drive towards managing for results and selected two pilot ministries (Ministry of Health and Ministry of Education). It is against this background that M&E will be a central focus of this plan. The Ministry of Education intends to inculcate a culture of results-based management. It will ensure that internal M&E systems are established that can yield timely and more frequent reporting on results and that evaluations are conducted that can inform policies and programmes. It will use interim results to modify interventions in order to increase their chances of success, thus demonstrating the sector as a true learning organism.

Results-based management can be achieved through the following initiatives:

- **Improving the MoE's performance in monitoring and evaluation**  
This initiative includes periodic training and coaching in monitoring and evaluation methodologies. It will ensure that staff uses their new/improved skills by requiring that policies, programmes, and projects have an active M&E framework. Critical to the process of establishing an effective results framework is the quality of data collection on programmes and projects. As such, a data collection plan, with data quality elements as part of the plan, will be compiled during the training and coaching exercises.
- **Increased accountability for performance**  
Staff in all units/departments must be oriented to their roles and responsibilities relative to their action plans and the contributions of these plans to the higher level programme and sector strategy plans. Through this process staff should become familiar with their reporting requirements. The time taken to access and supply relevant data/reports should accordingly become shorter and reporting deadlines should be properly met.
- **Enhanced integration of monitoring and evaluation throughout MoE budgeting, planning and operations.**  
Evaluation enables an organisation to assess its relevance, effectiveness and impact over time. This initiative aims at promoting the use of evaluation in decision-making for

budget, programme and policies, through performance audits, monitoring reports and meta-evaluation as interim forms of evaluation.

### **Organisation of Monitoring and Evaluation in the sector**

The Planning Unit of the Ministry of Education would be responsible for overseeing monitoring and evaluation, of the implementation and results of the sector's strategic plan. The unit will be supported by an M&E committee that will review progress. This committee will be convened by the Minister of Education/Permanent Secretary and will be comprised of the Chief Education Officer, Deputy Chief Education Officers and Other Senior Education Officials. On a national level, the National Advisory Committee that will be revitalized by way of the Education Act will be another committee to which progress reports are made.

**Routine Monitoring:** This will vary with the particular activity or programme and according to the schedule in the specific action plan, but there will be at least two reporting sessions per year.

**Annual reviews:** The annual review will consolidate information from the biannual reporting sessions. This information will be used to identify critical initiatives that need to be undertaken in the next year and to make decisions about changing the implementation of activities and initiatives.

**Mid-term reviews:** This will occur midway in the plan period. It will allow the Ministry to assess the likelihood of achieving some of the strategic objectives and, as necessary, modify the designs of interventions, their implementation arrangements, or their objectives.

Table VIII.1 shows the results framework for the outcomes of the ESP. This table is intended to convey the plan for the design of the results-based Monitoring and Evaluation system of the Ministry of Education. It includes the overall outcomes and the six interim outcomes sought by this ESP over the next five years.

**Table VIII.1.** Results framework for the Outcomes of the 2014-2018 Guyana Education Sector Plan

<b>Long-term Strategic Outcomes</b>							
<b>Strategic Outcome</b>	<b>Outcome Indicator(s)</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
Learning achievements in language, mathematics, and science at the primary and secondary levels of education increased and emphasis placed on decreasing differences in performance between sub-groups (Hinterland and coastal).	% of Grade 4 students who are at Mastery level on the Literacy assessment by 2018.	15% (2013)	20%	28%	38%	45%	50%
	Proportion of Grade 6 students gaining 50% or more in core subjects	22% (2013)	25%	30%	35%	40%	40%
	Percentage of Grades 1 to 3 CSEC passes in Mathematics, English and Science in public secondary schools improves.	51% (2013)	53%	55%	57%	60%	60%



<b>Intermediate outcome 1: Performance of government departments responsible for ESP priorities is improved</b>								
<b>Strategic Initiative</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
Initiative 1.1. Conduct organizational audit of central and regional MoE departments	Number of Departments audited.	Output	To be determined	Process of department audit started	Selected department audit conducted.	Audits of departments completed		
Initiative 1.2. Build capacities for departments selected for capacity building via organizational audit.	Percent change in number of units/departments meeting annual targets improves over the ESP period	Outcome	<p>Departments with low capacities for implementing key initiatives identified.</p> <p>Audit establishes baseline for number of staff whose qualification match their TORs.</p> <p>Measurement of each unit's achievement of its annual targets is needed in order to measure if overall performance is improving over the ESP period.</p>	Action plan based on findings of the audit developed for at least four (4) departments.	All departments/units have a results framework in place that demonstrates the use of data in meeting and reporting annual targets	50% of audited departments, qualification & competence matches their TOR.	75% of units/departments meeting annual targets	85% of units/departments meeting annual targets.

<b>Intermediate outcome 2: Accountability system focused on improving student learning outcomes is put in place</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 2.1.</b> Learning assessments and examinations revised to reflect changes in curricula.	Percent change in examinations/assessments administered that are aligned with revised curricula.	Outcome	No baseline information is available at this time.	Review of the current process of assessment, 20% completed	Review of the current process of assessment, 100% completed.	Examinations are aligned with revised curricula for Science, Mathematics, Social Studies and English for Grades 1-3.	Examinations are aligned with revised curricula for Science, Mathematics, Social Studies and English for Grades 4-6 & 7-9.	All national examinations (2, 4, 6 and 9) are aligned with revised curricula.
<b>Initiative 2.2.</b> Develop alternative methods of assessment depending on methodologies use to teach the subject and for students who have special education needs.	Percentage of SEN children participating in national assessments.	Outcome		Appropriate methods, as per disability, identified.	Appropriate methods of assessment for primary level established.	Appropriate methods for secondary level established		
<b>Initiative 2.3.</b> Use item analyses of results of student assessments to identify areas of student weaknesses and use these analyses to prepare teacher training materials and special teacher in-service training sessions to help teachers address these weaknesses.	Percent change in training modules developed that are aligned with results of item analysis of teachers' weaknesses.	Output	The results of the Item analysis done in 2014 will be the baseline.	Item analysis of primary grade assessment in Science, English, Social Studies & Mathematics completed	CPD training modules/programmes are aligned with results of item analysis.	20% training modules/programmes are based on results of item analysis.	40% training modules/programmes are based on results of item analysis.	90% learning weaknesses identified in item analyses of results will be addressed through In-service and CPD programmes

<b>Intermediate outcome 2: Accountability system focused on improving student learning outcomes is put in place</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 2.4.</b> Participate in one of the regional or international learning assessments that assess student performance prior to when the CSEC is administered.	Number of learning assessment identified.	Output	0		Regional/International learning assessment identified.	Preparatory work for participation in regional/international assessment completed.	Guyana participating in the regional/international assessment at Grade 9.	
<b>Initiative 2.5.1.</b> Increase the percentage of schools with fully constituted and functioning PTAs, School Boards and Student Councils.	Percent change in schools with fully constituted and functioning PTA/School Boards & student councils.	Output	20%	25%	30% of schools have fully constituted, functioning PTA/School Boards and Student Councils.	40% of schools have fully constituted, functioning PTA/School Boards and Student Councils.	60% of schools have fully constituted and functioning PTA/School Boards and Student Councils.	80% of schools have fully constituted and functioning PTA/School Boards and Student Councils.
<b>Initiative 2.5.2.</b> Develop capacities of PTAs/SIACs to monitor observable aspects of the schools (e.g., quality of facilities) and to use school report card data to advocate for changes that they believe will lead to better results.	Percent change in PTAs/SIAC trained to monitor observable aspects of schools.	Output	The baseline will be derived from the first set of PTAs that reports observable aspects.		30% of PTAs/SIAC capacities to monitor observable aspect developed.	40% of PTAs/SIAC capacities to monitor observable aspect developed	60% of PTAs/SIAC capacities to monitor observable aspect developed	80% of PTAs/SIAC capacities to monitor observable aspect developed.

<b>Intermediate outcome 2: Accountability system focused on improving student learning outcomes is put in place</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 2.5.3.</b> To prepare schools to assume more autonomy and responsibility for certain process decisions, help schools and PTAs construct school improvement plans (SIPs).	Percentage of schools that prepare SIPs to improve school performance.	Outcome	39% overall, but it accounts for 77% of primary schools.	39%	45% of schools with developed SIP.	50% of schools with developed SIP	60% of schools with developed SIP	70% of schools with developed SIP
<b>Initiative 2.6.1.</b> Put school report cards and national report cards in place. School report cards will include learning outcome scores at national assessments, rates of teacher absenteeism, rates of student absenteeism, and perhaps the results of engineering audits and follow-up upgrading.	Percent change in school report cards published.	Output	0		30% of primary and secondary schools report cards published	50% of primary and secondary schools report cards published	60% of primary, nursery and secondary schools report cards published	80% of primary, nursery and secondary schools report cards published

<b>Intermediate outcome 2: Accountability system focused on improving student learning outcomes is put in place</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 2.6.2.</b> Establish MoE strategic communication programme to sensitize public to important education issues; explain and promote MoE positions; and build collaborations between stakeholders and MoE	Percent change in Parental Participation in PTA and other related school activities.	Outcome	0	Printed and web-based materials for ECE developed and disseminated. <i>(To be continued through the plan period)</i>	Open-days in schools hosted.  Science and TVET fairs hosted <i>(To be continued through the plan period)</i>	Parenting & Family literacy interactive seminars conducted	Community reading programs conducted	
<b>Initiative 2.6.3.</b> Use PTA Coordinating Unit as means through which concerns of PTAs can be brought to attention of senior education officials.	Develop the concept of the main function of the PTA Unit.	Output	0	Develop the concept of the main function of the PTA Unit.				

<b>Intermediate outcome 3: Quality of school facilities improves relative to MOE Standards</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 3.1.</b> MoE reviews and, as needed, revises quality standards for physical condition of schools.	Percent change in schools that meet MOE standards in a given year.	Outcome	Audit provides baseline.		All regional works departments sensitized on non-academic standards by buildings unit.			
<b>Initiative 3.2.</b> Using MoE standards, regional departments conduct an condition survey of all schools that includes assessments of, inter alia: a) quality of school walls, roof, and floor and structural integrity; b) availability of desks, chairs, tables; c) availability of clean water; d) availability and quality of sanitary facilities for teachers and students; e) availability of power and of non-fossil fuel sources of power; f) quality of dormitory facilities where present ;and g) presence and quality of teacher houses in remote areas.	Percent change in regions with completed physical condition surveys.	Output			Physical condition survey for Regions 3, 4, 8 and 9 conducted.	Physical condition survey for Regions 7, 1 6 and 10 conducted.	Physical condition survey for Regions 2 and 5 conducted .	85% schools in all regions, in fair to good condition.
<b>Initiative 3.3.</b> Regional departments submit annual budget requests and annual targets for upgrading sub-standard facilities to standard.	Percentage change in sub-standard schools identified.	Output			Regional depts. for 3, 4, 8 and 9 budget request for sub-standard schools approved by MOE.	Regional depts. for 7, 1, 6 and 10 budget request for sub-standard schools approved by MOE.	Regional depts. for 2 and 5 budget request for sub-standard schools approved by MOE.	

<p><b>Initiative 3.4</b> Regions will be assisted to develop preventative maintenance plans for schools.</p>	<p>Percent change in schools with preventative maintenance plans.</p>	<p>Outcome</p>				<p>50% of schools in all regions with preventative maintenance plans developed.</p>	<p>75% of schools in all regions with preventative maintenance plans developed.</p>	
<p><b>Initiative 3.5</b> Additional places at secondary and nursery will be created, through construction of three (3) secondary schools in Regions 3 &amp; 4 and eight (8) nursery schools in Regions 3, 4 and GT.</p>	<p>Number of nursery schools built.  Number of secondary schools built.</p>	<p>Output</p>		<p>3 Nursery schools constructed</p>	<p>2 Nursery schools constructed; two secondary schools constructions commenced.</p>	<p>2 Nursery schools constructed; One secondary school construction commenced.</p>		

<b>Intermediate outcome 4: Quality of teaching is improved</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 4.1.</b> Improve the quality of teaching through sustaining and intensifying initial teacher training across levels each year.	Percent trained teachers across levels.	Output	69% trained teachers across levels.	71% trained teachers across levels.	73% trained teachers across levels.	75% trained teachers across levels.	77% trained teachers across levels.	79% trained teachers across levels.
<b>Initiative 4.2.</b> Establish MoE's professional standards to determine who enters teacher training and who is hired into teaching.	Percent of the new entrants to teaching that meet the professional standards.	Outcome	Based on implementation of the new standards.		60% of new entrants into teaching meet professional standards.	70% of new entrants into teaching meet professional standards	80% of new entrants into teaching meet professional standards	90% of new entrants into teaching meet professional standards
<b>Initiative 4.3.</b> To off-set shortages of qualified teachers in particular subjects, NCERD and expert consultants will prepare lessons in various subjects, but especially in science and mathematics, that are beamed directly to students in classrooms through the Broadcast to Schools programme, the education TV channel, DVDs, or the internet.	Percentage of primary and secondary schools that have access to supportive materials in science and mathematics.	Outcome	7% of primary and secondary schools have access to supportive materials in science.		20% of primary and secondary schools with access to supportive materials in Math and Science.	40% of primary and secondary schools with access to supportive materials in Math and Science.	60% of primary and secondary schools with access to supportive materials in Math and Science.	80% of primary and secondary schools with access to supportive materials in Math and Science.
<b>Initiative 4.4.</b> The Ministry will set targets for increasing the number and subject specializations of teachers in remote hinterland and riverine schools and expand the incentives to attract teachers to meet these targets.	Number of hinterland teachers awarded scholarship	Output	To be determined		20 persons selected and approved for scholarship in specialized subjects			Twenty (20) additional teachers specialized in English, science and math



								in the hinterland regions
<b>Initiative 4.5</b> Sample lesson plans and other instructional material will be prepared for teachers, in particular at nursery and primary levels, together with guides on how to use these resources so that teachers are better prepared to utilize the instructional period more effectively.	Percent change in teachers who are better prepared to utilize the entire instructional period.	Outcome	To be established in 2014 after initial distribution of guides	Lesson plans prepared for selected grades in science.	Lesson plans prepared for selected grades in mathematics and ECE.	Lesson plans and guides for Mathematics and science completed for all primary grades		Lesson plans and guides for all core subjects completed for all primary grades and ECE.
<b>Initiative 4.6.</b> A post graduate programme will be designed that prepares candidates for the position of head teacher. The program will include training in how to observe and improve the performance of teachers in their schools. It will establish criteria for competitively selecting applicants into the programme.	Percentage change in Head teachers with post graduate qualifications.	Output			Programme/s identified or developed after careful analysis of Guyana's needs	Establish the criteria for selection and structure of the course to be offered	Candidates selected and start programme/s	
<b>Initiative 4.7.</b> Systematize and significantly upgrade the quality of continuous professional development of teachers.	Percent of teachers utilizing concepts acquired through CPD in the classroom	Outcome		Conduct assessment of teachers' CPD needs in the regions.	Develop courses based on training needs assessments.			

<b>Intermediate outcome 4: Quality of teaching is improved</b>									
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>	
<b>Initiative 4.7.1.</b> Improve quality of mathematics teaching at all levels	Number of Mathematics teachers trained	Output	Yes.	50 teachers across all education districts trained.	100 teachers across all education districts trained	All teachers nursery and grade 1 & 2 classes for hinterland and 10% of nursery classes in coastal regions. Grades 3-5 teachers in 10 primary pilot schools trained in the use of the kits. 150 teachers across all education districts trained	All teachers nursery and grade 1 & 2 classes for hinterland and 15% of nursery classes in coastal regions. Grades 3-5 teachers in 10 primary pilot schools trained in the use of the kits.	All teachers nursery and grade 1 & 2 classes for hinterland and 20% of nursery classes in coastal regions. Grades 3-5 teachers in 10 primary pilot schools trained in the use of the kits.	
	<b>Initiative 4.7.2.</b> Improve the quality of literacy teaching at all levels	Number of Early Childhood teachers trained							Output
	<b>Initiative 4.7.3.</b> Improve the quality of science teaching at the primary and secondary levels	Number of primary teachers trained in science.							Output
	Number of secondary science teachers trained	Output		200 teachers trained in aspects science curriculum at primary and secondary.	200 teachers trained in aspects science curriculum at primary and secondary.	200 teachers trained in aspects science curriculum at primary and secondary.	200 teachers across all education districts trained	200 teachers across all education districts trained	
							200 teachers trained in aspects science	1000 teachers trained in aspects science	

<p><b>Initiative 4.7.4.</b> Improve the quality of teaching in TVET at the secondary level.</p>	<p>Number of teachers trained in pedagogy</p> <p>Number of certified assessors.</p>	<p>Output</p> <p>Output</p>		<p>30 teachers from secondary and post-secondary institutions trained in pedagogy</p> <p>Teachers in 10 pilot secondary schools certified as assessors.</p>	<p>100 post-secondary &amp; secondary teachers exposed to pedagogical training;</p> <p>All full-time instructors/lecturers in TVET institutions certified as assessors.</p>	<p>100 post-secondary &amp; secondary teachers exposed to pedagogical training;</p> <p>All teachers offering SCCP/CVQ programmes in school certified as assessors.</p>	<p>science curriculum at primary and secondary.</p> <p>100 teachers exposed to pedagogical training.</p> <p>50% secondary school teachers possess full certification requirement.</p>	<p>curriculum at primary and secondary.</p>
<p><b>Initiative 4.7.5.</b> Improve the quality of life skills teaching and teaching for SEN students.</p>	<p>Number of training courses conducted in special needs that are based on needs assessments</p>	<p>Output</p>		<p>Conduct training needs assessment in all special schools</p>	<p>Develop training programme based on analysis; Conduct training in regions 2 and 10</p>	<p>Conduct training in regions 1 &amp; 8</p>	<p>Conduct training in</p>	<p>All full-time TVET teachers in secondary and post-secondary schools certified as assessors and in possession</p>

							regions	the full certification requirement.
<b>Intermediate outcome 5: Teaching-learning materials/ instructional tools/ assisted devices aligned to facilitate better learning outcomes</b>								
Strategic Initiative(s)	Indicator(s)	Indicator Type	Baseline data	Year 1 Target (2014)	Year 2 Target (2015)	Year 3 Target (2016)	Year 4 Target (2017)	Year 5 Target (2018)
<p><b>Initiative 5.1.</b> MoE will contract persons, including Guyanese and Caribbean professionals, with international expertise to help the Ministry benchmark the curriculum by grade and subject against regional/international standards that characterize more versus less effective curricula: content standards, performance expectations for students and teachers, coherence, and efficiency.</p> <p><b>Initiative 5.2.</b> Curricula will be revised in all the subject areas in accord with evaluation results. Priority will be given to the core subjects at the primary level but in the light of social challenges emphasis will also be placed on reviewing the HFLE curriculum for relevance.</p>	<p>Percent change in subjects aligned with international standards.</p> <p>Develop appropriate HFLE material for nursery level; curriculum for primary and secondary reviewed for relevance.</p>	<p>Outcome</p> <p>Output</p>	0	<p>Review of primary curricula by local practicing teachers completed. Review of Grades 7 – 9 science curricula started.</p>	<p>International/regional standards, against which local curricula will be compared, identified. Standards for mathematics Grades 7 to 9 established</p> <p>Develop appropriate HFLE material for nursery level; curriculum for primary and secondary reviewed for relevance.</p>	<p>Standards for mathematics, English, science, social studies, Grades 7 to 9 established.</p>	<p>Curriculum in all core subjects aligned with established standards.</p>	<p>Evaluation of the new approaches /curriculum for HFLE at the various levels.</p>

<p><b>Initiative 5.3.</b>As an integral part of its curricula reform the Ministry will ensure that curricula are adapted for children with special education needs.</p>	<p>Adaptation of curricula for SEN students in core subjects.</p>	<p>Output</p>					<p>Adaptation of curricula for SEN students in core subjects.</p>	
<p><b>Initiative 5.4</b> Textbooks and curricula for training programmes reviewed and modified to meet requirements of new curricula</p>	<p>% change in textbooks in the core subject that reviewed and modified</p>	<p>Output</p>			<p>Textbooks and learning material in Science reviewed and changes made if needed</p>	<p>Texts in other core subjects reviewed and changes made if needed</p>		
<p><b>Initiative 5.5.</b>As a check on the reliability of its logistics chain, the Ministry will monitor and whether adequate teaching and learning tools reach schools and classrooms in a timely fashion and review if necessary.</p>	<p>% of schools that receive text and exercise books at the beginning of the school term</p>	<p>Outcome</p>			<p>Existing system for distribution of text-books/learning materials assessed.</p>	<p>Improved distribution systems implemented.</p>		

<b>Intermediate outcome 6: Students' instructional time increases</b>								
<b>Strategic Initiative(s)</b>	<b>Indicator(s)</b>	<b>Indicator Type</b>	<b>Baseline data</b>	<b>Year 1 Target (2014)</b>	<b>Year 2 Target (2015)</b>	<b>Year 3 Target (2016)</b>	<b>Year 4 Target (2017)</b>	<b>Year 5 Target (2018)</b>
<b>Initiative 6.1.</b> To reduce the costs of education for poor families and thus to encourage them to keep their children in school, the Ministry will continue and enhance welfare measures such as providing free exercise and text books, school uniforms, and school feeding programmes.	Percent change in attendance rate at Nursery, Primary and Secondary, including children with SEN.	Outcome		2 percent change in attendance.	2 percent change in attendance.	5 percent change in attendance.		
<b>Initiative 6.2.</b> After consultation with families, schools, and regional government offices, flexible school schedules may be introduced in some regions/sub regions to reduce student absenteeism attributable to rainy seasons (e.g., in Region 9), low water that prevents travel by boat (Region 1), and weeks when children are needed to help in harvesting crops.	Number of consultations held on flexible school hours in hinterland and riverine communities	Output		Consultation conducted in hinterland regions	Consultation conducted in all regions	Decision taken on instructional time base on consultation.		
<b>Initiative 6.3.</b> Guidance and Welfare Unit establishes a database that flags "at risk" and vulnerable children for purposes of organizing support for them.	Data collection mechanism established in all regions for primary and secondary	Output			Data collection mechanism established in all regions for primary and			

					secondary			
<b>Initiative 6.4.</b> The Guidance and Welfare Unit and the School Health Units provide support to at risk and vulnerable children, such as teenage mothers and children in difficult socio-economic circumstances, abusive homes, or affected by HIV/AIDS	Percentage change of “at risk” students who are benefitting from supportive health/welfare programmes.	Outcome		Policy for reintegration of teenage mothers developed	Referral mechanism established for students who are “at risk” and those in difficult socio-economic circumstances.			All teenage mothers reintegrated in the school system
<b>Initiative 6.5.</b> The SEN and School Health Unit will collaborate in identifying SEN children through screening and in providing educational support, for example, transportation, hiring of teacher aides, to SEN children.	Additional transport provided to SEN students in one special school.	Output	Yes		Additional transport provided to SEN students in one special school.			Number of teacher aides for special schools and schools with children with SEN increased by 30%.

## PART IX - Cost of ESP and Financing Options

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### Budget requirements for the sector plan by year

Table IX.1 shows the total estimated budget needs of the sector year of this five year plan. The total cost of this ESP over the five-year period, beginning in 2014, is G\$214.0 billion.

**Table IX.1.** Estimated Education Sector budget needs: 2014-2018 (G\$000)

2014	2015	2016	2017	2018
36,751,687	39,524,413	42,832,286	45,777,189	49,170,415

*Data Source: Education Costing Model 2013-2018*

### Costs by programme and line item

Table XI.2 shows the estimated costs of this plan by major programmes and line items. An Excel model using current costs as the base and taking into account key policies such as teacher/student ratio per class at each level, availability of textbooks, and other teaching learning resources per student, was used to calculate the future costs. Some line items, such as, Literacy and Numeracy, Early Childhood Education, Science and Technology and Post-Secondary (TVET) costing incorporated aspects of Training and Development, and Equipment and Learning Materials. In similar vein aspects of hinterland education improvement are costed under the specific subject areas. The model can also show costs by each level of education. Fifty five percent (55%) is recurrent cost while forty-five percent (45%) is capital cost associated with new/rehabilitated/ maintenance of infrastructure, purchase of equipment and tools and developmental projects.



**Table IX.2.** Costing of Education Sector Plan 2014-2018

Costing of Guyana Education Sector Plan 2014-2018	2014	2015	2016	2017	2018
01 Teacher Salaries	9,153,732,204	10,453,267,922	11,975,133,359	13,613,761,022	15,424,266,904
02 Teacher Training	423,993,214	437,724,488	454,174,256	466,705,116	483,517,245
03 Classrooms (infra new maint)	15,413,034,292	15,774,432,408	16,700,319,552	17,116,760,406	17,743,131,593
04 Sch. Administrative Staff Salaries	4,190,048,178	4,628,060,326	5,109,338,109	5,638,000,752	6,218,549,653
04 Prog. Administrative Staff Salaries	394,076,556	451,356,118	516,985,580	592,197,126	678,407,075
05 Text Books	269,239,452	283,337,618	297,435,785	311,533,951	325,632,118
06 Exercise Books	51,150,912	53,829,323	56,507,735	59,186,146	61,864,558
07 Learning Resource Ctrs - Hinterland	27,436,664	28,873,328	30,309,992	31,746,657	33,183,321
07 Learning Resource Ctrs - Coastal	7,386,794	7,773,588	8,160,383	8,547,177	8,933,971
08 School Feeding	1,461,924,964	1,435,224,075	1,454,417,781	1,450,277,963	1,445,486,185
09 Cont Prof Devmt (CPD)	31,657,689	33,315,379	34,973,068	36,630,758	38,288,447
10 Teacher Houses	52,762,816	55,525,631	58,288,447	61,051,263	63,814,078
11 Hinterland Education Imp.	15,828,845	16,657,689	17,486,534	18,315,379	19,144,223
12 Learning Materials (CDs, ICT, Science Modules, MPU, Test & Measurement)	94,149,082	99,079,004	104,008,925	108,938,847	113,868,769
13 Upgrading and Equip IT Labs	345,638,653	363,737,305	381,835,958	399,934,610	418,033,263
14 Upgrading and Equip Science Lab	131,907,039	138,814,078	145,721,117	152,628,156	159,535,195
15 Earlier Childhood Education	0	351,900,000	351,900,000	351,900,000	351,900,000
16 School Improvement plans	29,019,549	30,539,097	32,058,646	33,578,194	35,097,743
17 M&E	44,320,765	46,641,530	48,962,295	51,283,061	53,603,826
18 Special Education	142,459,602	149,919,204	157,378,807	164,838,409	172,298,011
19 Literacy and Numeracy Prog.	39,255,535	41,311,070	43,366,604	45,422,139	47,477,674
20 Secondary and Post-Sec (TVET)	2,638,140,781	2,776,281,563	2,914,422,344	3,052,563,125	3,190,703,906
21 School Maintenance	337,682,020	355,364,040	373,046,060	390,728,080	408,410,100
22 School Welfare Init.	11,605,709	12,213,418	12,821,127	13,428,836	14,036,545
23 School Health Education	18,994,614	19,989,227	20,983,841	21,978,455	22,973,068
24 Secondary Education Improvement	414,000,000	414,000,000	414,000,000	414,000,000	414,000,000
25 Miscellaneous (Subvention, Subsiby )	1,012,241,955	1,065,245,909	1,118,249,864	1,171,253,819	1,224,257,773
<b>Total Cost</b>	<b>36,751,687,882</b>	<b>39,524,413,340</b>	<b>42,832,286,167</b>	<b>45,777,189,446</b>	<b>49,170,415,245</b>

*Data source: Education Costing Model 2013-2018.*

## Major areas of expenditure

### *Employment Cost (G\$89.0 billion)*

Employment costs for teachers and administrative staff of the sector account for just under half (42%) of the overall cost of this ESP. Employment costs are projected to increase by an average of 6.5 percent per annum. This increase reflects possible increases in salary, the proposed increase in the number of trained teachers, and any salary increases associated with upgrading the skills of existing staff in the sector.

### *Training and Development (G\$2.4 billion)*

This cost is direct cost associated with initial teacher training and continuous professional development for all teachers across levels.

**Construction/rehabilitation of education buildings (G\$83.0 billion)**

The major expense under this item is associated with construction/rehabilitation of schools and teachers houses almost one third of this cost will be committed to rehabilitation/maintenance of schools, reinforcing the Ministry's commitment to its maintenance plan of maintaining 20% of hinterland schools and 15% of coastal schools per annum.

**School Feeding (G\$7 billion)**

This continues funding of the community-based hot meal programme in the hinterland regions started under the EFA-FTI programme and the national snack programmes which cover all other nursery school students and Grades 1 and 2 students at the primary level.

**Equipment and Learning Materials (G\$5.1billion)**

The emphasis is on improving the teaching-learning process, through the provision of textbooks, expanding the integration of ICT, promoting Inquiry Based Science Education (IBSE); the distribution of literacy tool kits into schools etc.

**Expenditure by level of education**

Table IX.3 shows the projected percentage share in education over the five-year period. This accounts for 95% of the overall projected costing of this plan. The remaining 5% is allocated to other initiatives that target support services of the sector, such as for welfare and school health and nutrition.

**Table IX.3 – Estimated Education Expenditure by level for 2014-2018 (G\$000)**

Level	2014	2015	2016	2017	2018	% average share per level
Nursery	3,386,880	3,908,199	4,513,157	4,582,090	4,859,906	10%
Primary	10,938,669	11,399,134	13,367,726	13,998,289	15,118,667	30%
Secondary <sup>1</sup>	20,581,130	22,238,817	22,831,535	24,925,755	26,758,603	55%

*Data source: Education Costing Model 2013-2018*

<sup>1</sup>The costs for the secondary level include those for TVET.

**Funding of the plan and the financing gap**

*Projected and committed donor contribution to education.* The sector continues to benefit from development partners contribution. This period is no exception. Table IX.4 shows continued donor commitment to various initiatives articulated in the plan.

**Table IX.4 – Development Partners’ Commitments Education Sector Plan 2014-2018 (\$US)**

Donor	2014	2015	2016	2017	2018
World Bank	2,912,242	7,779,629	1,151,764	1,321,624	
CDB		354,768	1,500,000		
UNICEF	278,000	300,000	300,000	300,000	300,000
UNESCO		30,000	30,000	30,000	30,000
GPE		700,000	850,000	150,000	
<b>Total</b>	<b>3,190,242</b>	<b>9,164,397</b>	<b>3,831,764</b>	<b>1,801,624</b>	<b>330,000</b>

Notes:

1. The estimated support from the World Bank includes the final year of the GITEP project and the estimated expenditure on the Secondary Education Improvement Project (SIEP).
2. CDB support through the Basic Needs Trust Fund is for infrastructural work on schools (mainly rural and hinterland) at nursery, primary and secondary levels. There is also the possibility for assistance for training to support persons with SEN.
3. Support from the UN agencies is estimated at the average over the last plan period.

*Total resources, costs, and funding gap.* Table IX.5 shows the funding from Government and from external international sources expected for the sector across the 2014-2018 plan period, the resources required to achieve the six strategic outcomes of the plan, and the financing gap. The financing gap is stated in both G\$ and US\$.

As seen in Table 1.2 in Part I of this document, the budgetary allocation to education was maintained at 15 percent of the national budget and approximately 5 percent of GDP. The budgetary allocation to education from national funds is estimated to increase by approximately 5 percent annually. The Ministry of Education feels that this plan is financially feasible based on the budgetary trend for education in Guyana over the last five years. This table does show a financing gap between expected resources and required resources, revealing the need for additional support by the Development partners. Since the plan's emphasis on quality and improved student learning outcomes is supported by many of these partners, it is expected that the plan will garner some support.

**Table IX.5 – Budget Forecast and Financial Gap 2014-2018**

Item	2014	2015	2016	2017	2018
Budget Forecast <sup>1</sup> (G\$)	32,741,435,000	35,142,683,000	38,149,485,000	41,879,738,000	46,486,509,000
Resources Required (G\$)	36,751,687,882	39,524,413,340	42,832,286,167	45,777,189,446	49,170,415,245
Financing GAP (G\$)	-4,010,252,882	-4,381,730,340	-4,682,801,167	-3,897,451,446	-2,683,906,245
<b>Financing Gap<sup>2</sup> (US\$)</b>	<b>(19,373,202.32)</b>	<b>(21,167,779.42)</b>	<b>(22,622,227.85)</b>	<b>(18,828,267.85)</b>	<b>(12,419,531.23)</b>

*Data source: Education Costing Model 2013-2018*

<sup>1</sup> The Budget Forecast includes both projected Government funding and donor commitments for the plan period.

<sup>2</sup> The gap in US\$ was estimated at an exchange rate of G\$207.

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## ANNEX 1: Organisations/Institutions Consulted and Summary of Issues Most Frequently Raised

Organizations/Institutions consulted	Issues most frequently raised
<ol style="list-style-type: none"> <li>1. Guyana Society for the Blind</li> <li>2. National Commission on Disabilities</li> <li>3. Deaf Association of Guyana</li> <li>4. David Rose School for the Handicapped</li> <li>5. Diamond School for Students with Disabilities</li> <li>6. Linden School for Students with Disabilities</li> <li>7. New Amsterdam School for Children with Disabilities</li> <li>8. Ptolemy Reid Rehabilitation Centre</li> <li>9. Guyana Community Based Rehabilitation Programme</li> <li>10. Ruimveldt Parent Support Group</li> <li>11. Guyana Council of Organisations for Persons with Disabilities</li> <li>12. LINSEED Foundation</li> <li>13. Port Kaituma Secondary</li> <li>14. Waramuri Primary</li> <li>15. New Amsterdam Secondary</li> <li>16. Cumming's Lodge Secondary</li> <li>17. Canjie Secondary</li> <li>18. Wauna Primary</li> <li>19. Queens College</li> <li>20. Bartica Secondary</li> <li>21. St Ninian's Primary</li> <li>22. Matthew's Ridge</li> <li>23. Arakaka Primary</li> <li>24. North R/veldt Secondary</li> <li>25. Sacred Heart Primary</li> <li>26. Leonora Secondary</li> <li>27. West R/veldt Primary</li> <li>28. Yarakita Primary</li> <li>29. North R/veldt Secondary</li> <li>30. Parika/Salem Secondary</li> <li>31. Marlborough Primary</li> <li>32. Kariako Primary</li> <li>33. Mabaruma</li> <li>34. Paramakatoi</li> <li>35. Aurora Primary</li> <li>36. Central Corentyne Secondary</li> <li>37. Santa Cruz Primary</li> <li>38. Abram Zuil Secondary</li> </ol>	<p><u>Special Education Needs (SEN)</u></p> <p>Issues raised by participants during four national consultation meetings specifically to discuss SEN fell into the following categories:</p> <p><u>Equal access to schools for children with SEN:</u> Lack of appropriate furniture in schools; limited accessibility to classrooms, washrooms in "regular schools"</p> <p>Inadequate places in special need schools (over 200 children on a waiting list at one school).</p> <p><u>Teacher Training:</u> Need for all teachers to have exposure to some training to deal with students with SEN; Need for teachers trained in Sign Language and Braille; More specialised training to deal with some developmental disabilities; need for more teacher aides in both special schools as well as schools into which students with SEN are mainstreamed; lack of promotional opportunities for SEN teachers</p> <p><u>Curriculum, Assessments and Examinations:</u> Lack of appropriate learning material, equipment; teaching aids and adaptive devices; need to adapt the curriculum for learners with SEN; need to extend the curriculum to include music, dance and water activities which can help to increase mobility; Need for assessments in a different format for some learners with SEN; Need for more time in assessments/examinations for students with SEN; Need to provide technical and vocational skills for students with SEN; post-secondary opportunities very limited; need for more supervision and support to teachers of SEN.</p> <p><u>Parental issues:</u> Insufficient information available, to parents of children with SEN, on education options; children with SEN can be a serious financial burden on poor families e.g. need for special transportation, medical bills, adaptive devices etc.; parental ignorance or denial of problems that delay opportunities to provide special assistance to children.</p>

<p>39. Madhia Secondary          40. Morashee &amp; N/ Hogg Isl          41. Diamond Secondary          42. St Monica Primary          43. Skeldon Primary          44. Goed Fortuin Primary          45. Hope Secondary</p>	
<p>46. Leguan Secondary          47. BV/ Quamina Primary          48. Yarakita Primary          49. North R/veldt Secondary          50. Parika/Salem Secondary          51. Marlborough Primary</p>	<p><b>General Meetings with Parent, Teachers          Community Members</b>  <i>Parents and Community members</i></p> <p>Why are more children not getting 50% and over at the          NGSA.</p>



<p>52. Kariako Primary  53. Mabaruma  54. Paramakatoi  55. Aurora Primary  56. Central Corentyne Secondary  57. Santa Cruz Primary  58. Abram Zuil Secondary  59. Madhia Secondary  60. Morashee &amp; N/ Hogg Island  61. Diamond Secondary  62. St Monica Primary  63. Skeldon Primary  64. Goed Fortuin Primary  65. Hope Secondary  66. Leguan Secondary  67. BV/ Quamina Primary  68. JC Chandisingh Secondary  69. St. Mary's Primary  70. Patentia Secondary  71. Essequibo Islands Secondary  72. Sand Hills Primary  73. Charity Primary  74. Skeldon Line Path Secondary  75. West Demerara Secondary  76. Rosignol Secondary  77. Howell Wilson Primary  78. South Amelia's Ward Nursery  79. Santa Rosa Primary  80. Bath Primary  81. Wisroc Nursery  82. Mackenzie High  83. Wismar Hill Primary  84. Belladrum Secondary  85. Mahaicony Secondary  86. Christianburg Wismar Secondary  87. Howell Wilson Primary  88. Aishalton Secondary  89. Karasabai Primary  90. Paramakatio Secondary  91. Annai Secondary  92. Sand Creek Secondary  93. Madhia Secondary  94. St Ignatius Secondary  95. JC Chandisingh Secondary  96. Tagore Memorial  97. Berbice High</p>	<p><u>Concern:</u> Children leaving primary and secondary school with poor literacy skills.</p> <p><u>Concern:</u> Poor performance in mathematics at both primary and secondary levels. In region 9 parents made the suggestion about specialist mathematics teachers at the primary level.</p> <p><u>Regularity of attendance by teachers:</u> Too many teachers released to attend university at the same time; teachers absent for other reasons, teachers not punctual.</p> <p><u>Equal access</u> to quality education regardless of where they live. Related to this were issues of the proportion of trained teachers, access to books, innovative technology (computers, televisions, the Learning Channel etc.). In hinterland regions parents complained about the timeliness of receipt of text and exercise books.</p> <p><u>Repetition:</u> Most parents and teachers who attended the meetings were against automatic promotion.</p> <p><u>Corporal Punishment:</u> Many parents and teachers support the practice.</p> <p>Schools must be safe and secure places with a good physical environment and with access to basic utilities (access to water, electricity and good sanitary facilities most frequently mentioned). Concerns were expressed in many places about violence in schools.</p> <p><u>Caring and competent teachers needed.</u> Fair treatment for all their children.</p> <p>Parents want their children to pass examinations. Some parents want to have more information about the affairs of the school. In some meetings parents asked if they could be a part of workshops (mainly at nursery and primary levels) when new things were being introduced.</p>
<p>98. Canje Secondary  99. Annai Secondary  100. Sand Creek Secondary  101. Madhia Secondary</p>	<p>Multi grade schools should not have just one teacher.</p> <p>Dormitory facilities: Need to improve physical facilities, provide better after school services and</p>

<p>102. St Ignatius Secondary  103. JC Chandisingh Secondary  104. Tagore Memorial  105. Berbice High  106. Canje Secondary  107. Charity Primary  108. 8<sup>th</sup> of May Secondary  109. Sparta Primary  110. Taymouth Manor Primary  111. Abram Zuil Secondary  112. Suddie Primary  113. Aurora Primary  114. New Diamond/Grove Primary  115. Gold Grove Primary  116. Smyth Street Nursery  117. South Road Nursery  118. Stella Maris Primary  119. Kumu Village  120. Kaicumbay Village  121. Arapaima Village  122. Moco Moco Village  123. Quarrie Village  124. Yupukari Village  125. Fly Hill Village  126. Katoka Village  127. Hiawa Village  128. St. Ignatius Village  129. Quatata Village  130. Education System Committee (ESC)  member Region 9  131. Nappi Village  132. Parishara Village  133. Katoonarib  134. Shulinab  135. Rupunau  136. Sawariwau  137. Shiriri  138. Sand Creek  139. Katuur</p>	<p>programmes; need for better trained Dorm mothers and fathers.</p> <p>Request for TVET Programmes in hinterland communities.</p>
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## **ENDNOTES: Technical Notes on Factors that Affect Learning Outcomes**

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<sup>a</sup> Woessmann et al. (2008) describe the structure of accountability systems and their theoretical rationale. These systems generally consist of three components: achievement standards, measurement of student achievement, and consequences for measured achievement. These consequences may be positive (rewards) or negative (sanctions), and they may be implicit (e.g. the respect of peers) or explicit (e.g. cash bonuses). Their target may be any stakeholder in the education process, including students, teachers, and schools.

From a theoretical viewpoint, the provision of schooling can be understood as a network of principal/ agent relationships in which a principal (e.g. parents) commissions an agent (e.g. the head of a school) to perform a service (the education of the child) on the principal's behalf. Principal-agent theory identifies unequal access to information and divergent interests as the main sources of difficulties in principal/agent relationships. If the agent's interests diverge from those of the principal, and if the information on the agent's real performance is available only to the agent, then the agent may pursue his own interests instead of those of the principal. The principal will remain unaware of this behavior and thus unable to sanction it. Unfortunately, such principal-agent problems pervade school systems.

As a consequence, theoretical models of educational production predict that setting clear performance standards and providing performance information can tilt incentives in favor of superior student achievement. For example, if schools use performance assessments to make decisions about students' retention or promotion, students may have greater incentives to learn and perform well.

<sup>b</sup> External exit examinations and teachers' use of regular learning assessments to decide whether to promote or retain each student create incentives for students to work harder. The results on external exit examinations, published school report cards on the learning achievements of students in each school (and, to a lesser extent, published national report cards), and monitoring of teachers' lessons by head teachers/principals and by external inspectors focus teachers and head teachers on improving the learning outcomes for their students. Often through embarrassment, published national report cards on the learning achievements of the country's students relative to comparator nations create incentives for ministries of education to find ways to improve the record.

<sup>c</sup> The effect of each device is independent of that of other devices--for example, monitoring of teachers' lessons by external inspectors has positive effects on student achievement even after taking into account whether the teachers are also monitored by head teachers or principals.

<sup>d</sup> The authors also measured the effects on learning if the results of learning assessments are used to group or "track" students. Consistent with findings from multiple studies, this device depresses learning achievements by more than head teachers' monitoring teachers' lessons increases them. Tracking students into programs that differ in their academic standards, such as academic programs, secondary TVET programs, and basic vocational programs, significantly increases the between-school variation in learning achievements. The clustering of students with

particular socio-economic characteristics is greater in countries with differentiated programs than in systems where the curriculum does not vary significantly between schools. Students from poorer families tend to choose or be directed to programs or schools with less demanding study programs. This socio-economic clustering effect compounds the effects of less demanding programs for the following reason. The impact of the overall social background of a school's intake on student performance is greater than the impact of the individual student's social background. Thus, students from a lower socio-economic background attending schools in which the average socio-economic background is high tend to perform much better than when they are enrolled in a school with a below-average socio-economic intake.

<sup>e</sup> School autonomy or the decentralization of decision-making power can be understood as the delegation of a task by a principal, such as a central Ministry of Education, who wishes to facilitate learning in the school system to agents, namely the schools (Woessmann, 2005; Woessmann et al., 2007). The theory behind school decentralization also involves principal-agent theory. Principal-agent relationships need not always be a "problem": in the absence of divergent interests or asymmetric information, agents can be expected to behave in conformity with the objectives. In fact, economic models of school governance often suggest that greater autonomy can lead to increased efficiency of public schools (e.g., Hoxby 1999; Nechyba 2003).

Only where both divergent interests and asymmetric information are present do agents have incentives and opportunities to act in an opportunistic way without risk that such behavior will be noticed and sanctioned. The danger of opportunism by decentralized decision-makers is thus limited to those decision-making areas in which their interests diverge from the objective of increasing students' learning. This is, for instance, possible whenever the decision concerns the financial position or the workload to be fulfilled by the schools. In such cases, it is rational for the school decision-makers to favor their own interests over the promotion of student achievement as long as possible monitoring agencies such as school boards or parents have imperfect information about the actual behavior of the schools.

In view of the decentralized character of educational provision, there is almost always a high degree of information asymmetry about school behavior. Nevertheless, it can be at least partially overcome by external exams that supply comparable information about student achievement. An additional crucial point is that in many decision-making areas, local decision-makers may know much better than a central agency ever could how education services can be most efficiently provided. For example, teachers are likely to have superior knowledge of how to teach their specific students a specific subject. This local knowledge lead can make provision by local agents more efficient than by central planning authorities.

But the decisive factor is whether these local decision-makers also have the incentive to exploit their local knowledge in providing educational services. This will be the case only when others become aware of whether they have made the effort to utilize their local knowledge – i.e., only when information asymmetries are bridged, for instance by external exams (Woessmann et al., 2007.)

<sup>f</sup> Glewwe et al. (2011) is the source of results of methodologically rigorous studies on the effects of various school inputs on students' learning achievements. Glewwe and his colleagues conducted a meta-analysis (systematic combining of results from multiple studies) of reports that examined the effects of school and teacher variables on learning outcomes. The meta-analysis was based on studies of primary and secondary schools published from 1990 to 2010 and on working papers since 2005. They started with 9000 reports, winnowing these down to 112 reports by eliminating papers that did not focus on developing countries, did not estimate the impact of a school/teacher-level variable on students' educational outcomes, or did not include quantitative analyses. This sample of 112 studies was further reduced to 43 high quality studies that avoided or minimized bias, the most common sources of bias being omitted variable bias, sample selection, endogenous program placement, and measurement errors.

<sup>g</sup> Teasing out the contribution of teaching quality to student learning has proved difficult because of the huge selection biases that arise from the non-random assignment of students and teachers to schools and students to teachers. Most serious attempts to confront the selection bias problem have been conducted in developed countries. Value-added assessments have been useful, but the "gold standard" for detecting effects is randomized control trials (RCTs). For obvious reasons, RCTs that randomly assign teachers to schools and classrooms and students to classrooms (and sometimes schools) are very rare.

One such study, the Tennessee Project STAR (Student-Teacher Achievement Ratio) experiment in the United States, randomly assigned kindergarten students and students in grades 1-3 to classrooms and teachers to these classrooms. The results of this experiment were more likely to generalize across differences in contexts because the study involved students in 79 elementary schools in 42 school districts that included large urban districts and small rural ones and a range of wealth ranging from some of the wealthiest school districts in the country to some of the poorest.

Analyses of these data (Nye et al., 2004) found substantial differences among teachers in their abilities to produce achievement gains in their students. If teacher effects are normally distributed, the difference in achievement gains between having a 25th percentile teacher (a not-so-effective teacher) and a 75th percentile teacher (an effective teacher) was over one third of a standard deviation (0.35) in reading and almost half a standard deviation (0.48) in mathematics. Learning outcomes varied more by teacher than by school, implying that which teacher a student happens to get within a school matters more than which school the student happens to attend.

<sup>h</sup> Comparative studies of the mathematics and science curricula of over 40 countries found that the curriculum can promote learning or it can sabotage it (Schmidt, McKnight, Valverde, Houang, and Wiley, 1997). Curricula differ between countries in their content standards, student performance standards, coherence, and efficiency. A special analysis of the American science and mathematics curricula was devastating (Schmidt, McKnight, and Raizen, 1997). The study concluded that American students' anemic performance on international assessments of mathematics and science was partly attributable to serious problems with the curricula for these subjects. The curricula being used in American schools were unfocused and had no coherent vision of teaching and learning objectives. They covered many more topics each year than the curricula of other countries, forcing teachers to treat each topic superficially and leading the authors to describe the curricula as a "mile wide and an inch deep". Relative to most other countries in the study, topics entered the curricula earlier, were revisited for more years in inefficient and superficial repetitions, and left the curricula later.

The curriculum study also found significant differences between curricula in their grade-level performance expectations for students. For example, by the end of 8<sup>th</sup> grade American students were expected to have mastered the basics of arithmetic, fractions, and a relatively small amount of algebra. By contrast, expectations in countries such as Germany and Japan included algebra and geometry.

<sup>i</sup> In their meta-analysis Glewwe et al. (2011) assessed the learning effects of several different types of instructional tools: textbooks and workbooks, computers and electronic games, blackboards and flipcharts, and libraries. They found mostly positive effects on student learning for all of these tools for the less rigorous sample of studies. However, as the methodological rigor of the studies increased, the picture changed. The effects of libraries remained positive. However, those for textbooks and workbooks, computers and electronic games, and blackboards and flipcharts became inconclusive.

In the single randomized control trial for textbooks, no learning effect was found (Glewwe et al., 2009). The result for this single study was so counter-intuitive that its authors conducted further analyses to determine why providing textbooks did not raise scores. They found that textbooks improved the scores of students with strong reading skills prior to receiving the textbooks, but not those of students whose reading skills were too weak to let them access the textbooks in any useful way. There were five randomized control trials that assessed the effects of computers. Thus, the inconclusive finding for this tool is more robust than for textbooks.

<sup>j</sup> These findings persist when multiple statistical controls are introduced into the estimates. On average, a one-hour increase per week in math, science, or language instruction raises the test score in these subjects by 0.15 of a standard deviation of the within-student distribution of test scores.

<sup>k</sup> The estimated effects of instructional time for mathematics, science, and language on 2006 PISA test scores for OECD countries for these subjects are all positive, large, and always significantly different from zero. These findings persist when multiple statistical controls are introduced into the estimates. On average, a one-hour increase per week in math, science, or

language instruction raises the test score in these subjects by 0.15 of a standard deviation of the within-student distribution of test scores. However, these results do not hold up for developing countries because of the lower productivity of each hour of instructional time. An increase of one classroom hour in the developing country sample in any of the three subjects has a positive effect, but only half the effect as in the OECD sample.