



Challenges and Opportunities in the Belize Education Sector

Emma Näslund-Hadley
Haydée Alonzo
Dougal Martin

**Inter-American
Development Bank**

Education Division
(SCL/EDU)

TECHNICAL NOTE

No. IDB-TN-538

May 2013

Challenges and Opportunities in the Belize Education Sector

Emma Näslund-Hadley
Haydée Alonzo
Dougal Martin



Inter-American Development Bank

2013

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Näslund-Hadley, Emma.

Challenges and Opportunities in the Belize Education Sector / Emma Näslund-Hadley, Haydee Alonzo,
Dougal Martin.

p. cm. (IDB Technical Note ; 538)

Includes bibliographical references.

1. Education and state—Belize. 2. Educational evaluation—Belize. 3. Effective teaching—Belize. I. Alonzo,
Haydee. II. Martin, Dougal. III. Inter-American Development Bank. Education Division. IV. Title. V. Series.

<http://www.iadb.org>

The opinions expressed in this publication are those of the authors and do not necessarily reflect the views of the Inter-American Development Bank, its Board of Directors, or the countries they represent.

The unauthorized commercial use of Bank documents is prohibited and may be punishable under the Bank's policies and/or applicable laws.

Copyright © 2013 Inter-American Development Bank. All rights reserved; may be freely reproduced for any non-commercial purpose.

The authors would like to thank Gustavo Arcia and James Cercone for their valuable inputs.

**Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library**

Näslund-Hadley, Emma.

Challenges and Opportunities in the Belize Education Sector / Emma Näslund-Hadley, Haydee Alonzo, Dougal Martin.

p. cm. (IDB Technical Note ; 538)

Includes bibliographical references.

1. Education and state—Belize. 2. Educational evaluation—Belize. 3. Effective teaching—Belize. I. Alonzo, Haydee. II. Martin, Dougal. III. Inter-American Development Bank. Education Division. IV. Title. V. Series.

JEL Codes: 121

Key words: Education in Belize, Education coverage, Completion rates, School attendance gaps, Internal inefficiency in the education system, National tests, Education inputs, Education expenditure.

TABLE OF CONTENTS

I.	JUSTIFICATION	3
II.	DIAGNOSIS OF THE EDUCATION SECTOR	4
	A. Education Output and Outcomes	4
	B. Inputs in the Education Sector	16
	C. Why are outcomes so poor in the face of high level of inputs	24
III.	ANALYSIS OF THE NATIONAL EDUCATION STRATEGY FOR 2011-16	28
	A. More education: The government aims to increase enrollment and reduce inequality	28
	B. Better education: The government aims to increase the quality of education	29
	C. Better governance: The government aims to improve the way schools are run	31
IV.	POLICY OPTIONS	32
	A. Intervention 1: Establish high student learning expectations to guide the provision and monitoring of education services to all levels.....	33
	B. Intervention 2: Ensure that new students start school ready to learn.....	33
	C. Intervention 3: Provide effective teachers to all students	34
	D. Intervention 4: Help schools use resources more effectively to allow more children to learn	35
	E. Intervention 5: Support more youth to complete vocational and tertiary education making them prepared to contribute to society	35

Summary

Belize is paying a lot for education but getting little. More youth are outside the school system than in it and many fail to make the transition to the workforce. More and more youth drop out of school and become involved in gang activities. Action is needed if Belize is not to lose a whole generation of youth. This document discusses the current situation of the Belizean education sector and its progress over the last 10 years, its relative performance compared with other countries in the region, and the policies currently being implemented by the education sector in Belize. While the challenges are great, the recommendation is to focus on increased efficiency, quality and equity. To this end, the note discusses policy options that seek to improve educational outcomes with the same or fewer resources.

I. JUSTIFICATION

- 1.1 Past and recent literature suggests a link between a country's economic growth and the years of schooling of its population. There is evidence that education leads to higher individual productivity and earnings (Becker, 1964; Hill et al., 2005; Dogarawa, 2011). Moreover, there is a causal link between investment in education and wages paid in the labor market (Mincer 1974), as well as evidence that the gains accruing to education can affect the rest of society. Educated people are less vulnerable to preventable diseases, less vulnerable to economic fluctuations, and more responsive to social issues (Dowd and Aiello, 2009). In addition, the literature finds a negative correlation between education and crime, suggesting that lower educational attainment levels increase the likelihood that individuals participate in criminal activities (Lochner, 2003; Lochner and Moretti, 2003; Buonanno and Leonida, 2006; Groot and Brink, 2010). Furthermore, a growing body of research indicates that the quality of education is more important than its quantity when it comes to economic growth. In the case of Latin America and the Caribbean (LAC), recent literature suggests that the low growth rates in the region are primarily explained by low levels of cognitive abilities (Hanushek and Woessmann, 2009). Also, youth who have not completed 9th grade lack the academic and life skills to successfully insert themselves in the labor market (Rouse, 2005).
- 1.2 The government of Belize has prioritized and invested heavily in education over the past few years. However, the outcomes in terms of education access, quality, and equity are disappointing. Even though secondary and tertiary attendance has grown over the last 10 years, the country still faces major challenges in access to education. Preschool, secondary, and higher education have yet to reach the lowest income quintiles, and, in recent years, attendance at the primary level has been on the decline. Belize's preschool gross attendance rate of 44.3 percent is among the lowest in the LAC region, considerably below the gross regional average of 71 percent. Overall, only 45 percent of secondary school-aged children attend school, substantially below the regional average of 80 percent. Equity is an important issue at the secondary level, as children from the wealthiest quintile are more than twice as likely to be enrolled as those in the poorest quintile. Tertiary-level enrollment in LAC is more than double the 18 percent attendance rate in Belize. Additionally, there remain chronic shortages of trained and qualified teachers at all levels. Fewer than 45 percent of teachers at the primary and secondary levels are trained, whereas some countries in the region report that more than 80 percent of their teachers are trained. This apparent disconnect between the resources devoted to the sector and education outcomes was highlighted by the Minister of Education, Youth and Sports in his introduction to the government's education sector strategy for 2011-2016.
- 1.3 This policy note discusses the current situation of the Belizean education sector and its progress over the last 10 years, its relative performance compared with other countries in the region, and the policies currently being implemented by the education sector in Belize. The note identifies the access and quality of education, accountability as well as the efficient use of resources, as the major challenges in the sector to be able to improve the formal education of children and youth from all socioeconomic groups.

II. DIAGNOSIS OF THE EDUCATION SECTOR IN BELIZE

2.1 Despite high levels of public spending on education, glaring inequalities in access and quality persist at all levels. Coverage and access at all levels of education are insufficient and inequitable. Many of those enrolled in the schools will repeat or drop out before graduating. Many children are still not achieving satisfactory levels of performance on exams. There is a serious shortage of trained and qualified teachers at all levels of the system, and there is limited enforcement of accountability. Spending in the sector is inefficient.

A. Education Output and Outcomes

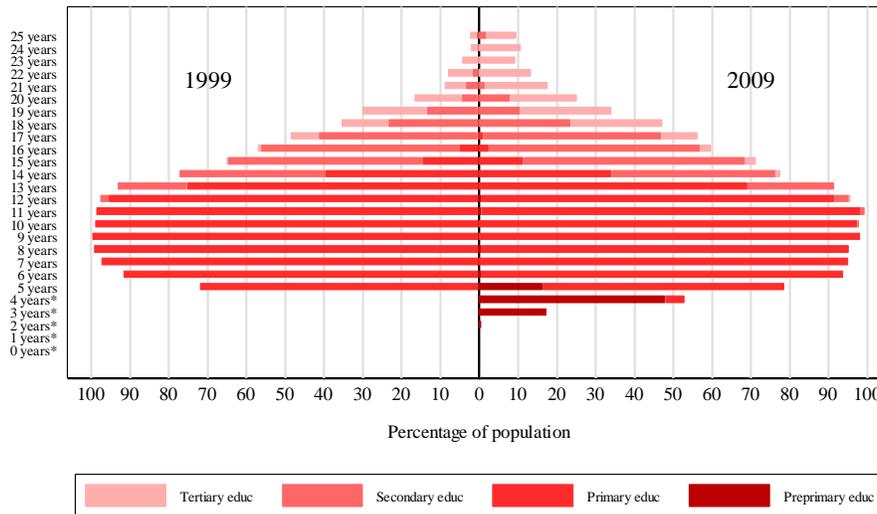
1. School attendance in Belize continues to be among the lowest in the region

2.2 **Preschool coverage is very low compared with the regional average.** At the preschool level, only one in every three children aged three and four were attending school in 2009 (Figure 1), a rate that has remained static in recent years. By comparison, Jamaica, Barbados, and Trinidad and Tobago report preschool coverage of more than 80 percent.

2.3 **Primary school attendance has been on the decline since 1999.** While 95 percent of the primary school-aged children were attending school in 1999, only 92 percent were going to school in 2009. This decreasing trend makes it unlikely that the Millennium Development Goal of universal primary education coverage will be reached by 2015 (Figure 1).

Figure 1

School attendance by age and education level completed



* The 1999 Labor Force Survey does not gather information on school attendance of children between the ages of 0 to 4.
Source: IADB/EDU, 1999 Labor Force Survey/2009 Living Standards Measurement Survey

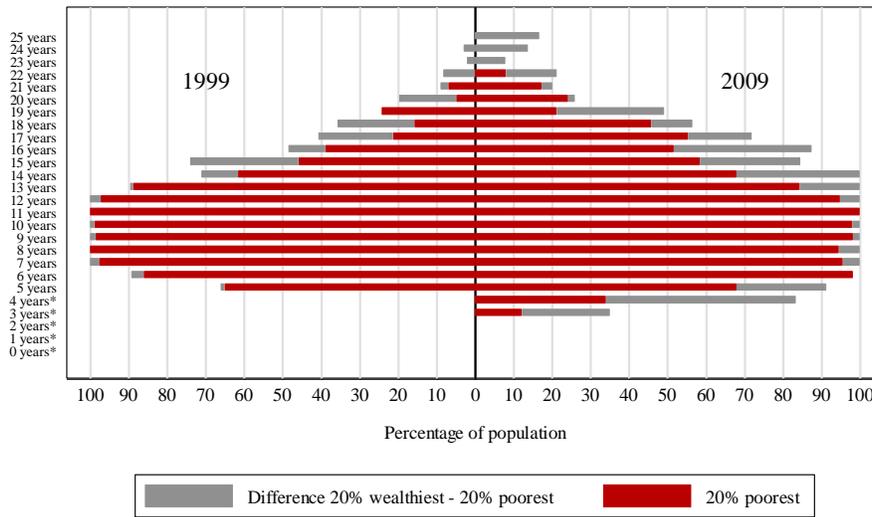
2.4 **Over the last decade, Belize has made modest progress in expanding education at the secondary and tertiary levels.** Secondary school attendance rates rose from 39 percent in 1999 to 44.6 percent in 2009. However, more than half of Belize’s secondary school-aged children

remain out of school. Coverage at the tertiary level (includes vocational institutes, junior colleges and university) increased by 8 percentage points between 1999 and 2009, reaching 18.1 percent in that year (Figure 1). By comparison, other English-speaking Caribbean countries have more than double the coverage observed in Belize (averaging about 80 percent at the secondary level and 50 percent at the tertiary level).

2.5 **Coverage is increasing only among the wealthiest students.** At the primary level, the only group of students that experienced a slight increase in attendance rates (2 percentage points) over the last 10 years was students from families in the highest income quintile. The enrollment gap between the wealthiest and poorest groups of primary school students increased from 2 percentage points in 1999 to 7 percentage points in 2009. Similarly, children from the wealthiest quintile are now more than twice as likely to be enrolled in secondary schools as those in the poorest quintile (Figure 2).

Figure 2

School attendance by age and income quintile

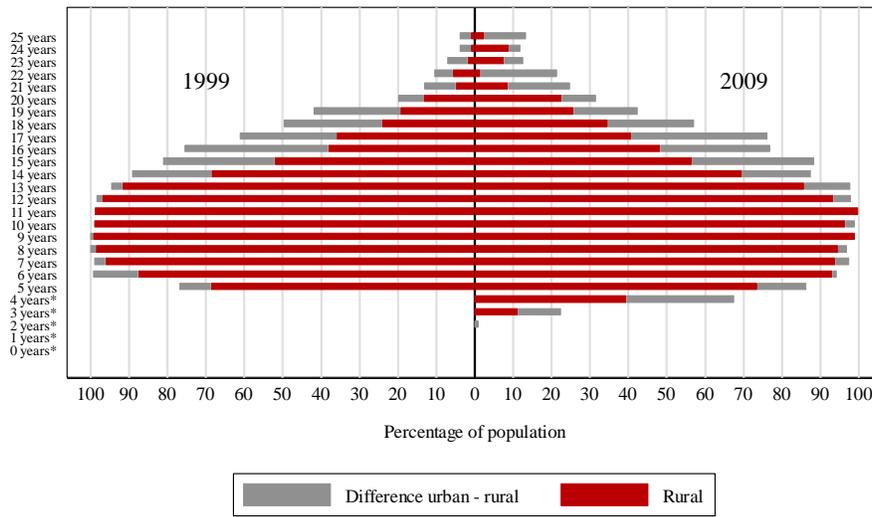


* The 1999 Labor Force Survey does not gather information on school attendance of children between the ages of 0 to 4.
Source: IADB/EDU, 1999 Labor Force Survey/2009 Living Standards Measurement Survey

2.6 **Children in rural areas have particularly limited access to secondary education.** Children living in urban areas are more likely to be attending school than those in rural areas, especially at the secondary level. The urban-rural gap in primary schools has remained largely constant at 2 percentage points over the last decade. In 2009, 93 percent of primary-aged children in urban areas attended school, compared with 91 percent in rural areas. The gap is much more pronounced at the secondary level. In 2009, while five in ten students living in urban areas were enrolled in secondary schools, only three in ten residing in rural areas were attending school (Figure 3).

Figure 3

School attendance by age and geographic location

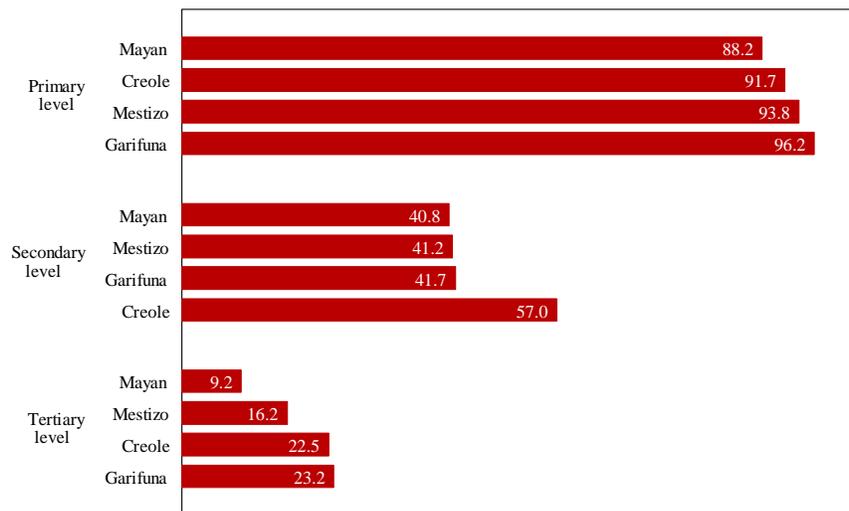


* The 1999 Labor Force Survey does not gather information on school attendance of children between the ages of 0 to 4.
Source: IADB/EDU, 1999 Labor Force Survey/2009 Living Standards Measurement Survey

2.7 **At all education levels, attendance of Mayan children (Yucatec, Mopan, and Ketchi) is lower than children from other ethnic groups.** The gap is particularly pronounced at the secondary level, where approximately 40 percent of Mestizo, Maya, and Garifuna children attend school, compared to 57 percent of Creole children. Similarly, the tertiary-level attendance rate of Garifuna and Creole students is more than double the rate of Mayan students, which is reported at 8.4 percent (Figure 4).

Figure 4

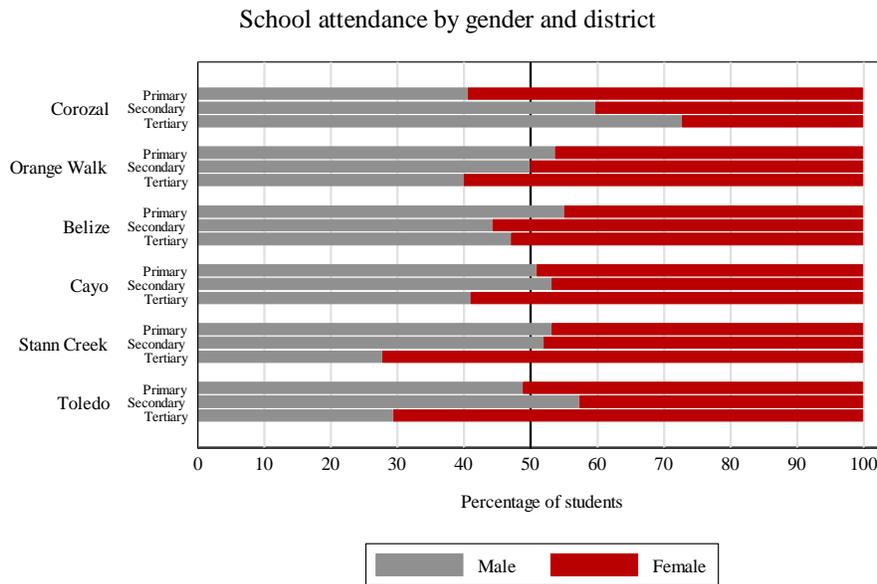
School attendance by ethnic group



Source: IADB/EDU, 2009 Living Standards Measurement Survey

2.8 **At an aggregate level, there are only minor differences in boys' and girls' access to primary and secondary education.** A small difference in favor of boys at the primary level disappears at the secondary level, where male and female students participate in equal numbers. However, important gender differences can be observed at the district level (Figure 5). In primary schools, boys outnumber girls in all districts except the two poorest (Corozal and Toledo), where boys tend to assist their fathers in the agricultural fields. At the secondary level, the Belize district is the only district in which girls outnumber boys, possibly due to later child-bearing age of women, as well as gang activity attracting teenaged boys.

Figure 5



Source: IADB/EDU, 2009 Living Standards Measurement Survey

2.9 **Overall, young women outnumber young men in tertiary education.** In tertiary-level institutions, female student attendance is 12 percentage points greater than that of their male counterparts. This gender difference can also be observed in all districts, except in the Corozal district, where for every four male students attending tertiary schools there is only one female student, presumably due to the early child bearing age of women in this district. The largest gender gaps in favor of women at this level are found in the southern districts of Stann Creek and Toledo, where more than 70 percent of the students are females (Figure 5). The lower attendance rate of boys at this level is less pronounced in the wealthiest quintile, in which there is less economic pressure to enter the workforce.

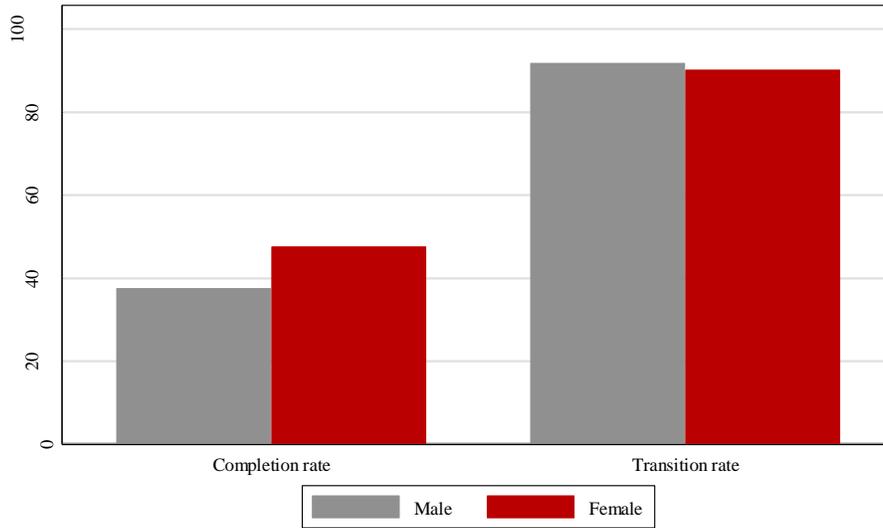
2. Completion rates in Belize are below the average in Latin America and the Caribbean

2.10 **Only two in every five children enrolled in primary school complete this level in the prescribed eight years.** Girls tend to have a higher completion rate than boys at the primary level. Whereas 48 percent of girls enrolled in primary schools complete this level, only 38 percent

of boys do so. These figures reflect the high repetition rate of 8.5 percent among primary-school boys, compared with the 5.7 percent rate for girls (Figure 6).

Figure 6

Primary school transition and completion rates

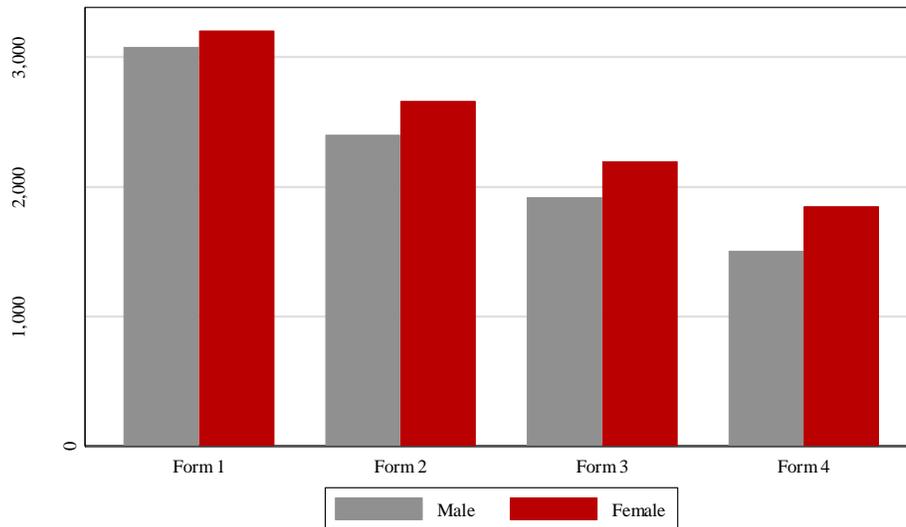


Source: IADB/EDU, MOE Planning Unit

- 2.11 **Approximately 60 percent of secondary-school students complete school on time.** However, since only 45 percent of the secondary-school aged children are attending school, less than a third (27 percent) of the children between the ages of 13 and 16 years complete secondary school on time. One-third of those who do not complete secondary school dropout before completing the 9th grade, reducing their chances to transition to the labor market and increasing the risk of getting involved in criminal activities. Crime data indicate that more and more unattached youth are involved in gang activity, with over two-thirds of the Belizeans indicating that there is conflict among youth in their communities (Kirton and Anatol, 2013).
- 2.12 **Completion rates are also higher among girls than boys enrolled in secondary schools.** At this level, 57 percent of the boys and 63 percent of the girls complete the required four years of education. High repetition and dropout rates are in part responsible for the poor completion record. Overall repetition and dropout rates in secondary schools were around 10 percent, respectively, in 2010, with a greater percentage of boys than girls repeating grades and dropping out of school (Figure 7).

Figure 7

Secondary enrollment



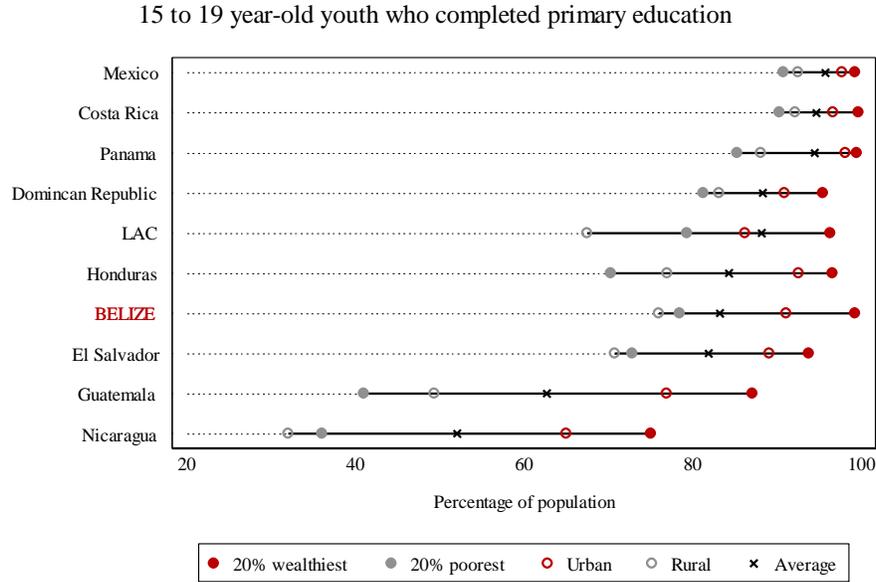
Source: IADB/EDU, MOE Planning Unit

- 2.13 **At the tertiary level, graduation rates are lower than at the primary and secondary levels.** However, the overall tertiary graduation rate of 15.4% is roughly in line with other countries in the region.¹ In six of the nine Junior Colleges in the country, women’s graduation rate exceeds that of men. Only in the poorest segments of the population do men complete more university degrees than women.
- 2.14 **The internal efficiency of the education system in Belize is low, with a large gap between the number of years that children attend school and the number of grades actually completed.** In Belize, the average 12-year-old child has attended school for 6 years but completed only 4 grades. Similarly, at the age of 17, while students should have attended 12 years of school and completed the secondary level, they have on average been enrolled for only 10 years and completed 8 grades. The average 20-year-old has attended school for 11 years but completed only the primary level.
- 2.15 **In 2009, 83 percent of Belizean youth aged 15 to 19 years had completed primary education, significantly lower than the average in neighboring countries.** While the LAC region reported an average primary completion rate of 88 percent among their 15 to 19 year-olds, 95 percent of the youth in the same age group completed this level in Costa Rica, Mexico, and Panama. Belizean youth living in rural areas and those in the lowest income quintile are at a disadvantage when it comes to completing primary school. Only 76 percent of children in rural areas complete primary education, compared with 91 percent of those in urban areas. Also, almost all of the

¹ Argentina (12%), Chile (19.4%), El Salvador (9%), México (18.7%), and Panamá (23.1%).

wealthiest students in primary school complete that level, as opposed to 78 percent in the poorest quintile (Figure 8).

Figure 8



Source: IADB/EDU, 2009 Living Standards Measurement Survey (Belize) and most recent Household Surveys (other countries)

3. *Performance on primary and secondary exams is poor*

2.16 **Fewer than half (44 percent) of standard six (eighth grade) students who took the national primary school examination (PSE) in 2011 obtained an overall grade of satisfactory or above.** The results were even worse for students living in rural areas, where only 37 percent scored at the satisfactory level, compared with 52 percent in urban areas. On the plus side, the achievement level of standard six students has improved over the past 10 years. In order to compare the 2011 PSE results with those of 2000, only the three subjects taken in the year 2000 were considered: mathematics, language and science. While only 23 percent of the eighth grade students who took the PSE in 2000 obtained an overall grade of satisfactory or above, approximately 39 percent of the students in 2011 did so. The improvement was evident in both rural and urban areas (Figure 9).

Figure 9

PSE results by geographic area



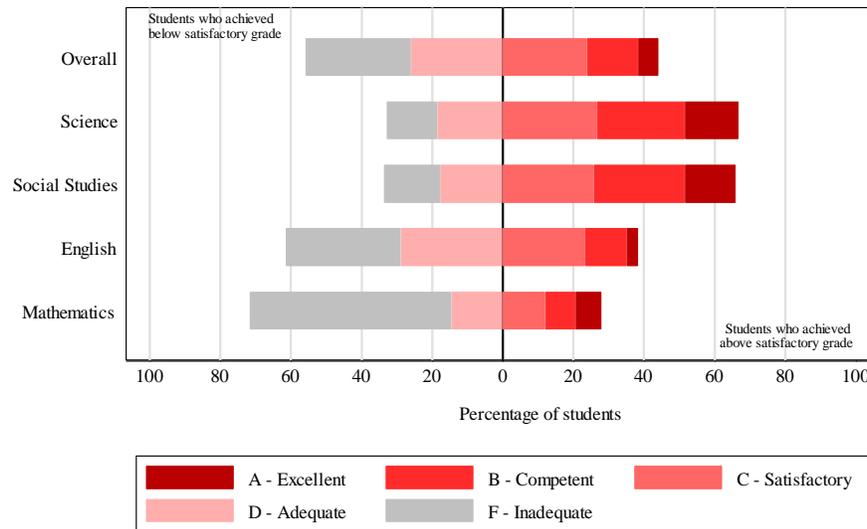
* For comparison purposes, the overall grade calculated for 2011 excludes the score obtained on the Social Studies section of the exam.
Source: IADB/EDU, MOE Evaluation Unit

2.17 **There are large regional differences in student achievement levels on the PSE.** The students in the southern districts seem to be less prepared for the PSE exam, and hence do very poorly. In the northern districts (Corozal and Orange Walk), 24 percent of the students scored 70 percent or higher on the exam. Variations also exist between the southern districts: In Stann Creek, 15 percent of students obtained 70 percent or higher on the exam, whereas only 10 percent of students in the Toledo district did so.

2.18 **Most children performed very poorly in the 2011 PSE in mathematics and language.** The percentage of standard six students who earned a grade of competent or better on the science and social studies sections was more than twice as large as the percentage with similar scores on the mathematics and language sections (15 percent). Students seem to have more difficulties with the mathematics section of the exam, since almost 60 percent failed this section, earning a grade of inadequate. By comparison, only 15 percent of children failed to achieve a passing grade of 50 or higher in the science and social studies sections (Figure 10).

Figure 10

PSE results by subject

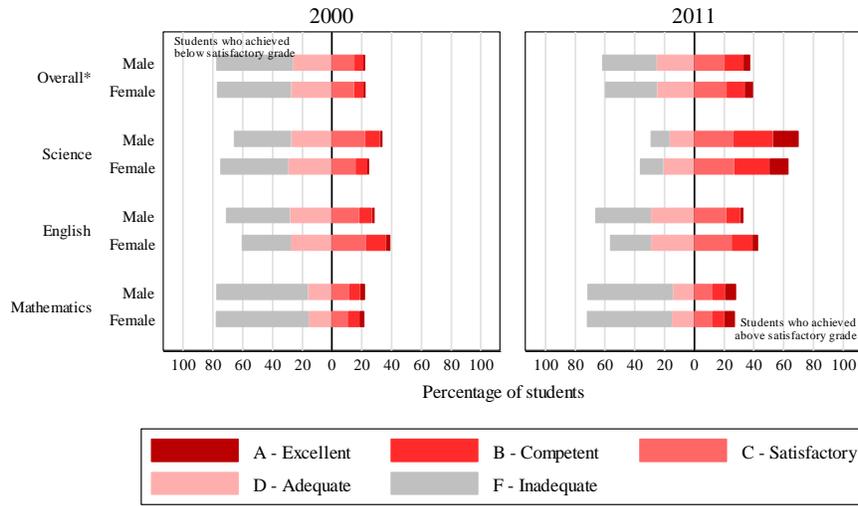


Source: IADB/EDU, MOE Evaluation Unit

2.19 **Standard six boys performed better than girls on the science section of the 2011 PSE, whereas girls outscored boys on the English section.** In 2011, seven in ten boys obtained a grade of satisfactory or higher on science, while six in ten girls achieved a similar grade. This pattern was also observed in 2000, when 34 percent of boys obtained a grade of satisfactory or higher, versus 25 percent of girls. On the other hand, in both 2000 and 2011, four in ten boys achieved a satisfactory grade or higher on English when only three in ten girls received a similar grade on the same subject (Figure 11). These findings are in line with those of many countries, where boys tend to do better in science and mathematics, and girls in verbal and writing skills (Sadker, 2000; Riegle-Crumb, 2005).

Figure 11

PSE results by gender

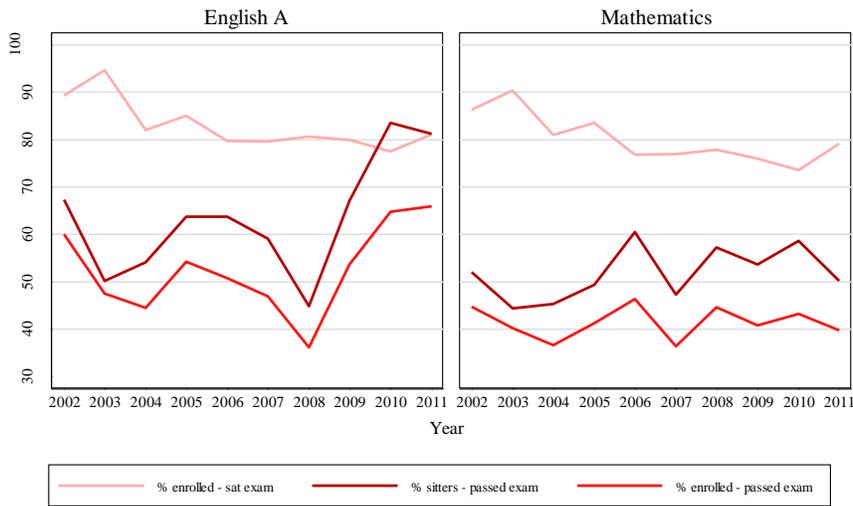


* For comparison purposes, the overall grade calculated for 2011 excludes the score obtained on the Social Studies section of the exam.
Source: IADB/EDU, MOE Evaluation Unit

2.20 **The performance of secondary-school students on the mathematics section of the Caribbean Secondary Education Certificate (CSEC) exam is poor.** Since the CSEC exams are taken largely by students with aspirations to attend tertiary education, it is worrisome that only 50 percent of the students who took the mathematics CSEC exam in 2011 passed with at least a satisfactory grade (grade level 3 or higher). In the English language CSEC exam, approximately 81 percent of the students who took the exam passed with a satisfactory grade (Figure 12).

Figure 12

Results on tertiary education entry requirement exams (CSEC)

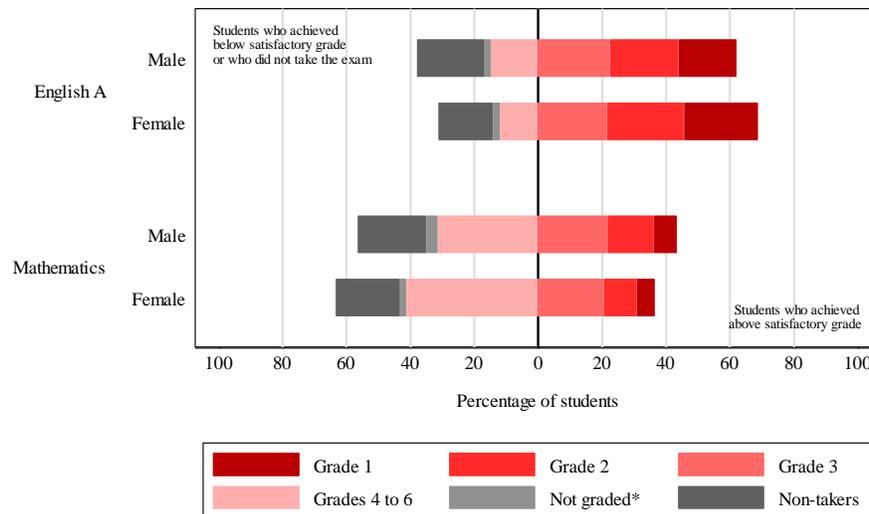


Source: IADB/EDU, MOE Evaluation Unit

2.21 **The gender differences in test scores observed at the primary level are reinforced at the secondary level.** Secondary-school-aged boys obtain higher grades in mathematics and lower grades in language than girls (Figure 13). This is consistent with the studies of gender-based differences in achievement cited previously (paragraph 2.19).

Figure 13

2011 results on tertiary education entry requirement exams (CSEC)



*The student was either absent, withdrew from, or did not complete the test.
Source: IADB/EDU, MOE Evaluation Unit

4. *Inequities and inefficiencies in the sector play an important role in education outcome inequalities*

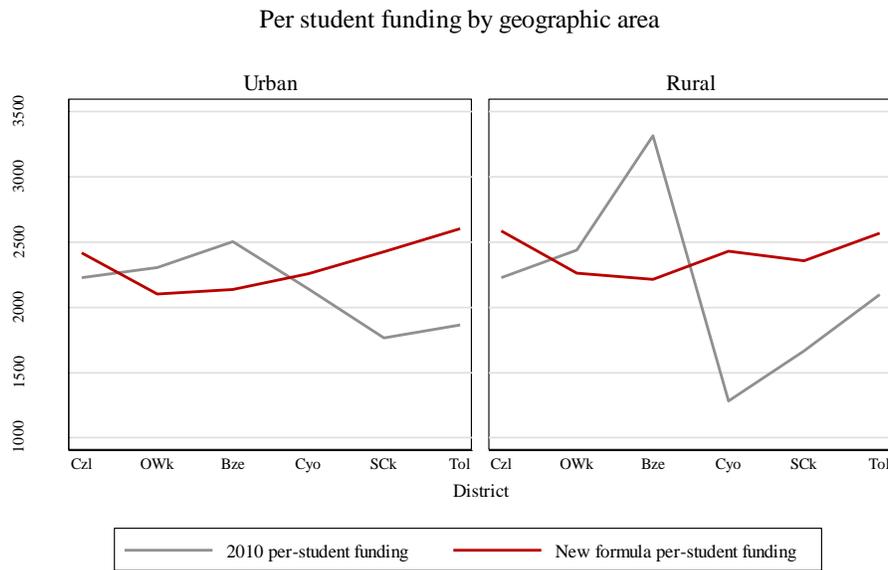
2.22 **The inequalities observed in the education outcomes in terms of lower attendance rates, completion rates and performance in rural areas are due, in part, to inequities and inefficiencies in the sector.** In an effort to improve secondary education outcomes, especially among those living in poverty and those with special needs, the Belize Ministry of Education (MOE), with assistance from the Inter-American Development Bank (IDB), initiated a public financing reform of secondary education. The old system, which provided salary and tuition grants to schools, guaranteed that schools in more affluent areas captured a disproportionate share of the available funds: they have more teachers than rural schools, and their salaries are higher. As a result, there were privately run schools in urban areas that received up to 20 times more resources per student than schools in more disadvantaged areas. For example, schools in the Belize district received 33 and 23 percent more in per student transfers than schools in the Stann Creek and Cayo districts, respectively.

2.23 **The main objective of the new Financing Allocation System (FAS) is to guarantee greater equity in school financing and to ensure that students have equal access to a sufficiently broad and relevant curriculum.** The system is now based on the courses offered, the average cost per student, the number of students enrolled, and the number of students with special needs.

Rather than funding a sophisticated curriculum in some schools, the government now funds the basic curriculum in all schools. Schools, therefore, have an incentive to collaborate on the offering of courses outside the basic curriculum.

- 2.24 **The new formula’s financial impact at the school level is significant.** Approximately 43 percent of the schools have experienced a freeze in funding, while 57 percent gained an increase in their grant allocation for a period of five years. There is an overall reduction of inequalities in per student costs (Figure 14).

Figure 14



* Note that Czl - Corozal; OWk - Orange Walk; Bze - Belize; Cyo - Cayo; SCK - Stann Creek; Tol - Toledo.
Source: IADB/EDU, 2012 Preliminary Assessment of the New Resource Allocation System for Secondary Schools

5. Returns to education begin to appear at the secondary level

- 2.25 **The returns to education², after adjusting for self-selection, show that primary education is not significantly different from no education at all in terms of its impact on wages.** This is an indication that the quality of primary education is so low that the market is not willing to pay more for an employee with primary education than for one with no education. The return to secondary education is slightly higher, with a monthly salary increase of BZ\$458 (3.2 percent) over the average salary of a person who only finished primary school. Completing vocational

² The estimation of the returns to education follows a well-established empirical model in which the wages received by an individual depend on his or her formal education, experience and other socioeconomic factors. The model used for Belize is: $\ln W = a_0 + b_1 P + b_2 S + b_3 V + b_4 U + b_5 Exp + b_6 Exp^2 + u$; where W is the wage, \ln is the natural logarithm operator; a and b are regression coefficients; P , S , V and U are dummy variables representing the education level completed (primary, secondary, vocational, and university), Exp is years of work experience, Exp^2 is years of work experience squared, and u is the error term. Since wages are observed only for employed individuals, the estimation of the returns to education is adjusted to include unemployed individuals because prevailing wages are below their reservation wage. Hence, the estimation takes into account this self-selection bias using the Heckman (1979) technique.

training generates a big jump in monthly salaries: Young people with vocational training earn on average BZ\$408 more than those who only finished high school. University graduates earn an average of BZ\$1,319 more per month than those with secondary education (Table 1).

Table 1
Returns to education

Education level	Annual rate of return (%)	Average monthly salary (BZ\$)
None		421
Primary	0.1	437
Secondary	3.2	895
Vocational	11.3	1303
University	14.6	2214

Source: 2009 Living Standards Measurement Survey

2.26 **Students need secondary education to escape poverty in Belize.** Formal education begins to pay off with the completion of secondary education. In addition, the high payoff associated with vocational education (relative to secondary) is consistent with findings that the labor market in Belize needs skilled labor in the areas in which the country is doing well such as tourism (Arcia, 2012a). Moreover, the data suggest that university education is highly productive for individuals, generating the highest average salaries.

B. Inputs in the Education Sector

1. Government commitment to education is strong compared to neighboring countries

2.27 **The Government of Belize has shown a strong commitment to education in recent years.** Education spending has been rising over time, representing 7 percent of GDP in FY2011/12 and a projected 6.8 percent of GDP in FY2012/13. This is high by international standards, with public expenditures on education amounting to 4.8 percent of GDP in the average OECD country. It is also high by the standards of most Latin American countries, although certain Caribbean countries (Barbados and St. Vincent and the Grenadines) come close. At around a quarter of the government's non-interest spending in the past few years, the education sector is by far the largest destination of government spending and developments in the sector influence overall fiscal trends. The budget is distributed among both public and private subsidized schools at all levels. Most primary and secondary schools (82 percent) are privately operated with very limited government oversight (Table 2).

Table 2

Institutional Setup

Level	Management	Government	Private subsidized	Private not subsidized	Total
Preprimary (Ages 3 to 4)	Schools	31	119	43	193
	Students	864	4,195	1,537	6,596
	Teachers	49	237	97	383
Primary (Ages 5 to 12)	Schools	56	210	31	297
	Students	11,688	53,875	1,445	67,008
	Teachers	521	2,352	140	3013
Secondary (Ages 13 to 16)	Schools	17	28	7	52
	Students	3,839	10,032	43	13,914
	Teachers	539	783	67	1,389

* Data for Junior Colleges are as follows: schools - 10; enrollment – 7,008; teachers - 210.

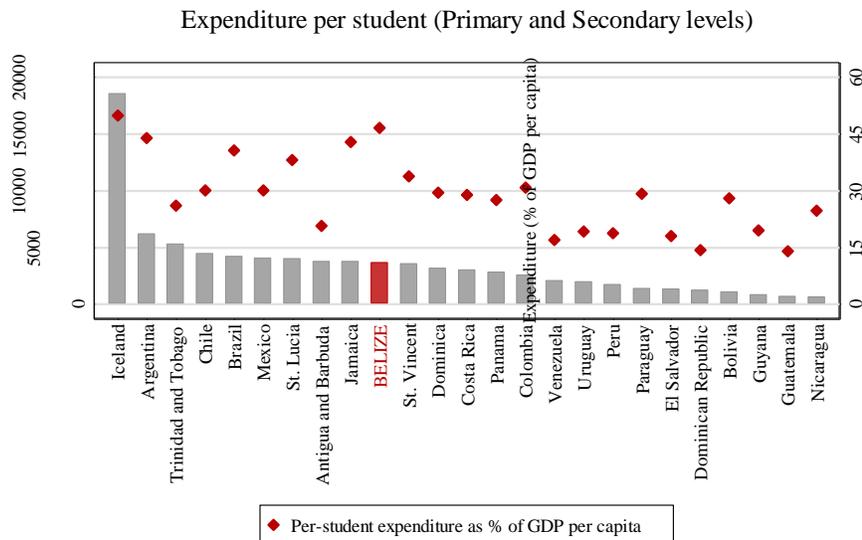
* Data for ITVETS are as follows: schools - 6; enrollment - 611; teachers - n/a.

Source: 2009 Abstract of Statistics

- 2.28 **In 2011, almost 50 percent of the MOE’s recurrent budget was allocated to primary education, an 8-percentage point decrease from 2001.** Another 25 percent was allocated to secondary education and 2 percent to vocational institutions, with these shares remaining constant for the past decade. Meanwhile, the postsecondary budget (universities and junior colleges) has tripled from 5.5 percent in 2001 to 14 percent. Preschool education received 1 percent of the MOE’s recurrent budget. As is typical in education, most recurrent expenditures (about 61 percent) go toward the payment of salaries, followed by tuition grants (financial aid), which represent about 24 percent. That leaves about 14 percent of the budget for teacher training, operational expenses, educational materials, and contract consultancies.
- 2.29 **In 2011, public recurrent spending per student was highest at the tertiary level, where the government spends approximately BZ\$4,187 per student at the University of Belize and BZ\$3,203 per student at junior colleges.** A much higher level of spending (approximately BZ\$6781.60) was observed at the Institutes for Technical and Vocational Training (ITVETs) in 2008. The level of spending is understandable given the capital intensity of some of these programs and the lower student/teacher ratios. At the secondary and primary levels, government spends approximately BZ\$2,907 and BZ\$1,604 per student, respectively. That is, primary students receive about 55 percent of the funds received by each secondary school student. The lowest level of government spending per student was at the preschool level (BZ\$671), which is less than one-half of per student expenditures for primary schools.
- 2.30 **As can be expected of a small country, Belize’s per student spending is high relative to the country’s per capita income (19.1 percent in primary schools and 27.4 percent in secondary schools).** In the case of secondary schools, the percentage is almost double the expenditures in the

Central American region.³ Given the total per student expenditure at the primary and secondary levels, Belize spends more than most of the countries in Central America but less than Caribbean nations such as Antigua and Barbuda, St. Lucia, Jamaica and Trinidad and Tobago. High per student expenditure is to be expected in a small country, since central administrative costs are divided among very few students. In Belize, schools in some districts are small and dispersed, further pushing up costs (Figure 15).

Figure 15



* Year of data varies: Belize, Chile, Colombia, Dominica, Dominican Republic, Guatemala, Guyana, Jamaica, Nicaragua, Paraguay, Peru, St. Lucia, St. Vincent & the Grenadines (2010); Antigua & Barbuda, Argentina, Brazil, Costa Rica, Iceland, Mexico (2009); El Salvador, Trinidad & Tobago (2008); Panama, Venezuela (2007); Bolivia, Uruguay (2006)
Source: IADB/EDU, World Bank and IMF Databases

2.31 **At the tertiary level, spending is high compared to most countries in the region.** In 2011, the government of Belize spent 41 percent of per capita GDP on tertiary education. Compared with other countries in the region, Belize spends slightly less than Mexico, Barbados and Jamaica (44, 50 and 56 percent, respectively). However, most of the other countries spend around 20 percent.

2. Household spending on education is high

2.32 **Basic education (primary and secondary) is not entirely free in Belize.** There are many costs associated with attending school, mainly school fees, uniforms, books, writing materials, transportation, and food and snacks. These private education expenditures are directly proportional to household income. In that regard, Belize has a progressive system of education expenditures. Households with incomes in the top 20 percent spend four times more than households in the bottom income quintile.

³ Costa Rica (14.5 and 14.4 percent, 2009); El Salvador (8.8 and 9.4 percent, 2008); Guatemala (8.4 and 5.5 percent, 2010); Nicaragua (19.1 and 9.8 percent in 2010); Panamá (12.4 and 15.1 percent, 2007).

2.33 **Estimated averages from prior years reveal great disparities in household basic education expenditures by district.** The Cayo district leads all others in household expenditures on education with BZ\$3,007.83. By contrast, the lowest level of household expenditures is observed in the Toledo, Stann Creek, and Corozal districts, all of which have a higher incidence of poverty. When measured as a proportion of total household expenditure, households tend to allocate, on average, 10 percent of their total household spending on education. In the Orange Walk and Cayo districts, households devote more than 12 percent of their total spending to education (12.9 and 16.2 percent, respectively), compared to 7.5 percent in the southern districts of Stann Creek and Toledo (Table 3).

Table 3

Household expenditure on basic education (BZ\$)

District	Household expenditure on education	Household expenditure on education as % of total household expenditure
Corozal	1,057.64	8.3
Orange Walk	1,872.23	12.9
Belize	1,895.74	9.7
Cayo	3,007.83	16.2
Stann Creek	1,107.75	7.5
Toledo	923.55	7.4
Total	1,771.02	10.6

Source: 2002 and 2009 Living Standards Measurement Survey

2.34 These expenses, which have been increasing over the years, are a financial strain on many households, particularly on poor families and those living in rural areas, where cash incomes tend to be much lower. Although the causes of the unfavorable enrollment rates in rural areas are multiple, household surveys indicate that the high private cost of schooling, especially at the secondary level, is one of the main problems.

2.35 **Attending a university or junior college also represents considerable expenses to the family of a student.** The average annual expenditure for households with students aged 18 to 23 can reach levels of BZ\$4,600. Despite the greater need for socio-economic disadvantaged students in the lower percentiles to receive financial aid, the data indicates that students from the poorest households spend more on fees than their counterparts. However, the wealthiest families spend more than double the amount spent by the poorest households on books, transportation, and rent (Table 4).

Table 4

Household expenditure on tertiary education (BZ\$)

Quintile	Fees	Other expenses*
Poorest	1,434	1,606
Wealthiest	1,218	3,382

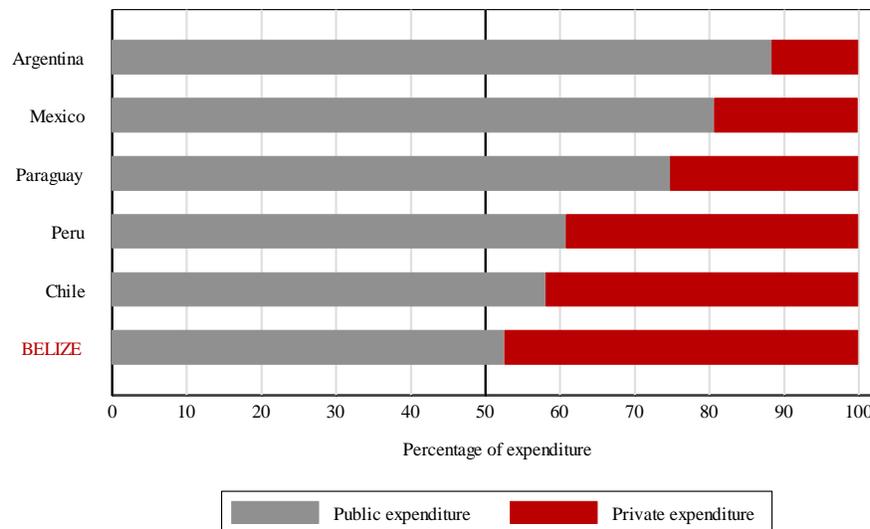
*Other expenses include books, paper, bus, and rent.

Source: 2002 and 2009 Living Standards Measurement Survey

2.36 **Belize has a very high proportion of private spending on education compared with countries in the region (Figure 16).** For every dollar spent by the government on education, Belizean families spend another 90 cents. The high private spending is in part due to the elevated costs of providing education to a dispersed population. Even though, in principle, education is free, families end up paying for school supplies, equipment and fees.

Figure 16

Relative percentages of public and private expenditure on education



Source: IADB/EDU, 2009 Living Standards Measurement Survey; MOE Planning Unit; Education at a Glance OECD 2011

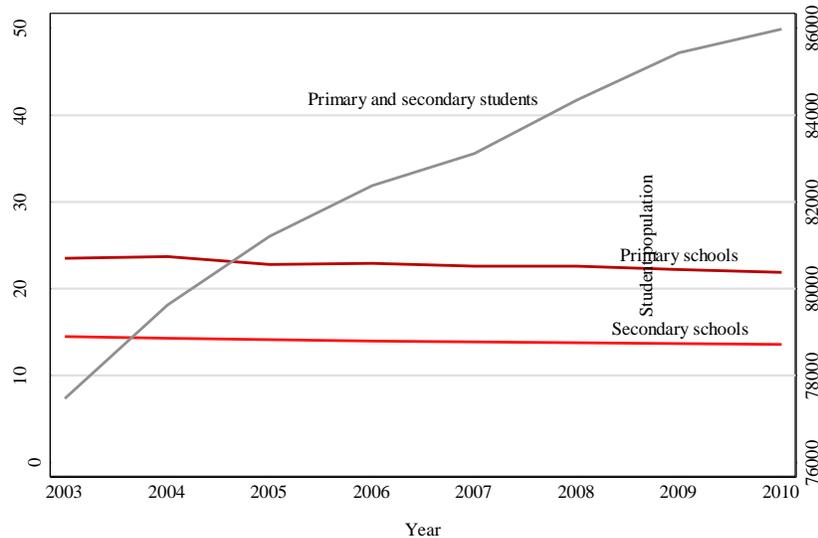
3. *A large proportion of Belize’s teaching force remains untrained, and teaching styles and materials are outdated*

2.37 **In response to increases in the primary- and secondary-school-aged population, the school system has hired large numbers of teachers.** The teaching force increased by 16 percent at the primary level, from 2,643 in 2003 to 3,063 in 2010, and by 31 percent in secondary schools, from 1,060 in 2003 to 1,389 in 2010. Thanks to this effort, student/teacher ratios have been maintained at both levels. Whereas the student/teacher ratio in primary schools (23:1) is in line with the average in the LAC region, the ratio at the secondary level (14:1) is slightly better than the

regional average, largely as a result of low student attendance rates in sparsely settled areas (Figure 17).

Figure 17

Student-teacher ratios maintained, in spite of growing student population



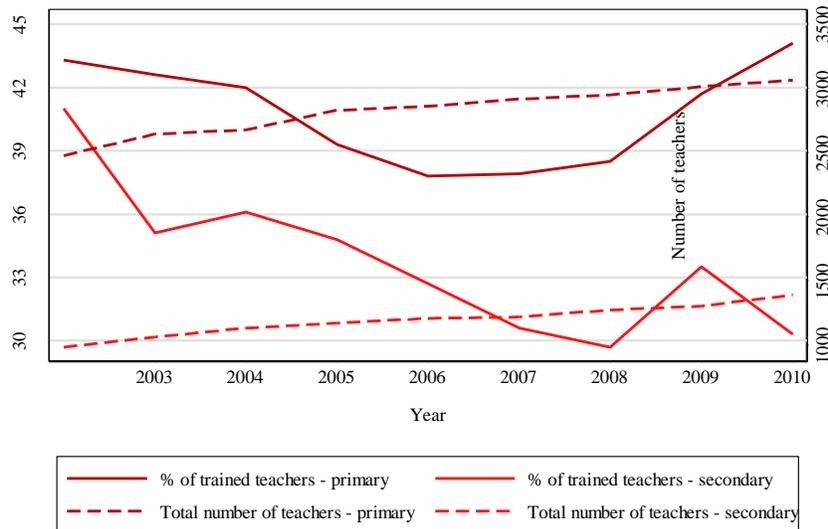
Source: IADB/EDU, MOE Planning Unit

- 2.38 **The percentage of untrained teachers is one of the highest in the region.** The increase in the teaching force has brought down the proportion of trained teachers at both the primary and secondary levels.⁴ Although the share of trained primary school teachers reached 44 percent in 2010, up from 38 percent in 2008, it had been on a decline since 2003. But Belize’s rates of teacher training remain lower than those of many of the countries in LAC. Costa Rica, Dominican Republic, Ecuador, El Salvador, Mexico, Panama, and Trinidad and Tobago all report that more than 80 percent of their primary school teachers are trained.
- 2.39 **The proportion of trained teachers is particularly low at the secondary level.** The share of trained secondary-school teachers dropped from 35 percent in 2003 to 30 percent in 2010, a substantial decline. Of the teachers contracted in the past 10 years, most have no more than a secondary-school education. In 2010, this latter group of teachers only with a high school education represented almost 40 percent of all secondary-school teachers (Figure 18).

⁴ Trained teachers at the primary level are defined as those who have completed the Level 2 program or the 2+1 program or higher offered at the University of West Indies Campus in Belize. Trained teachers at the secondary level are those who have undergone professional teacher training.

Figure 18

Trained teachers



Source: IADB/EDU, MOE Planning Unit

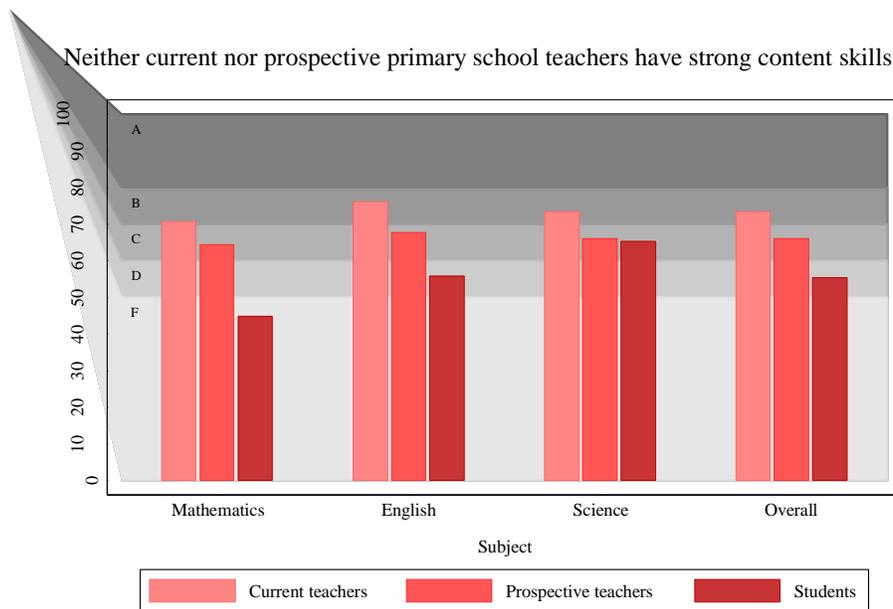
- 2.40 **Majority of the professors at the tertiary level are not qualified.** Only 15 percent of the faculty at the University of Belize has completed a doctoral program. Furthermore, only 2 of the 10 junior colleges in the country have at least one teacher with a doctoral degree. Around 60 percent of the professors at most of the junior colleges have a bachelor’s degree or less, but there are a couple of colleges in which the share of teachers with a bachelor’s degree or less reaches 80 percent of their faculty.⁵ In the case of ITVET teachers, there is no available information on their qualifications.
- 2.41 **There is a strong positive correlation (0.74) between the proportion of trained teachers and student academic performance at the primary level, by district.** The schools in the southern districts of Stann Creek and Toledo have the lowest proportion of trained teachers (approximately 33 percent in each district) and report the lowest student performance on the PSE exam, with approximately 64 percent of the students obtaining unsatisfactory grades. On the other hand, the districts with the greatest share of trained teachers (Corozal and Orange Walk) also report the highest percentage of students achieving a competent grade or higher. The proportion of trained teachers in these latter districts is more than double the rate in the southern districts. Furthermore, in the southern districts only 14 and 10 percent of the students performed at competent levels or higher, versus approximately 24 percent of the students in the northern districts.
- 2.42 **The share of trained teachers in secondary schools varies significantly in Belize’s six districts.** In the districts of Stann Creek and Toledo, which have high proportions of ethnic

⁵ Internationally, the educational requirement for post-secondary teachers is typically a doctoral degree, with some exceptions at the junior college level, where teachers can have a combination of a master’s degree and relevant experience (Bureau of Labor Statistics, 2012).

minority populations, only one in every five secondary-school teachers is trained. The district with the highest percentage of trained secondary level teachers (35 percent) is the Belize district. As in primary schools, the secondary schools in the northern districts of Corozal and Orange Walk have higher percentages of trained teachers than do the southern districts of Stann Creek and Toledo.

2.43 **The low level of teacher training is reflected in low content skills.** In an effort to evaluate the content knowledge of current and prospective primary school teachers (those in teacher training school), they were given the PSE test taken by standard six students. Throughout all subject areas (Mathematics, English and Science), current teachers obtained merely a “B” grade, on average. Prospective teachers only managed to score a “C” grade, on average. Only a third of the teachers in the classrooms obtained an “A” grade on the exam, meanwhile one in every ten teachers scored an unsatisfactory grade (D and F grades). It is even more alarming that only 6 percent of the teachers in training obtained an “A” grade on the exam, and one in every five teachers were unable to obtain at least a “C” grade. Both current and prospective teachers had the worst performance on the Mathematics section. In the Science section of the exam, the prospective teachers knew as much as the standard six students themselves, on average (Figure 19).

Figure 19



Source: IADB/EDU, Teacher Quality Study

2.44 The pedagogical models and materials used in teaching are outdated. The teaching methods currently implemented in Belizean classrooms are predominantly teacher-centered. In the case of mathematics, teachers rely heavily on the presentation and repetition of math procedures, sometimes combined with drills, practice, and memorization of concepts, procedures, and formulas. Students spend most of their time copying from the blackboard and plugging numbers into formulas. The common practice in the classroom is not one that actively engages students in

activities that may help them develop analytical and critical-thinking skills.⁶ Also, the multiethnic, multicultural, and multilingual characteristics of Belizean society are not reflected in school curriculums. Because the curriculum is not differentiated to meet the needs of distinct groups of students, there is no engagement on their part in the lessons being taught.

C. Why are outcomes so poor in the face of high levels of inputs?

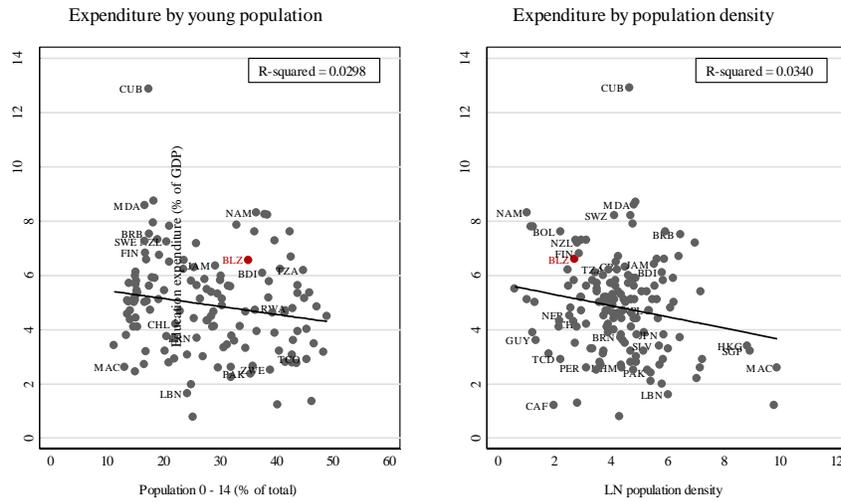
2.45 **What explains the apparent conundrum between high and rising levels of public expenditure on education and the weak outcomes?** The experience of Belize is not unique and international evidence comparisons suggest that there is little link between levels of public expenditure and educational achievement. Hanushek (2012) notes that “the majority of studies have found that differences in either the absolute spending level or spending increases bear little or no consistent relationship to study achievement”. Similarly, public education spending in high-performing countries, such as Korea, Japan, Australia, the Netherlands and Canada is below the OECD average for public spending on education of 4.8 percent of GDP, while some high-performing countries (Finland and Norway) spend above average (Bruns, et al., 2012).

2.46 **To a limited extent some of the high costs of education provision may reflect country-specific factors.** First, low population density implies a dispersed distribution of schools and higher transport costs than in countries with more concentrated populations. Second, the relatively fast growth of Belize’s population has resulted in a relatively young population, with a relatively high ratio of school-age population to total population. Despite the intuitive appeal of such explanations, international comparisons indicate very little if any relationship between either population density or a high student age population and the overall cost of an education system (Figure 20). And these factors do not explain the extremely high expenditure per student as a proportion of per capita income shown in figure 15.

⁶ Observations from the “Visible and Tangible Math Pilot” in the Belize district (2012).

Figure 20

Education expenditure by population

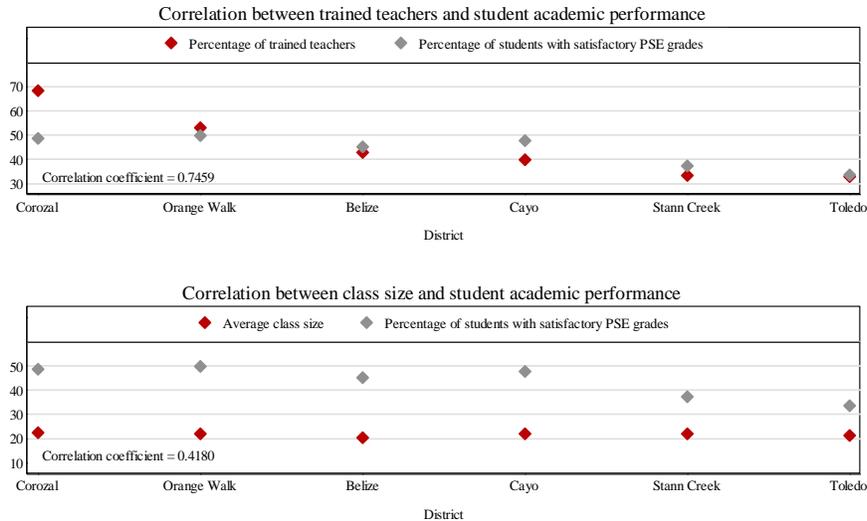


* Year of data for the countries varies from 2008 to 2011. The data on Belize corresponds to the year 2010.
Source: IADB/EDU, World Bank Database

2.47 **More importantly, government policies in Belize have historically been focused on input provision with little attention to reform of the institutional set up of the sector and other policies that have been linked to better educational outcomes.** Critically, during the 2000s the government opted to try to maintain and even reduce student/teacher ratios in spite of a rapidly growing student population. Despite common sense and conventional wisdom, “the enormous amount of research devoted to studying class size has failed to make a very convincing case that reducing class size is likely to improve overall student performance” (Hanushek, 1999). This has been borne out by Belize’s experience where, as noted above, the significant expansion of the quantity of teachers was associated with a drop in the proportion of trained teachers. While there is a strong correlation between the proportion of trained teachers and student academic performance at the primary level, by district, there is only a weak correlation between class size and student academic performance (Figure 21). Given that wages and salaries represent over four-fifths of total expenditures, the huge increase in teacher employment led to a significant increase in public spending on education. Although the average class size in OECD countries is 22, efficiency-minded countries such as Korea, Japan, and Chile have retained average class sizes of about 30, thereby holding down costs while still obtaining high quality education outcomes (Bruns, et al., 2012). Evidence is mixed with respect to the relation between other input-focused policies, such as increasing teachers’ salaries, and education outcomes (Mizala and Romaguera, 2005).

Figure 21

There is a strong correlation between trained teachers and student academic performance at the primary level by district



- 2.48 **International evidence suggests that while the quantity of inputs to an education sector has proved only weakly, if at all, related to education outcomes, education outcomes are related to the institutional structure of the educational system and the incentives for different actors in the system (Hanushek, 2003; Hanushek, 2008; Londoño, et al., 1996).** Giving the public sector an all-encompassing role –as financier, purchaser, employer and regulator– in one large ministry creates a structure which lacks the appropriate mechanisms to make the system perform efficiently, effectively and equitably. Principal-agent issues in the education system frequently result in the incentives that actors in the education system face diverging from those that would maximize student achievement. There are few incentives for good performance and no sanctions for poor performance.
- 2.49 **Efficiency in the use of funds is largely determined by how the system using the funds is organized.** Budgeting on the basis of inputs –the payroll plus some other expenses and running costs– means that funding is only very indirectly linked to output or outcomes. By funding inputs education providers (schools, colleges, universities and training institutes) do not face any financial incentives to produce large quantities of high quality education services –they will receive the same amount of funding whether they produce inferior quality teaching or high quality, relevant teaching. Schools and other providers face little incentive to ensure that inputs (particularly staff) are used efficiently since the quantity of inputs provided by a Ministry of Education does not vary according to the efficiency with which resources are used. Similarly, a Ministry of Education has no financial tools to reward good provider performance or punish weak provider performance. Another drawback of funding inputs rather than outputs is that financial flows respond only weakly and slowly to changing needs. Financing follows historical supply capacity rather than changes in demand.

- 2.50 **Centralization of funding limits the control and discretion of providers over what inputs they can use.** They cannot alter the resource mix and determine how much should be spent on teachers versus how much should be spent on supplies or school maintenance. Since school principals have immediate contact with students, teachers and the infrastructural environment, they often have a better understanding of which expenditures are going to be more effective. Centralization of funding separates those in control of allocating resources from those who have the most information about needs. Since teachers are paid centrally, school officials have little power to discipline or reward teachers. In particular, they have little ability to penalize non-attendance by deducting absences from teachers' salaries or dismissing chronically poor performers.
- 2.51 **In Belize the MOE is formally responsible for the formulation of education policy goals and priorities, establishment of education standards, issue of licenses to educational institutions and teachers, monitoring of education quality and effectiveness, and allocation of funds and resources to schools.** However, in practice some of these functions are not carried out.
- 2.52 **Funding has, with the exception of a recent reform at the secondary-school level, been input-based and centralized.** Teachers' pay has been determined through a centrally-determined national pay scale. Most education providers (69 percent) –notably tertiary level providers and government-subsidized private secondary schools– have some autonomy over other aspects of the budget. In contrast to the lack of providers' control over resources, providers have considerable autonomy in areas that arguably should be centrally regulated, such as the curriculum.

Box 1: Belize financing reform

Belize's financing of education has historically been input-based. The largest component of expenditure – teacher salaries – was paid centrally for government schools or indirectly through tuition grants to denomination schools. However, in 2011 Belize began to reform public resource allocation to secondary schools by letting financing follow outputs rather than inputs. The new formula for public grants allocations to schools has three components: (i) a per capita school services grant to align school incentives towards efficiency and promote equity between schools; (ii) a compensation-based grant awarded based on a means test; and (iii) a performance-based bonus grant that will promote the quality of education. All public funds that previously were allocated through salary and tuition grants will now be allocated through the new formula. The new financing formula will have a profound impact on the incentives for secondary schools, encouraging them: (i) to maximize enrolment and courses taught; and (ii) to minimize costs for a given production level, given that cost increases can no longer be automatically be passed back to the Ministry of Education/Ministry of Finance. In addition, the funding formula has the potential to eliminate the highly unequal distribution of resources between schools primarily serving wealthy students and schools serving socioeconomically disenfranchised students.

Source: Inter-American Development Bank (IDB). 2011, "Belize. Social Policy Reform Program." BL-L1004. Project Completion Report. Washington, D.C.

- 2.53 **Indicators of school accountability developed by the World Bank (Arcia and Patrinos, 2011; Arcia et al., 2011), suggest that Belize has low levels of accountability.** The schools are not

accountable for how resources are used and there are no consequences for underperforming schools. Parental involvement in school management is generally minimal, again weakening provider accountability. Other Caribbean nations have higher levels of school accountability than in Belize. At the tertiary level, there is a perception that course-offerings are highly supply-driven and do not reflect or respond to market signals about private sector demand (Cercone, 2012).

- 2.54 **The overall assessment of quality assurance is that Belize has no properly functioning system for monitoring education quality (Arcia, 2012b).** In the denominational schools (70%), the MOE has no or little control over what goes on in the classrooms, what curriculum is implemented, what teaching practices are used, or teacher and student attendance rates; the schools and the churches handle these issues directly. The lack of an information system and monitoring capacity of the MOE precludes them from intervening in low performing schools in a timely manner. The national testing system functions well but test results are used passively, as they are not used to evaluate or monitor school performance. Part of the problem is that there is a lack of clarity around education standards which makes it difficult to effectively monitor performance. In addition, the MOE has not evaluated what education models work best to improve student learning in the Belizean context.

III. ANALYSIS OF THE NATIONAL EDUCATION STRATEGY FOR 2011–16

- 3.1 The national education strategy for the period 2011–16 continues with the policies of the 2005–10 plan: (i) More education, oriented to increase access and coverage in preprimary, primary, secondary, tertiary, and special education for boys and girls equally; (ii) Better education, oriented to improve the quality and relevance of education at all levels through teacher training; and (iii) Better governance, oriented to strengthen governance throughout the sector with the emphasis on increased accountability for student achievement. In each area of the strategy, the government has proposed policy initiatives.

A. More education: The government aims to increase enrollment and reduce inequality

- 3.2 **The government intends, not only to increase overall enrollment at all levels, but also to reduce the inequalities among districts by 2016.** The MOE proposes to increase the preprimary gross enrollment rate from the current 44.3 percent to at least 50 percent in both urban and rural areas by 2016. At the primary level, the government is maintaining its commitment to achieve the Millennium Development Goal of universal primary education by 2016, aiming to reverse the current downward trend and increase coverage from 92 percent to 100 percent. Furthermore, the country plans to raise the gross enrollment rate in secondary schools from 65 percent to at least 70 percent. It proposes to ensure that each of the six ITVETs operates at a minimum of 90 percent capacity, thus raising overall enrollment to close to 1,100 full time students from 797 (in 2008). Lastly all special needs children are to be enrolled in school by 2016.⁷

⁷ Approximately 3 to 4 percent of the children who appear to never enroll in primary education are very likely to be children with special education needs who fail to find a place in the limited number of special schools or in a conventional primary school.

- 3.3 **In addition, the government hopes to reduce the repetition and drop-out rates, at all levels.** At the primary level, the country plans to reduce repetition rates from 7.2 percent to 3.6 percent in all schools. It is expected that, by the year 2016, secondary schools will have reduced the dropout rate by half, from the existing 10.3 percent to 5.1 percent in each district, ensuring that more than 1,000 students who otherwise would have left secondary school before graduating are retained (based on the predicted increase in enrollment). At the tertiary level, the government proposes to reduce dropout rates in junior colleges by 50 percent.
- 3.4 **Furthermore, the government proposes to improve completion rates at the secondary and tertiary levels and to reduce the gender enrollment gap in tertiary schools.** The MOE intends to increase the number of Form four graduates by 10 percent in all districts. The government will also work towards reducing the current gender bias in favor of women in tertiary education from 2:1 (female to male) to 3:2 (female to male).
- 3.5 **In order to achieve the above-mentioned targets, the MOE hopes to adopt a number of strategies.** At the preprimary level, the government intends to increase the number of schools and hire additional teachers to maintain the current student/teacher ratio. Additionally, it will open preschool classes in selected primary schools across the country and establish school feeding programs in poorer areas. At the primary and secondary levels, the government will focus on developing special school-based programs, run before and after normal school hours that aim to reintegrate out-of-school children into formal schooling and providing incentives to teachers to staff such programs. They will also continue to provide demand-side services (transportation, meals, and books) to help poor and rural families meet the costs of schooling. Furthermore, the country will provide support for leadership and specific training to enable secondary-school principals to better monitor and manage dropouts and repetition. The government is committed to continuing the secondary-school financing reform, assisting schools with additional infrastructure where required, and building schools where necessary, all in order to accommodate the growth in secondary-aged population from the current 29,000 to a projected 33,000 in 2016. Moreover, the government will work to increase the number of tertiary education programs delivered through online or multimedia alternatives to capture those who are unable to access full-time intramural programs. It also hopes to develop incentives to attract applicants into priority areas and to secure a better gender balance at the tertiary level.

B. Better education: The government aims to increase the quality of education

- 3.6 **The government proposes to achieve yearly improvements in examination performance in 75 percent of schools.** The MOE intends to increase the proportion of students who earn a satisfactory score on the PSE and CSEC examinations, and to increase the percentage of enrolled students who take those examinations. To achieve those goals, the government believes that it is important to integrate the components that directly drive the quality of education: effective leadership, competent and committed teachers, trained and qualified teachers, quality assurance, and effective delivery of the curriculum.
- (i) **Competent and committed teachers:** The MOE hopes to ensure that, by 2016, 75 percent of all teachers will be able to demonstrate a desired level of competency in their

teaching. To achieve that goal, the government plans to train all principals, vice principals, managers, and district staff in first-hand observational techniques, such as classroom observation, to prepare them to assess teachers' performance within a framework that addresses proficiency in key areas of teaching. The government will also train teachers in learning assessment, using both formative and summative assessment techniques.

- (ii) **Trained and qualified teachers:** The MOE, aspiring to move to a fully qualified and competent teaching force, proposes to increase the number of appropriately certified teachers at all levels by 2016. At the preschool level, the government seeks to increase to 25 percent the share of teachers in all districts who are fully licensed in early childhood education.⁸ In primary schools, the goal is to have 75 percent of teachers fully licensed in all districts, representing an increase from the current 44 percent. At the secondary level, the government intends to increase the percent of fully licensed teachers from the current 30 percent to 50 percent. Lastly, the government intends to engage all newly qualified teachers in appropriate induction. Incentives will be offered to practicing teachers who have not yet earned a qualification to undergo appropriate training. The existing licensing framework will be used to award full licenses to teachers who display the requisite competencies at all levels. In the case of newly qualified teachers, efforts will be made to ensure that school leaders and managers assume responsibility to develop and manage the performance of these teachers, as well as those on placement during training.
- (iii) **Quality assurance:** The government proposes that all teacher education programs should comply with established minimum professional standards and that all teacher trainers should possess the appropriate qualifications and experience required to deliver courses. Belize is currently preparing a teacher training strategy (with support from the IDB) that aims to continue to raise the quality of Belize's teaching profession. An initial action will be to benchmark all teacher training programs against regional and international standards. This will be the precursor to establishing national standards for teacher education. To ensure that standards are maintained and constantly improved, the MOE will develop a robust system of quality assurance for all teacher training institutions⁹. In an effort to increase the participation of children with special educational needs, all teacher training programs will include some basic training on meeting the needs of such children within the mainstream classroom.
- (iv) **Effective delivery of the curriculum:** Emphasis will be placed on improving the delivery of the curriculum in all of Belize's primary and secondary schools, as well as better aligning the curriculum that is offered in secondary schools with that offered in

⁸ The preprimary segment is largely underserved. Although the MOE has provided some training through short courses, more comprehensive training for preprimary teachers (similar to that available for primary teachers) is currently offered by only one junior college. The first group of students graduated in 2010.

⁹ The University of Belize through its campuses in the north, central and south, is the only institution in Belize offering teacher-training at both the primary and secondary levels. Associate Degree programs in Primary Education are also offered by four other institutions St. John's College Junior College (Central), Corozal Junior College (North), Sacred Heart Junior College (Central), and Stann Creek Ecumenical Junior College (South).

vocational institutions. The review will critically examine how the curriculum is managed by administrators and teachers and what support materials are used. To improve compliance with the curriculum in schools, learning outcomes will be reviewed for each year (grade) of school in all subject areas. A set of improved curriculum resource materials will then be produced to support teachers in their teaching of the curriculum. These will contain a range of “how to” ideas to support teachers in developing teaching plans at the classroom level that make learning come alive rather than focus on coverage.

C. Better governance: The government aims to improve the way schools are run

- 3.7 **The government proposes to improve the leadership of schools.** The MOE hopes that, by the year 2016, all school principals and vice principals will be certified in school leadership and that 75 percent of all schools will be rated as effective. The government plans to establish a certification program to ensure that serving and aspiring principals are versed in current theories of effective leadership and are able to demonstrate leadership in their schools. An essential part of the program will be aimed at increasing principals’ capacity to use and manage student data so that they can identify groups that are doing well and why, as well as areas where improvement is needed. The data should be made available to members of the parents and teachers associations, who will be trained to recognize the hallmarks of a good school to improve accountability.
- 3.8 **The government proposes to improve schools’ compliance with education rules.** The existing Handbook of Policies and Procedures for School Services is being reviewed in light of the IDB-supported 2010 Education Act. The revised handbook will be disseminated to all school offices and managers, accompanied by appropriate sensitization and orientation programs. Based on the new regulations, and on ongoing work under the Quality Child-Friendly School program, common standards for school management will be agreed upon and used as the basis for annual assessments of the performance of every school. Furthermore, the contract between school authorities and the MOE will be reviewed, and the conditions for grants-in-aid will be brought into line with the education sector strategy to ensure that schools are managed so as to meet policy objectives and maintain the basic standards established under the Quality Schools Framework.
- 3.9 **Over the next five years, Belize is committed to improving the accountability of schools to parents and local communities.** To meet this goal, the government will work to establish active parent and teacher associations or school councils in all schools. The associations and councils will meet at least once per term and fulfill functions other than fund raising. Additionally, the MOE proposes that all schools hold at least two individual parent-teacher consultations per year at which the progress of each pupil is discussed. This proposal will be supported by an improved and standardized reporting system, in which a narrative assessment of a child’s progress will be given. Lastly, all schools will be required to publish an annual report of their performance against key indicators.
- 3.10 **The government proposes that, by 2013, 90 percent of all personnel of managing agencies, district education centers, and the national MOE perform at a satisfactory level or above on the new annual performance appraisal system.** The government intends to improve the

management effectiveness of the MOE and district education centers. All officers at all levels will have annually agreed objectives linked to policy objectives; these will be used as the basis for their annual performance assessment. The Ministry will improve its internal reporting procedures and institute a system of regular and focused reporting that tracks performance toward the targets of the education sector strategy. Regular quarterly performance reviews will be held by district managers and service area heads. The Policy and Planning Unit of the MOE will reshape its role and build its capacity to better fulfill its functions to provide national leadership in planning, monitoring, and information management.

- 3.11 **The government intends to apply a quality-assurance system based on common minimum standards of service delivery across all educational institutions.** All schools, junior colleges, and vocational institutions will receive at least one full supervision visit every three years and at least one support visit per year. School supervision procedures will be reviewed and revised, and a common standardized system introduced nationally using a common reporting format. Day-to-day supervision and support will remain the responsibilities of the district education centers, with a strengthened role for school managers. Training and support will be provided to all supervisors, including district education center staff and school managers.
- 3.12 **The MOE proposes to publish all reports on its website within one month of their submission.** The government will invest in updating the official website through which key information on the education system will be published. It intends to publish annual reports of performance against the targets of education sector strategy, school supervision reports, annual school report cards, and reports from managing authorities.

IV. POLICY OPTIONS

- 4.1 **As is the case of many countries in the region, Belize is paying a lot for education but getting little.** More youth are outside the school system than in it and many fail to make the transition to the workforce. More and more youth are involved in gang activities. Action is needed if Belize is not to lose a whole generation of youth.
- 4.2 In view of the diagnosis of Belize's situation and international experience, improving educational outcomes with the same or fewer resources will require heavy attention to the third plank of the National Education Strategy for 2011–16: Better governance, oriented to strengthen governance throughout the sector with the emphasis on increased accountability for student achievement. The second plank of the strategy, ensuring quality and relevance of education, will perhaps most importantly require an overhaul of the teacher training and professional development system to provide effective teachers to all students. Also the first plank of equitable access requires attention to help schools use resources more effectively to allow more children to learn. While the challenges are great, international experience suggests that the following five policy options have great promise. Interventions one and four below can be accomplished at low cost and should, therefore, be possible to initiate nationwide in the very short term. In the case of the other interventions, these should initiate in the southern districts, where the problems are more pronounced, and be rolled out as resources allow.

A. Intervention 1: Establish high student learning expectations to guide the provision and monitoring of education services to all levels

4.3 Policies are needed to make sure that student learning expectations guide the provision and monitoring of education services at all levels. In practice, this means increasing accountability and providing performance incentives at the school, teacher, and student levels. The following strategies are recommended to establish a system of checks and balances:

- (i) ***Establish learning standards by:*** (a) establishing clear standards for student learning and disseminating them widely among schools and teachers; (b) reviewing all teacher education programs in order to benchmark these against regional and international standards; (c) establishing common standards for school management, which will be used as the basis for annually assessing the performance of every school; (d) revising, standardizing and adopting the primary and secondary school curricula to meet the needs of a multiethnic, multicultural, and multilingual society; and (e) updating the primary and secondary curricula to incorporate more hands-on, active learning in order to acquire more practical skills.
- (ii) ***Use Principal leadership as the vehicle for improving school and student performance by:*** (a) implementing principal training in School Based Management, including both transparent and efficient administrator skills, and skills as instructional leaders; and (b) providing technical assistance to principals to improve data collection and reporting processes to the MOE.
- (iii) ***Promote parent participation in school management by:*** (a) informing parents about school and student assessments, with comparisons with other schools in the area, the district and the nation (school scorecards being used in other countries in Central America can be adapted in Belize using simple language and concepts that would help parents understand the quality of their schools); and (b) raising awareness among members of parent and teacher associations about what makes a good school in order to improve the accountability of schools to parents.
- (iv) ***Shift the focus from inputs to outcomes realized by students by:*** (a) using the national standardized examination system to monitor and evaluate student achievement and school performance on a fair and objective basis; (b) disclosing school performance publicly to parents, school boards, and the media to inform and motivate demands for better performance from low-scoring schools; and (c) rewarding high performing school with bonuses.

B. Intervention 2: Ensure that new students start school ready to learn

4.4 At the preprimary level, one of the important goals established by the MOE is to provide early childhood education to 50 percent of preschool-aged children. However, the government has been unable to train the teachers and provide the infrastructure required for enough new preschools to

achieve this goal. Given the importance of early childhood programs (Heckman, 2011), the following strategies are recommended to increase preschool services and enrollment:

- (i) ***Increase services by:*** (a) opening preprimary classes in primary schools located in socioeconomically disadvantaged communities; and (b) improving infrastructure in existing schools and build new schools where needed to increase preschool services.
- (ii) ***Increase enrollment by:*** (a) organizing and educating the community (particularly in rural areas) on the importance of early education and the positive impacts it can have on their children.
- (iii) ***Improve the curriculum by:*** (a) developing standardized preschool learning kits (with appropriate materials and tools and training of preschool educators) that promote the development of language and mathematics skills and psychosocial development of children in different types of school (multigrade, formal, traditional, as well as informal and nontraditional).

C. Intervention 3: Provide effective teachers to all students

4.5 Two decades ago, the government of Belize established a goal to raise the proportion of trained teachers in schools to 80 percent. However, there continues to be a substantial shortage of trained teachers in schools, and the proportion of trained teachers is decreasing. To reach the government's goal, the proportion of trained teachers would have to almost double at the primary level and triple at the secondary level. In line with a new national teacher training strategy, Belize should implement a recursive teacher training model that incorporates consecutive and integrated programs to ensure a constant supply of trained teachers. The following strategies are recommended to increase the proportion of trained teachers:

- (i) ***Improve the qualifications of in-service teachers by:*** (a) working closely with junior colleges to create in-service training courses aligned with the existing pre-service training package to meet induction and licensing requirements; (b) establishing a national system for testing teacher content and pedagogical skills; (c) using technology in the delivery of teacher training activities to promote cost-effective distance learning and blended modalities; and (d) undertaking a temporary mass training initiative similar to the certificate in primary education, for secondary and early childhood teachers.
- (ii) ***Improve the qualifications of future teachers by:*** (a) establishing national teacher education and accountability standards to recruit good teachers from the start; (b) training teachers in content knowledge and inquiry-based student centered classroom practices; (c) packaging existing programs from the University of Belize and St. John's College for delivery in other centers in partnership with the junior colleges; and (d) creating partnerships between local institutions and universities abroad to offer teacher training programs not yet available in Belize in areas such as physics and chemistry.
- (iii) ***Enhance the teacher incentive system by:*** (a) experimenting with nonmonetary incentives, such as distinctions for extraordinary performance and opportunities for

further study; and (b) analyzing and potentially reforming the rules governing teacher tenure and incentives in order to select the most effective teachers to remain in the system.

D. Intervention 4: Help schools use resources more effectively to allow more children to learn

4.6 The MOE continues to aim for universal access to primary and secondary education. However, Belize has struggled to achieve these goals. With primary enrollment rates declining and completion rates low, it is important to make every effort to achieve the goals of universal access and reduced dropout rates at this level. Secondary education is crucial to the country's competitiveness and welfare. The effect of education on wages kicks in with the completion of secondary school, as the average salary of secondary graduates is more than double that of a primary school leaver. The following strategies are recommended to improve the services offered in these institutions and to increase enrollment using existing school facilities:

- (i) ***Improve access to primary education by:*** (a) establishing special school-based programs during regular school-hours to reintegrate primary school children who have dropped out or never enrolled in school; (b) improving education services to increase enrollment of children with special education needs (who make up 3 to 4 percent of out-of-school children at the primary level) by integrating them into regular classrooms through an inclusive education approach.
- (ii) ***Improve access to secondary education by:*** (a) allocating resources on the basis of education outputs or outcomes rather than inputs, including the strict monitoring of the implementation of the secondary school financing reform, ensuring that schools are paid based on the number of students that receive the minimum curriculum (and not as previously based on inputs); (b) developing special school-based programs that reintegrate out-of-school children into formal schooling and provide incentives to teachers to run such programs; and (c) offering cost-effective, non-formal alternatives to encourage secondary enrollment among young people who are unable to study in the formal system.

E. Intervention 5: Support more youth to complete vocational and tertiary education making them prepared to contribute to society

4.7 Student enrollment at the vocational and tertiary level is very low. Not all students graduating from high school have an opportunity to continue their education if they so desire due to several limitations. Vocational and tertiary education in Belize faces a multitude of challenges, including accessibility, affordability and inadequate supply of relevant programs. The following strategies are recommended to increase relevance, efficiency and equity at the tertiary level:

- (i) ***Increase relevance of tertiary education by:*** (a) allocating higher levels of subsidies to fields prioritized by the labor market (e.g. engineering and economics) and fewer subsidies to less rigorous programs (e.g. general studies); (b) targeting public subsidies for junior college programs to properly accredited tertiary courses; and (c) reducing

duplicated programs and programs that are not in high demand in the labor market, and redeploying teachers across programs.

- (ii) ***Increase relevance of vocational education by:*** (a) improving the coordination and collaboration between secondary schools and ITVETs, so that students in regular secondary schools can take courses that prepare them for a transition to ITVETs; (b) examining options for ITVET students to access courses offered at secondary schools; and (c) linking TVET to local industry and commerce to enable a tangible connection between training and the workplace.
- (iii) ***Increase the qualifications of tertiary level faculty by:*** (a) establishing clear national standards for teacher expertise at junior colleges and universities. This could be done in two phases: (1) setting benchmarks that align with current day realities, and (2) creating faculty standards for when conditions improve (i.e. when the teaching candidate pool has greater academic credentials).
- (iv) ***Increase access to vocational and tertiary education among under-represented populations by:*** (a) retargeting scholarships to low income students, rather than exclusively to the highest performing students (e.g. by establishing a fixed share of all scholarships to be allocated to low income households); (b) providing male youth with higher scholarship amounts to increase the incentive to stay in school, and hence reduce the gender gap.
- (v) ***Reduce inefficiencies by:*** (a) making institutional funding for instruction performance-driven (e.g. based on graduation rates and test scores); (b) reducing public subsidies to students who remain too long in the system; (c) increasing the use of shared facilities; and (d) expanding student mobility between institutions.

References

Arcia, Gustavo. 2012a. "Public Spending in Education in Belize: Implications for the Financing of Teacher Training." Unpublished Consultancy Report, Inter-American Development Bank. Washington D.C.

-----, 2012b. "Institutional Analysis of the Education Sector in Belize". Unpublished Consultancy Report, Inter-American Development Bank. Washington D.C.

Arcia, Gustavo and Harry Patrinos. 2011. "Assessment of School Autonomy and School Accountability in the Eastern Caribbean." Human Development Network, the World Bank. Washington D.C..

Arcia, Gustavo, Kevin Macdonald, Harry Patrinos and Emilio Porta. 2011. "School Autonomy and Accountability." Human Development Network, the World Bank. Washington D.C..

Becker, Gary. 1964. "Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education". Chicago, University of Chicago Press.

Bruns, Barbara, David Evans and Javier Luque. 2012. "Achieving World-Class Education in Brazil: The Next Agenda." The World Bank, Washington, D.C.

Buonanno, Paolo and Leone Leonida. 2006. "Education and Crime: Evidence from Italian Regions". Applied Economic Letters, Volume 13 Issue 11.

Bureau of Labor Statistics. 2012. "Occupational Outlook Handbook: Education, Training and Library Occupations". United States Department of Labor.

Cercone, James. 2012. "Financing of Tertiary Education in Belize". Consulting Report, Inter-American Development Bank. Belize.

Dogarawa, Ahmed. 2011. "Impact of Higher Education on Worker Productivity and Salary in Kaduna State". Working Paper.

Dowd, Jennifer and Allison Aiello. 2009. "Socioeconomic Differentials in Immune Response in the U.S." Epidemiology, Volume 20 Issue 6.

Groot, Wim and Henriette Brink. 2010. "The Effects of Education on Crime". Applied Economics, Volume 42 Issue 3.

Hanushek, Eric. 1999. "The Evidence on Class Size.", In *Earning and Learning: How Schools Matter*. Susan E. Mayer and Paul E. Peterson (Eds), Brookings Institution Press and Russell Sage Foundation.

- , 2003. "The Failure of Input-Based Schooling Policies." *The Economic Journal*, Volume 113 Issue 485.
- , 2008. "Incentives for Efficiency and Equity in the School System." *Perspektiven der Wirtschaftspolitik*, Special Issue 9.
- , 2012. "Financing Schools." In *International Guide to Student Achievement*. John Hattie and Eric Anderman (Eds), Education Psychology Handbook, New York.
- Hanushek, Eric and Ludger Woessmann. 2009. "Schooling, Cognitive Skills, and the Latin American Growth Puzzle". National Bureau of Economic Research (NBER), Working Paper N° 15066.
- Heckman, James. 2011. "The Economics of Inequality: The Value of Early Childhood Education". *American Educator*, Volume 35 Issue 1.
- Hill, Kent, Dennis Hoffman and Tom Rex. 2005. "The Value of Higher Education: Individual and Societal Benefits". Working Paper. Tempe, AR: ASU School of Business.
- Kirton, Raymond and Marlon Anatol. 2013. "Safe Neighborhood Survey Belize 2012". Unpublished Consultancy Report, Inter-American Development Bank. Washington D.C..
- Lochner, Lance. 2003. "Education, Work, and Crime: A Human Capital Approach". Working Paper.
- Lochner, Lance and Enrico Moretti. 2003. "The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports". Working Paper.
- Londoño, Juan, Daniel Maceira, Claudia Piras, Monica Rubio. 1996. "Economic and Social Progress in Latin America: 1996 Report, Special Section Making Social Services Work." Inter-American Development Bank. Washington, D.C.
- Mincer, Jacob. 1974. "Schooling, Experience and Earnings. New York, Columbia University Press.
- Ministry of Education. 2008/2009 to 2010/2011. "Abstract of Education Statistics". Belize.
- , 2012. *Improving Access, Quality and Governance of Education in Belize - Education Sector Strategy 2011- 2016*. Belize.
- Mizala, Alejandra and Pilar Romaguera. 2005. "Teachers' Salary Structure and Incentives in Chile." In *Incentives to improve Teaching: Lessons from Latin America*. Emiliana Vegas (Ed), The World Bank, Washington, D.C.
- Riegle-Crumb, Catherine. 2005. "The Cross-National Context of the Gender Gap in Math and Science". in *The Social Organization of Schooling*. Larry V. Hedges and Barbara Schneider (Eds).

Rouse, Cecilia. 2005. "The Labor Market Consequences of an Inadequate Education". Working Paper, Princeton University.

Sadker, David. 2000. "Gender Equality: Still Knocking at the Classroom Door". Equity and Excellence in Education, Volume 33 Issue 1.

Statistical Institute of Belize . 2002. "Labor Force Survey". Belize.

----- . 2009. "Living Standards Measurement Survey". Belize.

The World Bank. 2012. "Education Statistics". The World Bank DataBank database.