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## **Acronyms and Abbreviations**

<b>CAC</b>	-	Certificate of Acquired Competencies
<b>CEE</b>	-	Common Entrance Examination (End of Primary Education)
<b>CXC</b>	-	Caribbean Examination Council (End of Secondary Education)
<b>GCE A Level</b>	-	General Certificate of Education Advanced Level Examination (Cambridge)
<b>GCE O Level</b>	-	General Certificate of Education Ordinary Level Examination (Cambridge)
<b>NEC</b>	-	National Education Certificate (End of Secondary Vocational Education)
<b>14+</b>	-	Examination to be taken at the end of Junior Secondary Education
<b>MENS</b>	-	Ministry of Environment and National Services
<b>MIECA</b>	-	Ministry of Industry, Enterprise, and Consumer Affairs
<b>MLC</b>	-	Ministry of Labor and Cooperatives
<b>MOCASS</b>	-	Ministry of Consumer Affairs and Social Services
<b>MOE</b>	-	Ministry of Education
<b>MOEA</b>	-	Ministry of External Affairs
<b>MOEL</b>	-	Ministry of Energy and Labor
<b>MOF</b>	-	Ministry of Finance
<b>MOH</b>	-	Ministry of Health
<b>MOPD</b>	-	Ministry of Planning and Development
<b>MOPM</b>	-	Ministry of Planning and Mobilization
<b>MSYA</b>	-	Ministry of Sports and Youth
<b>MYSCC</b>	-	Ministry of Youth, Sport, Culture, and Creative Arts
<b>PSS</b>	-	Private School Survey
<b>SLC</b>	-	Survey of Living Conditions
<b>SLCE</b>	-	School Leaving Certificate Examination
<b>TTUTA</b>	-	Trinidad and Tobago Unified Teachers' Association



## **PREFACE**

This report was prepared by Kin Bing Wu. It is based on findings of a mission to Trinidad and Tobago from October 10 to October 21, 1994. The mission supported the Basic Education Project, which was task managed by Joel Reyes and advised by Michael Potashnik, and Poverty Assessment, which was task managed by Judy Baker. The report was reviewed by Yoshiaki Abe, Director of Country Department III; Norman Hicks, Lead Economist; Michael Lewin, Country Economist; and Ralph Romain, Principal Education Specialist. It was prepared under the supervision of Julian Schweitzer, Division Chief. Rajendra Swamy analyzed data from the Survey of Living Conditions. Evelyn de Castro prepared the graphs and tables; Cecilia Zavaleta and Aracelly G. Woodall provided support in word processing.

A seminar, which was co-sponsored by the Government and the World Bank, was held to disseminate the report in Trinidad and Tobago on April 2 and 3, 1996. Participants included representatives of the Ministries of Finance, Planning and Development, Education, and Community and Social Services; a representative of the Tobago House of Assembly; representatives of principals, teachers, parents, employers, and higher education institutions; and representatives of the Inter-American Development Bank, the Caribbean Development Bank, UNESCO, and the USAID. The seminar provided a forum to all stakeholders for discussion on a wide range of education issues. The open exchange of ideas laid the basis for defining the agenda for further reform. Another outcome of the seminar was the subsequent initiation by the Trinidad and Tobago Unified Teachers' Association and Principals' Associations to undertake a study on school-level finance to complement this study.

This final report incorporated the feedback from stakeholders, updated information on enrollment and public expenditure on education, added new findings on achievement, and projected the school-age population. Haiyan Hua analyzed data from the International Study on Reading Literacy. Eduard Bos projected the population growth based on official information from the 1990 census. Veena Mayani assisted in revising the expenditure data, and Luca Pastorello prepared the new graphs and tables. Rosalia Sanchez-Rushton provided support in word processing.



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## Executive Summary

1. Trinidad and Tobago (T&T) has made much progress in education. Since Independence, the country has built a complete education system from pre-schools to postgraduate studies. Near universal primary education was achieved as early as the 1960s. Equal access has been extended to all children irrespective of gender, race and religion. In 1994, about 45 percent of the 3- and 4-year-olds enrolled in pre-school, about 70 percent of primary school graduates entered secondary education; and over 6 percent of the 19-to-24-year-olds enrolled in post-secondary education.

2. Governance of education is public, religious, and private; however, public finance extends to schools run by religious denominations (assisted schools). The government assumes the bulk of the responsibility for financing primary and secondary education, vocational and technical education and training, and tertiary education, while leaving early childhood education mostly to the private sector. Public funding covers 100 percent of recurrent and capital expenditure of government schools, and 100 percent of recurrent spending but 75 percent of capital expenditure of assisted primary schools and 67 percent of capital expenditure of assisted secondary schools. Public expenditure on education accounted for 4 to 5 percent of the GDP in the period from 1985 to 1994, and household expenditure on education for approximately 2 percent of the GDP.

3. These expenditures have been, in substantial part, financed by the country's natural endowment of petroleum. Since the fall in oil prices in 1982, the economy has suffered from negative growth in 9 of 12 years between 1982 and 1994. Government budgetary deficits led to the adoption of structural adjustment measures in 1986. Government spending was reduced by about 29 percent in real terms between 1985-87 and 1992-94, and public allocation to education by about 26 percent. The economic reform program, which was started in 1989 and accelerated in 1992, had reversed the economic decline. In 1994, GDP grew nearly 4 percent in real terms.

4. With the resumption of growth, it is imperative to address the problems of education that have resulted from a decade of reduced investment in the sector. The major challenges are quantitative expansion and qualitative improvement. Furthermore, there is increasing evidence that the quality of education provided in most schools is poor. The large variability in learning outcomes among children from different income groups and school types, as measured by nationwide selection examinations, has persisted through the years. More recently, an international study on reading found that T&T's 9- and 14-year-olds performed poorly relative to students in some 20 participating countries, given the country's level of development. Moreover, the study confirmed the existence of large between-school and rural and urban disparities in achievement. This bodes poorly for the country's new economic development strategy of reducing its reliance on petroleum exports by encouraging foreign investment and developing labor intensive industries; a low skilled but relatively high cost labor force is not competitive on the international market. Moreover, as education is positively associated with productivity and earnings, variability in educational attainment and achievement will lead to differential employment prospects and future life-time earnings, thereby contributing to perpetuating the cycle of poverty.

5. The Ministry of Education (MOE) rose to meet these challenges by organizing a national task force to formulate a comprehensive education reform program. The resultant Education Policy Paper (1993-2003) articulates the vision for educational accomplishment, identifies the areas that require qualitative improvement, quantitative expansion, and additional investment, and lays out a strategy for restructuring the system of educational management and delivery. Specific measures which require additional financing include training of administrators and teachers; reducing pupil-to-teacher ratios; increasing teachers' salaries; de-shifting junior secondary schools and paying for places in private secondary schools to accommodate these students; and to construct new schools. This ambitious plan calls for a careful examination of education

policies, the past and present patterns of educational finance, and performance of the system in order to assess the sustainability of the reform.

6. The review of public expenditure on education found that budgets for education and training have been scattered across a number of ministries. Any efforts to rationalize the use of scarce resources must begin by identifying allocation on education and training in various ministries in order to establish the magnitude of spending and to identify trends over time.

7. The major categories of recurrent spending on education are personnel cost, goods and services, minor equipment, and transfers and subsidies. Recurrent expenditures accounted for 95 to 98 percent of the total education budget, while capital expenditure accounted for the remainder of the share. Of the recurrent expenditure, personnel was the largest component, accounting for 69-78 percent between 1985-87 and 1992-94, to be followed by transfers and subsidies to assisted schools, higher education, and households through scholarships, grants, and school lunch, which accounted for 17 to 22 percent over the same period. Goods and services accounted for 3 to 4 percent, and minor equipment for 0.1-0.2 percent. Between 1985-87 and 1992-94, both the share of personnel expenditure and minor equipment declined, but the share of goods and services and transfers and subsidies increased. Among subsidies to households, book grants were completely halted, but school lunch has been growing and subsidies to tertiary education also grew.

8. In 1985-87, primary education claimed 47 percent and secondary education 36 percent of the total recurrent education expenditure, while tertiary education 7 percent or 11 percent if spending on Teachers' College and post-secondary technical institutes were added. However, the magnitude of decline in public education expenditure over the years differed by level of education -- primary and secondary education declined by 38 percent, respectively, and technical education by 33 percent, while tertiary education rose by 19 percent. As enrollment increased between the 1985-87 and 1992-94 period, per-student spending was reduced by 45 percent in primary education, 40 percent in secondary education, and 32 percent in technical education, much steeper than the decrease by 13 percent in higher education.

9. In 1992-94, per-student recurrent public expenditure was equivalent to 8 percent of the GDP per capita in primary education, 12 percent in secondary education, 17 percent in technical education, 86 percent in teacher education, and 91 percent for university education. This ratio indicates that public subsidization was lowest in primary education to which the poor have access, but heaviest in university, where upper and middle class children are overwhelmingly represented. In comparison with the ratio of 1985-87, public spending in the early 1990s has become even more regressive.

10. **Education and Poverty.** Analysis of the Survey of Living Condition data, collected in 1992, found a large degree of variation in enrollment by expenditure quintile. While students from all expenditure quintiles attended primary school, the representation of children from low income families was progressively reduced as the level of education increased. University was clearly a venue for the wealthy: enrollment by students from the fifth quintile was four times as much as that by youths in the fourth quintile, compared with zero enrollment of youths in the first to the third quintiles. Transportation and lack of textbook were problems for low income children, particularly rural children, 64 percent of students in the lowest quintile walked to school, compared with 21 percent in the fifth quintile who walked. Moreover, over 30 percent of school students in first quintile did not have textbooks, compared with less than 10 percent among the fifth quintile.

11. In the Common Entrance Examination, 44 and 55 percent of Standard 5 students in government primary schools scored below the minimal acceptable levels in mathematics and English, respectively, compared with 37 and 49 percent of students in assisted primary schools, and 12 and 13 percent in private primary schools. It is clear that students in government schools performed the worst, and those in private schools, the best. Since government schools tend to cater for poorer students, and since students are selected



to different types of secondary schools according to their CEE scores, poor students who attend public primary school have fewer opportunity for post-compulsory education or are tracked to secondary schools of the last choice.

12. Students in junior secondary schools, senior comprehensive, and composite schools have the low mean CEE scores at the point of entrance to secondary education, whereas those in 7-year traditional schools have the highest scores. Students from lower income families are concentrated in junior secondary, senior comprehensive, and composite schools. By contrast, students from upper and middle classes have the highest concentration in 7-year traditional schools, 5-year traditional schools, and Sixth Form Colleges, far above their share in the total student population in secondary schools.

13. Inequity in education is reflected in unequal access to different levels of education, as well as to schools of different quality. Denominational sectors tend to be able to tap into other private resources due to their connections with religious and business communities. Therefore the resource endowment varies enormously from school to school. The ability of households to bear the direct and indirect cost of schooling affects enrollment and educational attainment. Poor families are less likely to be able to afford pre-school for their children, and thus less being able to prepare them for formal schooling. When the children reach compulsory education age, the poor have little option to send their children outside the local school catchment areas; rather they must accept whatever quality the nearby school can provide. They are less likely to be able to afford textbooks for their children, who thus suffer a distinct disadvantage in competition with students from better off families. As a result, children from low-income families are less likely to perform well in examination, and less likely to be placed in secondary school. Even when they are placed, they are more likely to be tracked to junior secondary schools that offer shorter hours of instruction and less qualified teachers. As a result, they are less prepared to progress further to the next level. At the same time, their family is less likely to buy textbooks or afford the opportunity cost to keep them in school. Rural students are adversely affected more than urban students due to greater difficulty in organizing transportation, lesser availability of textbooks, and lesser availability of places in secondary schools. When the disadvantaged students leave school, they have acquired less cognitive skills and are less able to compete in the job market, resulting in higher probability of unemployment. For women, their child care responsibility becomes a barrier to participation in the labor market and to income-generating activities.

14. **Policy Options.** Policy instruments to improve learning generally can be grouped into five types: (i) provision of instructional materials and facilities (such as textbooks, libraries, and laboratories); (ii) increasing the opportunity to learn through increasing instructional time and homework; (iii) provision of teacher training; (iv) increasing teachers' salaries; (v) and reducing class size. Other factors which affect learning achievement include home environment and parental practices. However, these can be less directly influenced by policy intervention and are beyond the scope of this study. Research on school effectiveness found that providing school libraries is cost-effective in nearly 90 percent of the studies, and increasing instructional time (such as lengthening the school day or providing additional instruction in a certain subject) almost equally effective. Asking students to do homework comes third, and provision of textbooks to children who do not have them comes fourth. Improving teachers' knowledge through training is found to be effective the majority of the cases, and having experienced teachers also come close. However, provision of laboratories, increasing teacher salaries, and reducing class size are found to be effective in less than 40 percent of the cases.

15. Policy makers are well advised to take note of these findings before committing resources to interventions which are least cost-effective but have enormous recurrent cost implications. Given the importance of libraries in facilitating learning, the government is going in the right direction in providing school libraries. Also, given the importance of textbooks to learning, and since over 30 percent of students in

the lowest quintile lack books, the elimination of textbook subsidies in 1988 was misguided. Building up the school library and providing book grants are two areas where the government can act effectively.

16. On the issue of instructional time there is room for improvement. T&T now has 195 school days per school year and 897 hours of instruction for primary education, lower than East Asian countries such as South Korea which has 204 days and 980 hours, and Malaysia, which has 210 days and 1,008 hours. To improve overall achievement of students in the country, it is advisable for the authorities to increase the school days or instructional hours. This will provide more opportunity to learn and to solidify what has been taught. Extending the number of school days would have resource implications. However, the Education Policy Paper recommends increasing teachers' salaries as an incentive for acquiring better qualifications. If this is to be implemented, the reward to teachers for longer school days instruction hours should be included as part of the reward.

17. On the issue of instructional hours and deshifting, the Education Policy Paper explicitly recognizes the shorter hours offered in junior secondary schools as a problem and talks of deshifting as a remedy. However, available international evidence does not find any negative impact of double-shift schooling, provided that the hours of instruction have been adequate. It is, therefore, advisable that junior secondary education remains on a double-shift basis but the hours of instruction be extended for each shift because the resource implications for deshifting is enormous.

18. Teacher training is an area that requires special attention if quality of education is to be raised, a need explicitly acknowledged in the Education Policy Paper. The high unit cost of Teachers' College raises the question as to the cost-effectiveness of the current form of pre-service teacher training. Therefore, the challenge is not to provide more pre-service training of the same kind, but to find a cost-effective way to support teachers on their job. Also, the fact that schools which have more teachers with university degrees have higher performance indicate that teachers' knowledge of their subject matter is critical to improve student learning. Thus, pedagogical training must be accompanied by a strong academic training of teachers. How teacher training can be done cost-effectively requires further research and careful thinking. One example is the publication and distribution of teachers' guides that provides concrete support for instruction. Another is to make use of education technology and the mass media to provide information to a mass audience of students, parents, and teachers.

19. The Education Policy Paper also advocates the reduction of pupil-to-teacher ratio from 30:1 to 25:1 or 20:1 as a means to improve quality. Ironically, this policy variable has been found to be the least cost-effective, and T&T's ratios compare very favorably with other countries. In T&T, the apparent correlation between pupil-to-teacher ratio and student achievement might be spurious--better students are tracked into schools which are better resourced. Before measures are taken in this respect, it is advisable to take into account three issues. First, given the rigidity in the redeployment and dismissal of teachers, the magnitude of expanding the teaching force in the government's proposal will have serious long-term implications for the recurrent expenditure on education. Any step in this direction must take the demographic trends into account. Given the projected decline in the primary school-age population, even if the current number of teachers remained unchanged, declining primary school enrollment will lead to a decline in the pupil-to-teacher ratio. Moreover, it is not the pupil-to-teacher ratio per se that will affect quality, but the training and the skill mix of teachers that is important. Consideration should be given on how best to educate, upgrade, and retain mathematics and science teachers at all levels, because these skills are also sought after by other occupations, and yet they are critical to facilitating the improvement of the competitiveness of the workforce.

20. A related issue is overcrowding in classrooms, and poor acoustic and lighting conditions. Many primary school buildings are structures without permanent partitions for classrooms. Classes are separated by mobile screens. The noise level within each building is extremely high, rendering it difficult for children to

listen. Improvement of the physical arrangement of classrooms might lead to effective learning. However, renovation would require high capital spending, and improvement can only be gradual. It is advisable that this factor be taken into account when building new schools.

21. To provide a level playing field for the poor, it is desirable to target children in the first quintile for assistance to enhance over school readiness. The use of a compensatory voucher to enable poor households to pursue pre-school education might give poor children a head start. At the same time, infant classes offered in primary schools should be closely scrutinized to ensure that they offer active, high quality kindergarten education. Furthermore, the provision of child care would enable women to work to generate income for their families.

22. The payoff in terms of higher employment prospects of students should be examined carefully given the large amount of public resources spent on formal and informal vocational training.

23. Finally, it is important to mention the impact of increasing expenditure on school lunch. While nutrition is known to have positive effects on learning and school lunch is a means of income transfer, given that spending on school lunch is rapidly growing to the extent that it consumed 16 percent of primary education expenditure, it is important to contain government spending in this area in order to protect educational inputs from being crowded out.

24. The population projection from 1990 to 2020 shows that the population of children of pre-school and primary school ages will decline at the beginning of the next century before they grow modestly again. The implications for the future are that even if spending remains unchanged at this level, it will be translated into higher per-student expenditure, thereby making it possible to improve quality. However, the population of the 12-to-24-year-olds will grow and peak at different periods before they go on a decline. Therefore, the future demand for schooling will be in the post-primary levels. The challenge to the education sector is to increase supply to maintain the current transition rates, and eventually to universalize lower secondary education. To finance this, public expenditure has to be increased and cost recovery seems to be unavoidable. Various studies have found that students from the middle- and upper-income groups are overwhelmingly represented in senior secondary education and tertiary education. To ensure that children in the lower end of the income distribution have an equal opportunity for junior secondary education, charging tuition fees at upper secondary level would help relieve the resource constraint. Scholarships and grants targeted at low-income students should be made available to the qualified students to ensure that they are not denied access on the basis of their ability to pay.



# 1. Education in Trinidad and Tobago

## A. Accomplishments and Challenges

1.1 Trinidad and Tobago (T&T) has made much progress in education. Since Independence, the country has built a complete education system from pre-schools to postgraduate studies. Near universal primary education was achieved as early as the 1960s. Equal access has been extended to all children irrespective of gender, race and religion. In 1994, about 45 percent of the 3- and 4-year-olds enrolled in pre-school, about 70 percent of primary school graduates entered secondary education; and over 6 percent of the 19-to-24-year-olds enrolled in post-secondary education.

1.2 Expansion of the education system has been, in substantial part, financed by the country's natural endowment of petroleum. In the 1970s and early 1980s, when petroleum and its derivatives commanded a premium in the world market, the country enjoyed unprecedented prosperity, thereby enabling rapid expansion of secondary and tertiary education. However, as oil prices plummeted since 1982, the economy has suffered from negative growth in 9 of the last 12 years. GDP per capita nearly halved, falling from \$6,600 in 1982 to \$3,700 by 1994. Government budgetary deficits led to the adoption of structural adjustment measures. Government spending was reduced by about 29 percent between 1985-87 and 1992-94, and public allocation to education by about 26 percent. As the economy stagnated, social problems mounted. Unemployment rates climbed from 10 percent in 1982 to 20 percent by 1992. Most of the unemployed are youths. The incidence of poverty also increased. About 21 percent of the population lived below the poverty line in 1992, and 10 percent could not even afford a nutritionally balanced food basket.

1.3 To reverse the economic decline, the government embarked in 1992 on a major reform program to divest public enterprises and to orient the private sector towards export; to remove policy impediments that have constrained the level and efficiency of investments in non-oil/gas sectors; and to improve the efficiency of production and exploration of oil and gas. As a result of these measures, real GDP grew by nearly 4 percent in 1994 after a decade of almost uninterrupted economic decline. The projected growth rate between 1995 and 1999 is 2 to 4 percent (World Bank, 1995). With the resumption of economic growth, it is imperative to address the problems of education that have resulted from a decade of reduced investment in the sector. The major challenges are quantitative expansion and qualitative improvement.

1.4 The Ministry of Education (MOE) rose to meet these challenges by organizing a national task force to formulate a comprehensive education reform program. The resultant Education Policy Paper (1993-2003) articulates the vision for educational accomplishment, identifies the areas that require qualitative improvement and quantitative expansion, and lays out a strategy for restructuring the system of educational management and delivery. This ambitious plan calls for a careful examination of the education policies, the past and present patterns of educational finance, and performance of the system. This report begins with a description of the structure, enrollment and population trends, quality, and finance of education in T&T. It analyzes public and private expenditure on education, assesses the impact of adjustment programs on expenditure, and raises issues concerning whether resources have been used efficiently and equitably between different levels of education. Then, it presents analyses that allow an assessment of key dimensions of system performance by income level, and reviews the consequences of educational policies for the poor. The report closes with a discussion of policy options on a range of specific measures to improve performance and to finance reform in an equitable manner.

## **B. The Education System**

1.5 The education system in Trinidad and Tobago provides two years of pre-school education for the age cohort of 3-4; seven years of universal schooling which includes two years of "infant classes" for children aged 5 and 6, and 5 years of primary schooling for the 7-11 age cohort; two years of post-primary classes for those who were not placed in secondary schools; three years of junior secondary education for the 12-14 age cohort; two years of senior secondary education for the 15-16 age group; two years of university-preparatory Sixth Forms for the 17-18 age cohort; two years of technical education also for the 17-18 age group, and higher education for the 19-plus age group. This structure reflects certain prevailing patterns in the Anglophone Caribbean countries (Box 1).

1.6 While universal primary education was attained, the gross enrollment ratio in junior secondary education was below the expected level in comparison with other Caribbean countries, given T&T's Gross National Product (GNP) per capita (Figure 1a). Much of the need for sorting and placement was attributable to the shortage of school places at the post-compulsory levels. Because post-primary education is not universal, students at the end of each schooling cycle have to sit a nationwide examination for selection for publicly subsidized places at the next level. At the end of primary schooling, Standard 5 students sit the Common Entrance Examination (CEE) for placement in Form 1. Those who have failed CEE twice could enroll in post-primary levels for a maximum of two years, and take the School Leaving Certificate Examination (SLCE) to obtain a certificate of having completed primary schooling. If they pass the SLC, they can be placed in Form 2. If they fail twice, their formal schooling in public schools would be terminated, but they have the options for non-formal vocational education at youth camps, youth centers, apprenticeship, private schools, and national services.

1.7 At the secondary level, the 14+ Examination at the end of Form 3 was originally intended to screen students for places in Form 4. It still helps students and schools diagnose problems. The Caribbean Examination Council General Proficiency Examination (CXC), administered at Form 5, certifies the completion of secondary schooling and selects students for Form 6. About 20 percent of Form 5 students also take the Cambridge General Certificate of Education Ordinary Level (GCE O Level) Examination which is set and scored in the United Kingdom. The National Examination Council (NEC) Examination, also administered at Form 5, screens students in the vocational craft track for admission to Technical Institutes. Graduates from Technical Institutes have to be certified by the process of Certificate of Acquired Competencies (CAC). The Cambridge General Certificate of Education Advanced Level (GCE A Level) is administered at the end of Upper Sixth Form for selection for university places.<sup>1</sup> This system of selection and examination has truncated the curriculum, driven classroom interaction, and generated enormous pressure on students, parents, and teachers. Any attempts to reform the system must address the curriculum, examination, and financing issues simultaneously.

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<sup>1</sup>The Education Policy Paper proposes reform of the examination system by having a 2-part National Certificate of Secondary Education (NCSE). Part I will cover junior secondary education, and Part II, senior secondary education. There is also a proposal to develop a Post-Secondary Caribbean Education Certificate Examination (PSCEC) to target a wider range than the traditional "A" Level groups, including those in the technical and vocational streams.

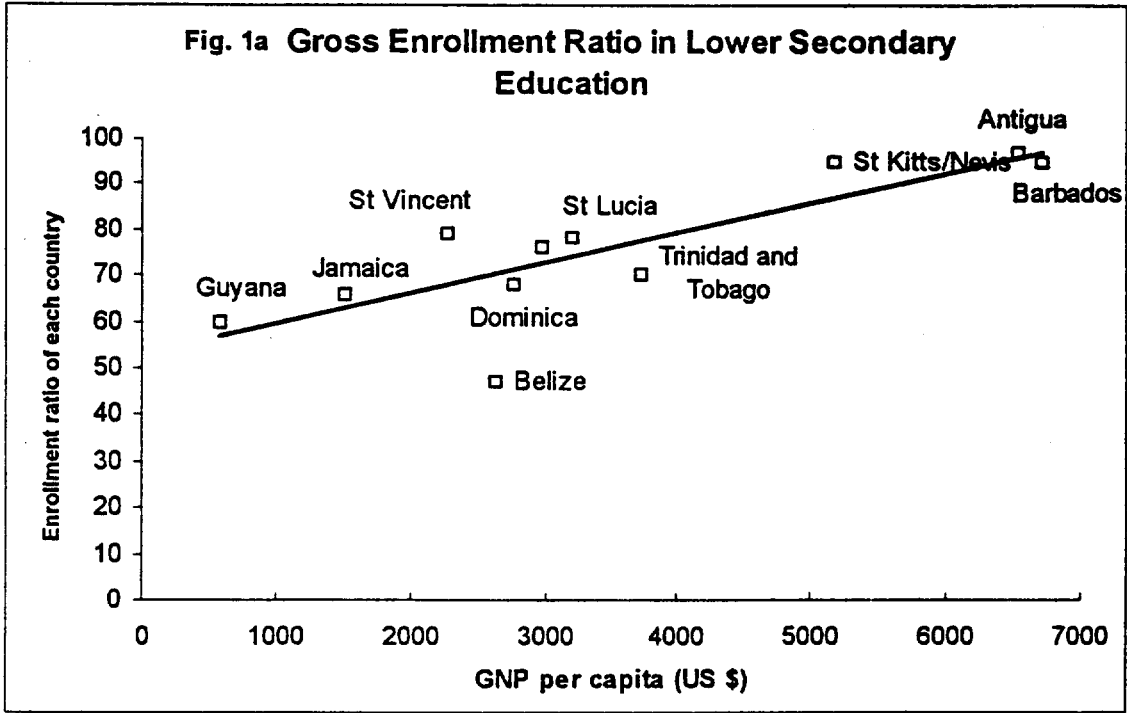
Box 1: The Education System in Trinidad and Tobago, 1994

Level	Age-group	Gross Enrollment	Enrollment	Public & Private Finance	Entrance Eligibility	Exit Examination
Pre-Primary	3-4	44.9%	22 000	6% government 13% assisted 81% private	None	None
Primary:		94.4%	191,632	30% government 67% assisted 3% private	Catchment of School District	Common Entrance Exam (CEE) (Placement to Secondary)
Infant Classes	5-6					
Standards 1-5	7-11					
Post-primary (Exist from Primary)	12-14	15.7%	13,372		Unplaced Students based on CEE results	School-Leaving Exam (SLC) to certificate end of primary ed.
Secondary:		57.3%	104,214	77% government		
Forms I-3	12-14	69.3%	58,920	18% assisted	CEE or	Caribbean Exam Council Exam (CXC); GCE
Forms 4-5	15-16	72.4%	36,189	5% private	SLC; 14+	O level; National Exam Council (NEC).
Forms 6-7	17-18	19.4%	9,105		Exam	
Vocational Education	15-18					
Apprenticeship		1.4%	2,017	Government &		
Youth & Trade Centers		0.7%	687	community groups		
Technical Education						
Tech. Institutes	17-18	8.7%	4,084		CXC scores; entrance exam set by Tech. Inst.	NEC Craft Certificate & Technican Diploma
Teachers' Colleges	17-19	0.9%	651		CXC scores	Board of Teacher Training Exam
Tertiary Education	19-24	5.4%	7,166	100% government	GCE "A" Level	
University of West Indies			5,191	with tuition fees		UWI's own exam
NIHERST*			1,035	in some cases		
Ciprani Labor College			403			
Medical Complex			484			
E.C.I.A.F.**			53			

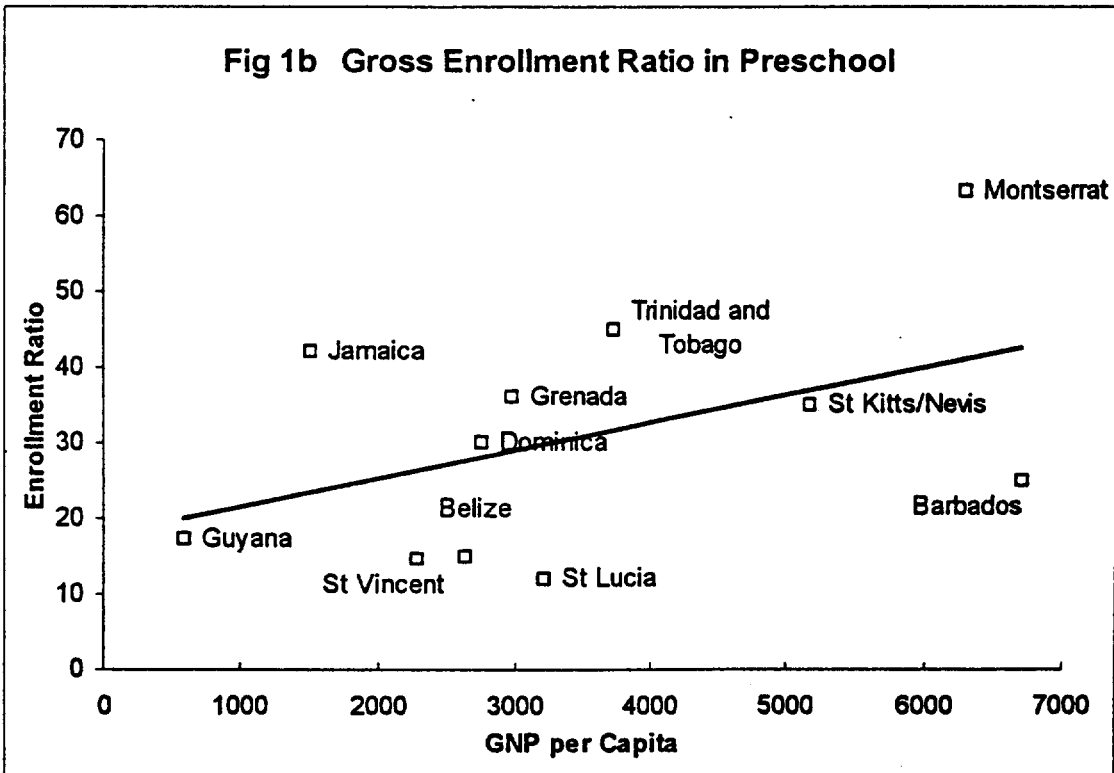
Key: NIHERST stands for National Institute of Higher Education Research and Technology, and E.C.I.A.F. stands for Eastern Caribbean Institute of Agriculture and Forestry

Source: Ministry of Education, 1994 for enrollment data; World Bank Population Projection for net enrollment rates.

**Fig. 1a Gross Enrollment Ratio in Lower Secondary Education**



**Fig 1b Gross Enrollment Ratio in Preschool**





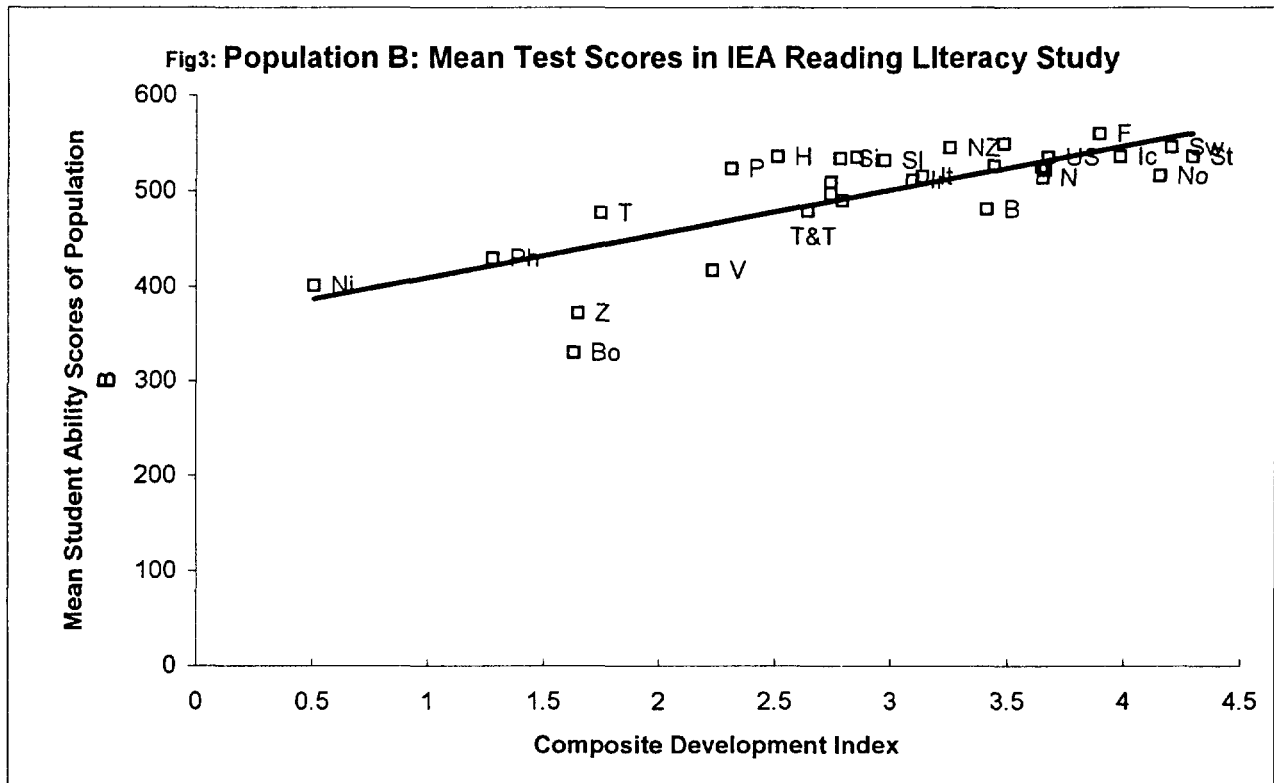
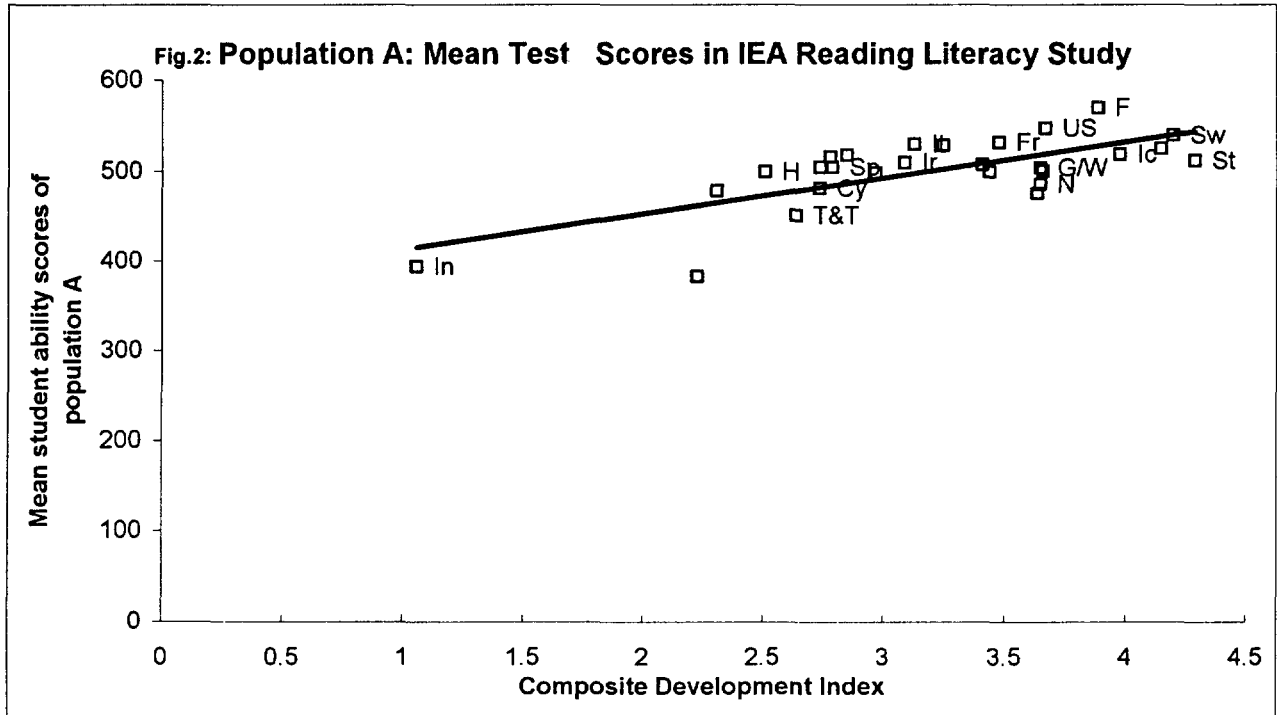
## C. Quality

1.8 The challenges to the education system are many, and quality is among the most important ones. There is increasing evidence that the quality of education provided in most schools is uneven and poor. An international study on reading literacy conducted in 1990/91 found that T&T's 9- and 14-year-olds performed poorly relative to students in some 20 participating countries and confirmed the existence of large between-school variance, as well as rural and urban disparities, in achievement<sup>2</sup> (Elley, 1992; Lundberg and Linnakyla, 1992; Schleicher and Yip, 1994). The study found that T&T students at the upper primary level performed below the country's level of development<sup>3</sup> (Figure 2). Although lower secondary students had higher average scores, they still performed slightly below expectation (Figure 3). The higher average score at the lower secondary level reflected the effect of selection by the CEE exam. As low achievers were screened out of the system, the average performance of those who moved on would be better. However, the standard deviation also increased from 79 around the mean score of 451 in upper primary education to 89 around the mean score of 479 in lower secondary education. This indicated that while the average score appeared to be higher at lower secondary level than the upper primary level, the dispersion was wider at the higher level.

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<sup>2</sup> The study was sponsored by the International Association for the Evaluation of Educational Achievement (IEA), which is a network of national educational research organizations in some 50 countries. Participation is voluntary, and the Ministry of Education served as the National Research Coordinators of this study of Reading Literacy (See MOE, A Report on the IEA Reading Literacy Study conducted in Trinidad and Tobago, 1989-92). Information was collected from a nationally representative sample of 182 primary schools and 93 secondary schools. Questionnaires were collected from 248 primary school teachers and 208 secondary school teachers about their characteristics and practices, and from principals of the selected schools about school type, location, enrollment, parental cooperation, library resources, staff, reading practices, administration, and principal experience. A reading test was administered to 3,027 9-year-olds (Population A, upper primary level), and another one to 3,684 14-year-olds (Population B, junior secondary level). The tests comprised items on three domains of reading literacy: (i) narrative, which was composed of continuous texts of more than 1,000 words of factual or fictional story-telling; (ii) exposition, which was made up of continuous texts designed to describe, explain, or convey factual information; and (iii) document which was structured information displays presented in the form of charts, tables, maps, graphs, lists or sets of instruction, and which required students to search and process the facts.

<sup>3</sup> This was measured by a composite development index comprising GNP per capita, public expenditure on education per student, life expectancy, percentage of low birth weight, newspapers per 1,000 population, and percentage of adult literacy.



1.9 This alarming trend is confirmed by the increase in the variance in test scores between schools from 25 percent at the upper primary level to 58 percent at the lower secondary level. Correspondingly, the portion of the achievement variance accounted for by the differences between students (within school) was reduced from 75 percent at the upper primary level to 42 percent at the lower secondary level (Wu and Hua, 1996).<sup>4</sup> The growing between-school variance at the higher levels of the education pyramid indicated that the variability in learning outcomes was increasingly less attributable to the differences between students (such as parental education and income, home resources, student age and gender), but more to the differences between schools (for example, in terms of library resources, availability of instructional materials and facilities, teachers' education and experience, principals' experience, percentage of student absenteeism, instructional time, curriculum coverage, and parental cooperation). In other words, where the between-school variance in achievement is large, there is much room for policy interventions.

1.10 Indicators of quality in senior secondary education can be found in the regional CXC examination which was taken by students in other Caribbean countries. The results provide more evidence of progressive improvement of average performance at an even higher level of the school system. In comparison with students from other Caribbean countries, T&T students' performance in Biology and Physics was well above the prediction based on the country's Gross National Product (GNP) per capita<sup>5</sup> (Figures 4 & 8, and Appendix 22). This was largely attributable to screening throughout the education system and the relatively low participation rates in taking examination in these subjects. For example, only 14 percent of the total candidates took the Biology test, and 8 percent the Physics test. In English A,<sup>6</sup> which had a participation rate as high as 58 percent, T&T students performed below the predicted level (Figure 6a). In Mathematics, which had a participation rate of 52 percent, T&T students performed at the predicted level (Figure 7). These results have two implications. First, T&T is successful in educating a small number of elite students who are second to none; however, it is less successful in bringing the masses to a level of high performance. Second, the low rates of student participation in the study of science indicated a relatively low stock of future scientists and engineers. All of these indicators boded poorly for the country's new economic development strategy of reducing its reliance on petroleum exports by encouraging foreign investment and developing labor intensive industries; a low skilled but relatively high cost labor force is not competitive on the international market. The following section examines the issues of governance and finance in order to better understand the roots of disparity in quality.

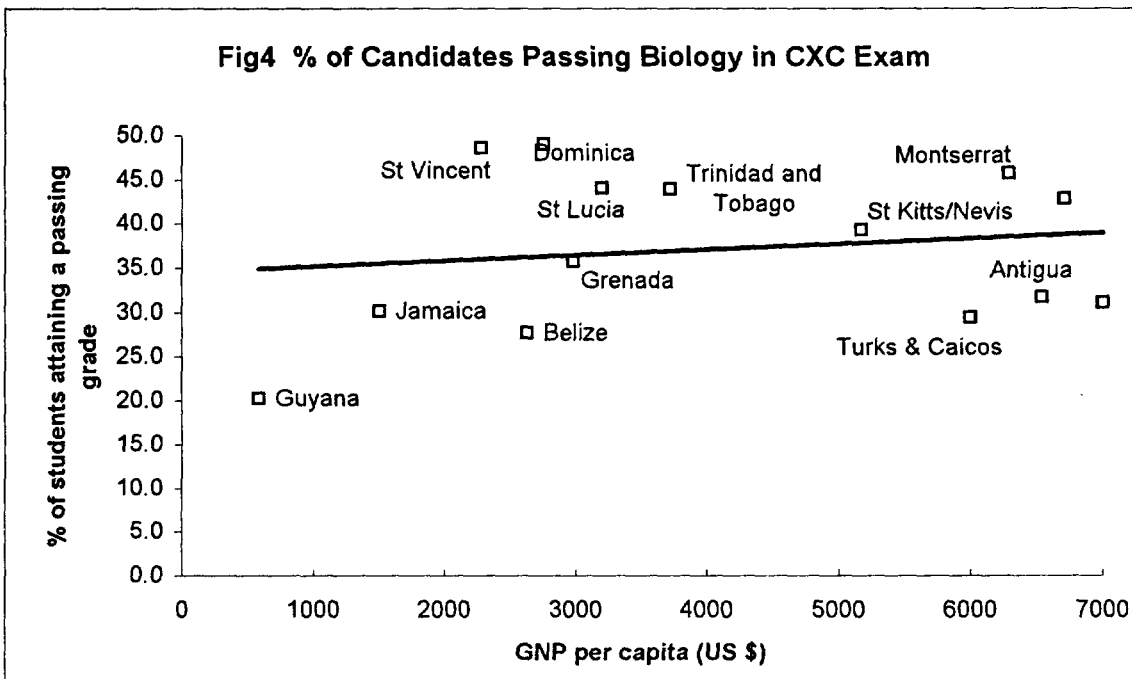
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<sup>4</sup> The average proportion of between-school variance in achievement in industrialized countries was 12 percent. In developing countries, this ranged from 18 percent in Colombia to 33 percent in Jamaica and 60 percent in Egypt at the primary level, and from 12 percent in Botswana to 62 percent in Brazil at the secondary level (Riddell, 1993). Thus, the between-school variance at the lower secondary level in T&T put it in the category of high variance countries.

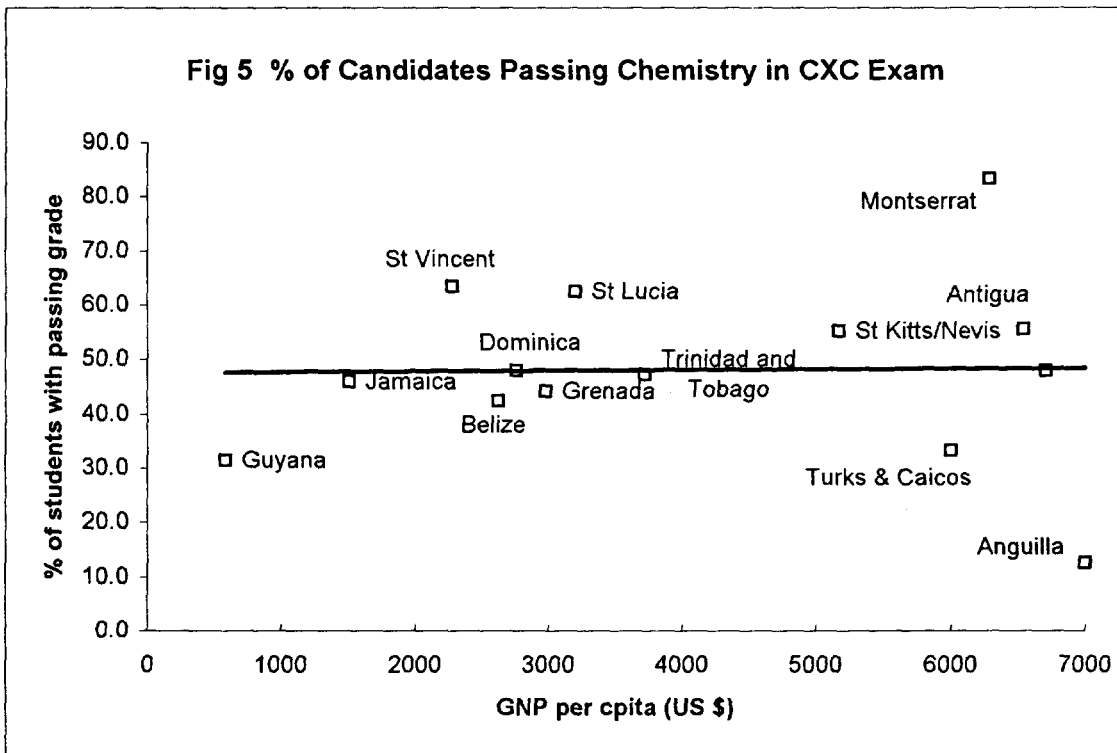
<sup>5</sup> Students attaining Grades 1 and 2 in the CXC exams are considered having passed the examination by employers and schools for further studies.

<sup>6</sup> English A is the required for matriculation. It is more demanding than English B.

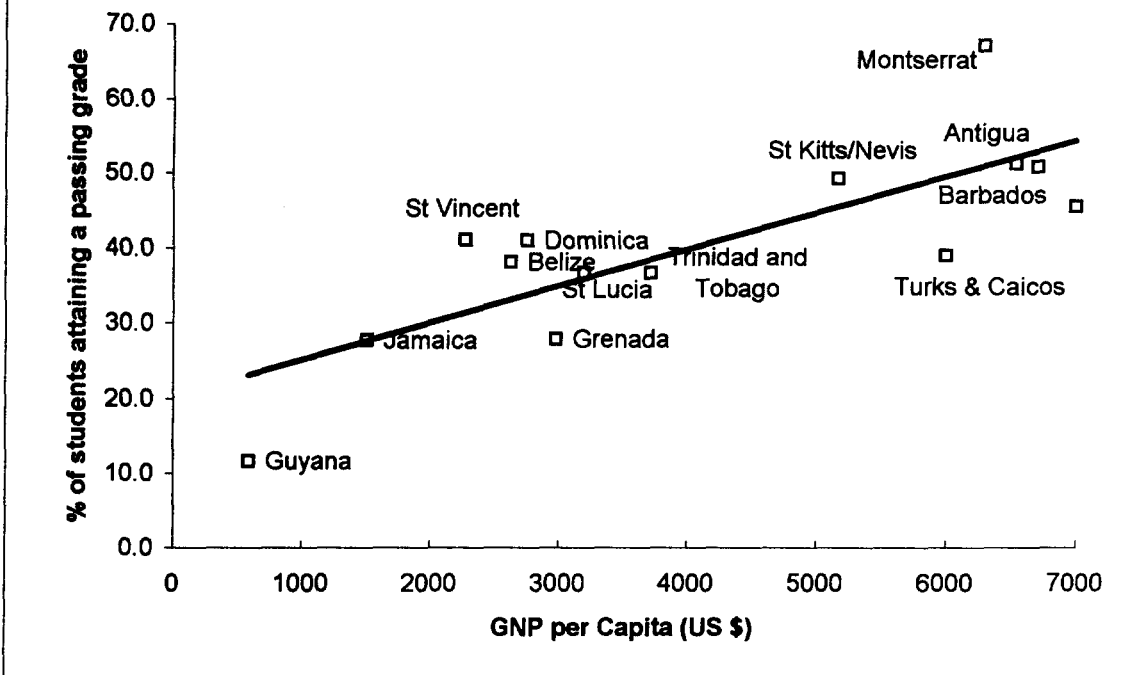
**Fig4 % of Candidates Passing Biology in CXC Exam**



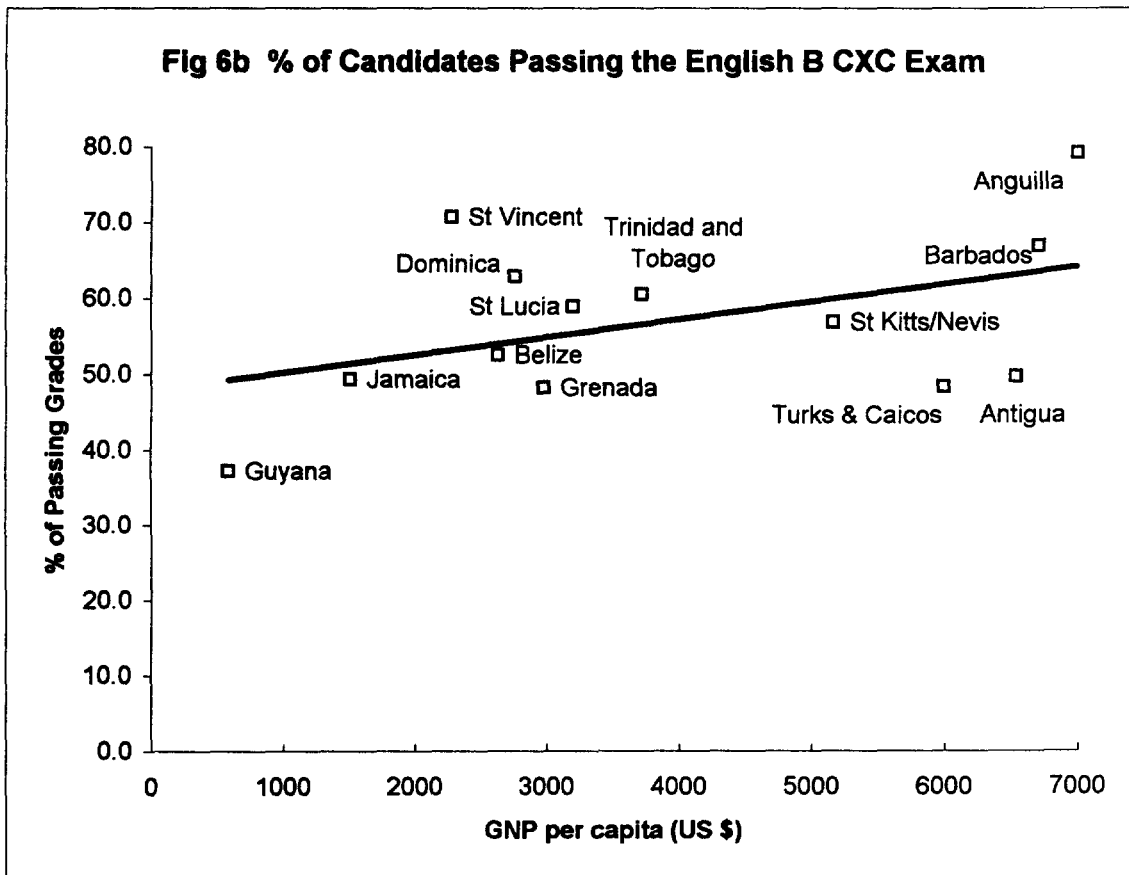
**Fig 5 % of Candidates Passing Chemistry in CXC Exam**



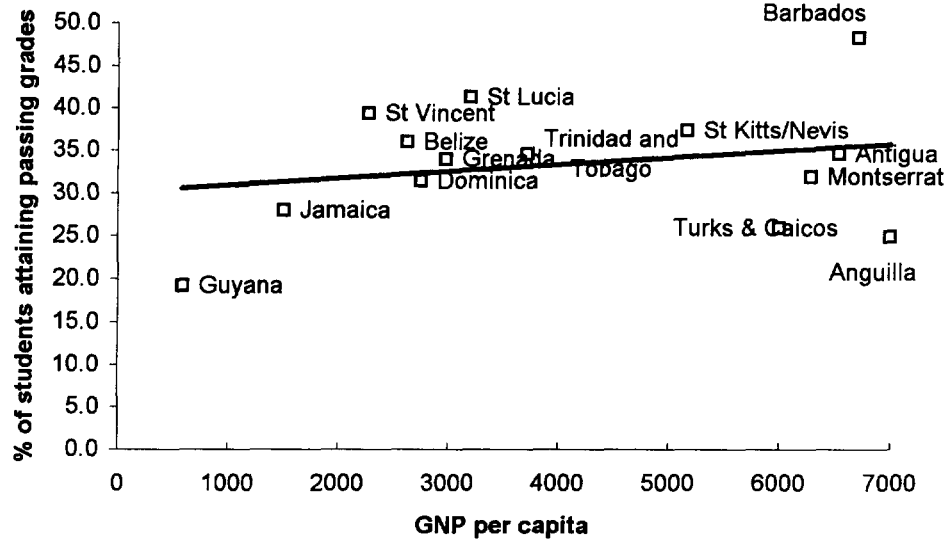
**Fig. 6a % of Candidates Passing English A in CXC Exam**



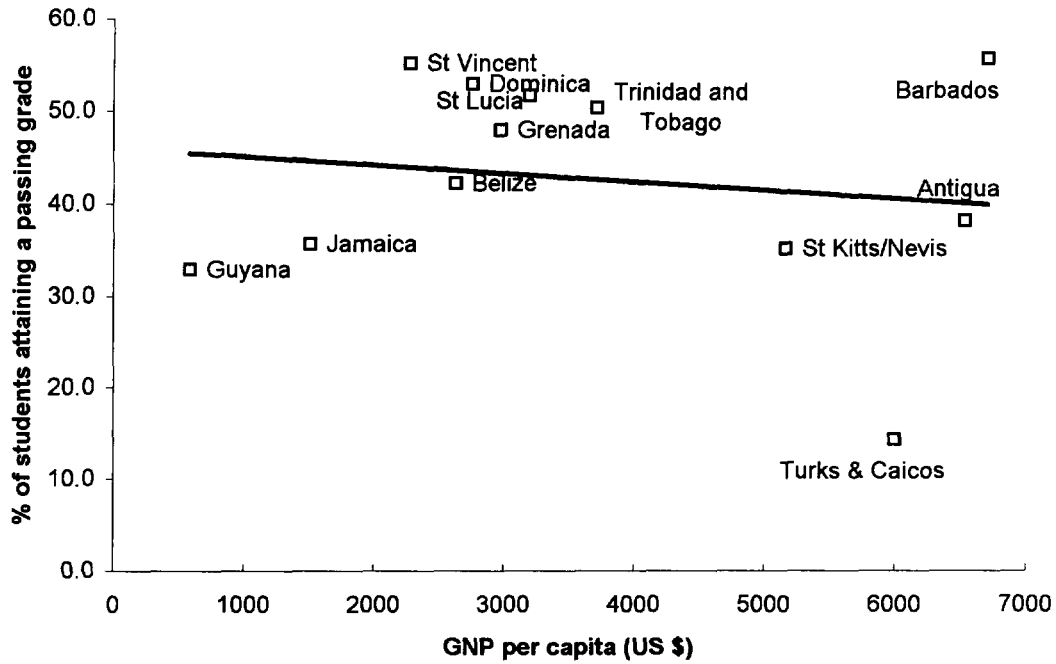
**Fig 6b % of Candidates Passing the English B CXC Exam**



**Fig. 7 % of Candidates Passing Math in CXC Exam**



**Fig 8 % of Candidates passing the Physics CXC Exam**



## **D. Governance and Finance**

1.11 Governance of education is public, religious, and private; however, public finance extends, to a large extent, to non-government schools. This pattern of financing is rooted in the history of educational development in the country. Before Independence in 1962, religious groups (the Roman Catholics, Anglicans, Baptists, Presbyterians, Hindus and Muslims) were active providers of primary and secondary education. They operated schools through their respective denominational boards and charged tuition fees at secondary level, except to students on government scholarship. These schools received government grants for recurrent cost that covered more than 90 percent of their actual cost and, when the government so decided, a share of capital costs. A pre-Independence agreement between the government and these denominational boards in 1961, known as the Concordat, assured the latter their ownership and right of direct control and management of all denominational primary and secondary schools. The government undertook to pay teachers' salaries, other recurrent cost, 75 percent of capital cost of denominated primary schools, and 66.6 percent of capital cost of denominational secondary schools (Jules, 1994).

1.12 There exist three types of schools -- government, government-assisted (denominational), and private schools. Private schools are run by private bodies, generally for profit, and receive no government subsidies. In 1993, these three types of schools enrolled 30, 67, and 3 percent of primary school students, respectively, and 77, 18, and 5 percent of secondary school students, respectively (Box 1). Both government and assisted schools provide free tuition. Private schools are fee-charging. In 1991, private primary schools charged, on average, a monthly fee of TT\$123, and secondary schools, TT\$85 (Private School Survey, 1991; see Appendix 11).

1.13 Some private primary schools cater for children of the extremely well-off. However, at the secondary level, the best schools are assisted and government schools due to the screening process by the CEE examination. Private secondary schools often cater for the children whose scores in the CEE are too low to secure them a place in government or assisted schools, but whose families can afford to pay for their education and absorb the foregone earnings.

1.14 Secondary schools are diverse in types and curricula, but are generally divided into academic and vocational/technical streams; the many types of examination at the secondary level reflect this diversity. Academic courses are offered in traditional 7-year and 5-year schools, run by government or religious bodies. They enrolled 30 percent of secondary school students in 1994. Other types are known as New Sector Schools, built after Independence with the aim of providing mass secondary schooling for a diverse population. These include 3-year junior secondary schools, 2-year senior comprehensive schools, 5-year senior secondary schools, and 5-year composite schools. Junior secondary schools, which enroll 36 percent of secondary students, provide general education with a mixture of craft courses. Twenty out of 24 of them operate on double shifts. Nearly half of their graduates proceed to Forms 4-5 in two-year senior comprehensive schools. These senior comprehensive, senior secondary, and composite schools offer a combination of general, specialized craft, and pre-technician courses. They provide full-day instruction. (Table 1).

Table 1: Types of and Enrollment in Secondary Schools, 1994

School Type	# of Schools	% of Student Enrolled	Program
<u>Traditional Schools</u>	46	30	Academic
Govt, Forms 1-5 or 1-7	17		
Assisted, Forms 1-5 or 1-7	29		
<u>New Sector Schools</u>	55	66	
Junior Secondary (Forms 1-3)	24	36	General ed. & craft
Senior Comprehensive (Forms 4-5)	12	15	Mixed general, & pre-technical.
Senior Secondary Comprehensive (Forms 1-5)	3	4	
Composite (Forms 1-5)	9	7	Mixed general & pre-technical
Secondary	1	-	
Senior Secondary	6	4	
<u>Private Schools</u>	29	4	
Total	130	100	

Source: Ministry of Education.

Note: The percentage is rounded.

1.15 The government fully finances the recurrent and capital expenditure of all government schools, as well as the recurrent expenditure of all assisted schools at both primary and secondary level. Specifically, public expenditure covers four major categories of recurrent expenditures in both government and assisted schools:

- a) the personnel expenditure which includes salaries, cost of living adjustment allowance (COLA), National Insurance Scheme (NIS)<sup>7</sup>, pensions and gratuities of teachers (teachers in government and assisted schools belong to the same teaching service are paid on the same scale with the same pension and benefits);
- b) the purchase of goods and services, which include utilities, instructional materials, supplies, training, examination, and travel;
- c) minor equipment, which covers spare parts and small items; and
- d) transfers and subsidies, which include grants to assisted schools earmarked for specific goods and services and minor equipment; subject grants; scholarships for secondary school students, purchase of places in private secondary schools to accommodate qualified students who are not placed in public secondary schools, books and uniform grants for primary and secondary school students, books for children of deceased officers who were killed in the coup attempt of 1991, and school lunch for low-income students.<sup>8</sup>

<sup>7</sup>NIS includes maternity leaves, invalidity and incapacity. Employees pay one-third, and employers pay two-thirds.

<sup>8</sup>Transfer to statutory boards such as the Industrial Training Board, which is a separate category in the government's estimates, is subsumed under the category of transfers and subsidies in this review because it is directly related to vocational and technical education.



1.16 Funding to assisted schools are negotiated once every three to five years. Once an agreement is reached, the government has to honor its commitment even in times of a budget crunch. Expenditure on utilities and subject grants to assisted schools are not subject to cut. However, in government schools, there are no subject grants, and expenditure are not protected from reduction. This puts government schools at a disadvantage. The government pays 100 percent of the capital expenditure in government schools, and 75 percent of the capital expenditure in assisted primary schools, and 66.6 percent of the capital expenditure in assisted secondary schools. Capital expenditure is used to finance school construction, refurbishment, and major repair. The denominational boards make up the difference in capital expenditure.

1.17 In early childhood education, neither the government nor the religious groups are as active as they have been in primary and secondary education. Of the some 22,000 pre-schoolers, 81 percent attend private pre-schools, which charge an average tuition fees of TT\$51 per month. Only 6 percent enroll in publicly-funded, community-run pre-schools, and 13 percent in Servol<sup>9</sup>-run centers, which receive government subvention. These publicly subsidized pre-schools charged about TT\$20-30 per month.

1.18 At the tertiary level, UWI is an autonomous public institution which receives about 85 percent of its recurrent expenditure from government transfers and subsidies. Tuition fees make up the remaining 15 percent. Tuition fees vary by academic disciplines, ranging from TT\$4,340 per year for full-time study in Arts and Humanities, TT\$3,740 in Social Sciences, and TT\$6,340 in Natural Sciences to TT\$5,340 in Law, TT\$7,780 in Engineering, and TT\$8,130 in Agriculture in 1993 (Appendix 9). UWI's own generated income from research and consultancy is negligible.

1.19 The post-secondary Technical Institutes are government-run and financed. The government also subsidizes a variety of post-primary vocational programs, including youth camps, youth centers, and apprenticeships. Other post-secondary education institutions that receive government subsidies are the Teachers' Colleges, which train primary and junior secondary school teachers, Eastern Caribbean Institute of Agriculture and Forestry (ECIAF), the new National Institute for Higher Education, and School of Continuing Studies at UWI.

### ***E. Differences in Resource Endowment Among Different Types of Schools***

1.20 The structure of governance and financing in T&T raises the question of how the differences in resource endowment among government, assisted, and private were translated into differences in indicators of school quality. An examination of two widely used indicators--pupil-to-teacher ratios and teacher qualification--suggests that the differences are substantial. The average pupil-to-teacher ratio in government and assisted primary schools ranges from 26:1 to 28:1, with rare extremes of 20:1 and 38:1. By contrast, the ratio in private primary schools was 18:1 (T&T government's private school survey, 1991). The pupil-to-teacher ratios for public secondary schools vary systematically. They are 28:1 for junior secondary, 15:1 for senior comprehensive, 20:1 for composite, 17:1 for traditional government, and 20:1 for assisted secondary schools. The ratio for private secondary schools was 19:1 (Report on Education Statistics, 1990-91, p. 14-15). These ratios appear to correlate with achievement results among these schools, which will be discussed in greater details in Chapter 3.

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<sup>9</sup>Servol is a non-profit, Catholic organization that provides a variety of social services to the poor.

1.21 The qualifications of primary school teachers do not seem to vary much between assisted and government schools. In T&T, primary school teachers are senior secondary school graduates. About 77 percent of primary school teachers in both government and assisted schools have been trained in the Teachers' College, with emphasis on pedagogy. There is little difference in the distribution of trained primary school teachers between government and assisted schools. Information on teacher qualification in private schools is not available. However, Chapter 3 will present evidence to show enormous variability in learning outcomes among students from different types of primary schools (Table 17). It is difficult to ascertain the cause, which could be a mix of factors due to tracking of students from different backgrounds into different types of schools, recruitment of different types of teachers into different school types, and additional inputs in assisted and private primary schools. Further study is required to identify the reasons.

1.22 At the secondary level, there are systematic differences in teachers' qualifications among different types of schools. Secondary schools generally have a mix of teachers: some are university graduates with a degree in a certain subject specialty (known as graduate teachers), who may or may not have received pedagogical training; others are senior secondary graduates who may or may not have been trained in Teachers' Colleges (known as non-graduate teachers). 55 percent of teachers at junior secondary schools are without a university degree, compared with only 17 percent in traditional assisted schools (Table 2). Chapter 3 discusses the variation in student achievement by types of secondary schools.

1.23 A major reason for these differences in resource endowment can be attributed to the fact that these various types of schools have different sources of funding. The following section discusses how private spending on education can make up for short falls in public funding.

Table 2: Teachers' Qualification at the Secondary Level

	Without University Degree on Subject Matter (%)	Without Degree & Without Pedagogical Training (%)	Total # of Teachers in Schools	Pupil: Teacher Ratio
Junior Secondary	55	5	1,337	28:1
Senior/Comprehensive	39	27	1,546	15:1
Composite	54	31	351	20:1
Traditional Govt.	37	13	697	17:1
Traditional Assisted	17	7	908	20:1

Source: Report on Education Statistics, 1990-1991, p. 31, 34-36.

## **F. Private Expenditure on Education**

### **(1) Sources of private funding.**

1.24 Private expenditure on education includes both household spending and school/denominational board expenditure. The former comprises spending on textbooks, uniform, transportation, and meals. The latter includes corporate donation, transfer from religious bodies, and parental contribution over and above their educational spending, for the purposes of capital construction, maintenance and repair, and improvement of educational facilities and instructional materials.

1.25 While the formula for funding of recurrent expenditure does not appear to distinguish between government and assisted schools, assisted schools can tap into more diverse resources, including religious sources. Assisted schools that have a good reputation and connection with the business and professional communities can raise substantial funds to supplement their recurrent and capital spending. Box 2 provides an example of an extremely successful school which is able to raise funds, in a year, 135 times more than the government subvention. Therefore, the resource endowment differs enormously from school to school. The unaccounted for differential in inputs is a likely reason behind the large variability in learning outcomes. In the absence of a survey on nongovernmental sources of funding for schools, it is difficult to estimate the total amount of contribution from companies, religious bodies, and communities because of the enormous variability from school to school and from year to year.

**Box 2: The Total Sources of Public and Private Funding in An Extremely Successful Assisted School**

The ability of schools to generate their own income varies tremendously from school to school and from year to year. Often, the location of the school, the business, religious, and community network the school has, and the leadership of school management matter in the ability of the school to generate own income. The following case is an unusually successful Roman Catholic primary school in the business district of Port-of-Spain which raised close to a half a million TT dollars in 1994. It should be noted that the government subvention to assisted schools is over and above teachers' salaries. The additional funds were used by the said school to build up the school library, music rooms, science and computer laboratories. By contrast, government schools, particularly those in rural areas, are not fitted with libraries, let alone laboratories and other activity rooms. This case illustrates just how substantial the variation is in the unaccounted for input from school to schools.

Total sources of public & private funding	TTS	% of Total
Government subvention	3,600	0.7
Corporate Grants	3,250	0.7
Prize Money	4,350	0.9
Raffle	57,977	11.9
Cinema Show	4,536	0.9
Carnival Jam	1,125	0.2
Walkstion-Family day	39,030	8.0
Security Fund	108,000	22.2
Cafeteria	200,006	41.2
Carnival Band	2,870	0.6
Barbecue and Band Launching	59,920	12.3
Miscellaneous	874	0.2
<b>Total Income</b>	<b>485,538</b>	<b>100.0</b>

**(2) Estimates of Total Household Spending on Education**

1.26 Estimates of total household spending on education can be made on the basis of (i) a comprehensive Private School Survey (PSS) conducted jointly by MOE and the Central Statistical Office (CSO) in June,

1991; (ii) Survey of Living Conditions (SLC) conducted by the MOPD in June, 1992; and (iii) information gathered during the mission.

1.27 The PSS provides information about the average tuition fee in private schools at each level of education (Appendices 10 and 11). The total private spending on school tuition can be estimated by multiplying the fees per student by the total enrollment at each level. The SLC provides information about the cost of lunch and travel by education level and by per capita expenditure quintile. However, as this constitutes a relatively small share of the total private cost of education, an average of lunch and travel cost was used to multiply the enrollment at each level to arrive at a total figure. The aggregated household expenditure on books and uniform in the SLC yields no information on the individual and by education level. So the cost of books and uniform is roughly estimated on the basis of inquiry during mission. The estimates of private spending on education are presented in Appendix 11. Table 3 summarizes the estimates of private spending on education as a percentage of GDP.

1.28 An important part of private spending which could not be estimated is that on private tutoring after school, which is common among middle and upper income families, given the enormous examination pressure. This is another unaccounted for source that affects learning outcomes.

Table 3: Estimates of Private Spending on Education, 1991

	In Million 1991 TT\$	As % of GDP
Tuition fees in private schools	35.2	0.16
UWI student tuition fees	17.6	0.08
Total travel and lunch expense of private school students	32.3	0.14
Total book expense of private school students	6.5	0.03
Total uniform expenses of private school students	6.5	0.03
Total travel and lunch of public school students	262.0	1.16
Total book expenses of public school students	46.4	0.21
Total uniform expense of public school students	46.4	0.21
Total household spending on education	453.0	2.01

1.29 In conclusion, private spending on education has been quite substantial in T&T. In addition to the estimated household spending which is equivalent to 2 percent of GDP or half of the public expenditure on education, other sources such as corporate and religious body donation and private tutoring would raise the total private sector spending on education above the 2 percent level. The level of private funding, just like public expenditure, is affected by the economic conditions of the country. Just as household disposable income and ability to invest in education are affected by economically active members' employment status and earnings, so are corporate donations influenced by corporate profits and losses. In times of recession, private spending can also be expected to be constrained. However, the ability and willingness to invest in education do vary by household income levels. The policy question is at what level of education and with which income group should the government share cost to ensure equal access to quality education for all. This question will be addressed in Chapter 4 after discussing public expenditure on education and evaluating performance of the system.

## 2. Public Expenditure on Education

2.1 Public expenditure on education accounted for about two-thirds of total education spending in Trinidad and Tobago. The budget on education and training, however, is dispersed among various ministries, although the Ministry of Education (MOE) has the largest share. This does not make it easy for policymakers to develop a comprehensive view of public allocation to education. Any efforts to rationalize the use of scarce resources must begin by identifying allocations to education and training in various ministries in order to establish the magnitude of spending and to identify trends over time. Section 2.1 provides relevant estimates.

### *A. Distribution of Education Expenditure by Ministry*

2.2 Before 1991, the MOE was responsible for primary, secondary, vocational and technical education, teacher training, tertiary education, public libraries, national archives, and contribution to international educational and cultural agencies. The Ministry of Finance's (MOF) budget paid for pensions and gratuities of teachers, administrative, and support staff in the education sectors. The Ministry of Energy and Labor (MOEL), Ministry of Planning and Mobilization (MOPM), Ministry of External Affairs (MOEA), Ministry of Health (MOH), and Ministry of Industry, Enterprise, and Consumer Affairs (MIECA) also had small budgetary allocations for vocational and technical education and training, medical education, and pre-schools (see Boxes 3 & 4).

2.3 MOE has the authority to transfer funds within subcategories, such as using the telephone budget to pay the electricity bill. But transferring funds from one major category to another, such as from purchase of goods and services to minor equipment requires the approval of MOF. The budget is so tight that MOE often has to suppress spending in one area in order to release funds on another. Unexpected holidays result in savings from school meals.

2.4 The priorities of MOF are in the following order: service debt, pay salaries, and provide current transfers and subsidies. Within goods and services, the priority is to pay items that have a salary component, then traveling, and electricity. Training and repair and maintenance are not on the priority list. Supplementary funding is outside the budget originally agreed with Parliament. If funds are not forthcoming, training and utilities will be cut to transfer funds to priority areas. The Director of Finance in MOE makes recommendations about what categories of funds to transfer from and the Permanent Secretary approves it. MOF adopts line item funding rather than block release in order to ensure that salaries are paid.

2.5 After 1991, the jurisdiction and budget over higher education, national libraries, and archives were transferred out of MOE to the Office of the Prime Minister. Because of this transfer, a reduction in MOE budget per se after 1991 should not be taken as a reduction in public spending on education as a whole. MOE's budget now covers pre-school, primary, secondary, vocational and technical education, teacher training, special education, adult education, and contribution to international educational and cultural bodies (Box 3).

2.6 MOF's budget continues to pay pension and gratuities to retired education staff. MOF also guarantees loans to UWI students, totaling TT\$5.8 million in 1994, although commercial banks handle the lending. MOH supports part of medical and nurses' education. Ministry of Consumer Affairs and Social Services (MOCASS) provides some funding for pre-primary education. Budgetary support for vocational and technical education and training is provided by Ministry of Labor and Cooperatives (MLC), which supports the Labor College; Ministry of Sports and Youth Affairs (MSYA), which pays for trade centers, youth camps, and youth centers; and Ministry of Environment and National Services (MENS), which covers national services that is vocational in nature. In 1993, the budget for the apprenticeship scheme was transferred to MOE.

2.7 This review excludes from education expenditure general contribution to international educational and cultural bodies, which should be classified under the budget of external affairs, but includes spending that has a direct bearing on education, such as the purchase of services from the Caribbean Examination Council. Box 4 shows how the total public expenditure on education is reclassified and compiled in this review.

2.8 The fiscal year is the same as the calendar year. In June, MOF sends out a circular requesting each Ministry to prepare estimates of expenditure for the following year. These estimates are to be submitted by July 31. MOF estimates the revenue and prepares the budget for presentation to the Parliament in the last week of November. Each ministry is allowed to spend one-twelfth of the estimates in the following January if appropriation has not as yet been made by Parliament. In 1991-93, the appropriation was made in late November. Funds were supposed to be disbursed on a quarterly basis. However, due to the fiscal constraints, they were disbursed monthly, on the basis of the revenue received in the previous month. Most ministries were allocated 90 percent of their estimates.

2.9 MOF releases funds in the first week of the month. MOE makes application to the comptroller for credit in order to issue cheques. Unspent funds in the MOE account are returned to MOF by the end of the year. Salaries are paid directly from MOE to teachers, without going through the schools. Expenditure for goods and services and minor equipment is paid directly by MOE to schools upon approval of request. In the case of capital expenditure, often a substantial portion of the allocation under development program were not spent. In 1986, only 20 percent of the development allocation was spent, although actual spending increased to 97 percent in 1994 (Appendix 20).

**Box 3: Ministries with Budgets for Education and Training**

**Before 1991**

Ministry of Education  
Ministry of Finance  
Ministry of Energy and Labor  
Ministry of Planning and Mobilization  
Ministry of Health  
Ministry of Industry, Enterprise, and Consumer Affairs.

**After 1991**

Ministry of Education  
General administration and educational services  
Pre-primary  
Primary  
General Secondary  
Teacher Training  
Vocational and Technical  
Special Education  
Adult Education

Office of the Prime Minister  
University of West Indies  
National Institute of Higher Education  
National Library

Ministry of Finance  
Pension and gratuities  
Students loan - UWI (guarantee)

Ministry of Health  
UWI - Medical Complex  
Advanced Nursing Courses

Ministry of Labor and Cooperatives  
Cipriani Labor College

Ministry of Youth, Sport, Culture and Creative Arts  
Trade Centers

Ministry of Environment and National Services  
National services

Ministry of Sports and Youth Affairs  
Youth Camps  
Youth Centers

Ministry of Consumer Affairs and Social Services  
Subvention to Servol Adolescent Development Programs

Sources: MOF, *Estimates of Recurrent Expenditure*, various years; and MOPD, *Estimates: Development Programs*, various years.

Note: This report does not examine the budget for training in the Police Force, Army and Coast Guard. Nor does it look into the budget for training in correctional institutions.

**Box 4: Categories and Sources of Funding of Recurrent Public Expenditure on Education**

Categories	Sources of Funding
<b>General Administration and Educational Services</b>	
Personnel	MOE (MOF pension)
Goods & services - LRC, CXC; Examination	MOE
Minor Equipment	MOE
Transfers & subsidies	MOE
<b>Pre-primary</b>	
Transfer & Subsidies	MOE; MOCASS
- Servol	
<b>Primary</b>	
Personnel	MOE (MOF pension)
Goods and services	MOE
Minor Equipment	MOE
Transfer & Subsidies	MOE
- grants to assisted schools (including utilities and sanitation); building grants; books and uniform; school meals	
<b>Secondary</b>	
Personnel	MOE (MOF pension)
Goods and services	MOE
Minor Equipment	MOE
Transfer and Subsidies	MOE
- grants to assisted schools; bought places in Corpus Christi College & Christ College; scholarships; books for children of deceased officers	
<b>Technical and Vocational</b>	
Personnel	MOE (MOF pension)
Goods and services	MOE
Minor Equipment	MOE
Transfer & Subsidies	MLC; MYSCC/MSYA; MENS
- Servol; Matelot Community College; apprenticeship schemes, youth center; youth camps; trade centers; national services; Board of Industrial Training	
<b>Teacher Training</b>	
Personnel	MOE (MOF pension)
Goods and services	MOE
Minor Equipment	MOE
<b>Higher Education</b>	
Transfer & Subsidies	MOPD; MOH; MOF; MLC
- UWI; NIHER, student loan guarantee; Cipriani Labor College; Eric Williams Science Complex (School of Medicine); advanced nursing course	

Sources: MOF, *Estimates of Recurrent Expenditure*, various years; and MOPD, *Estimates: Development Programs*, various years.



## B. Recession, Structural Adjustment, and Public Expenditure on Education

2.10 The impact of the economic down turn that resulted from the fall of the price of petroleum on public expenditures was substantial and negative. Between 1985-87 and 1992-94,<sup>10</sup> GDP declined by 5 percent in real terms (Table 4 and Appendix 1). Central government revenue fell by 23 percent and its expenditure by 29 percent over the same period. Central government had budgetary deficits for most of the 1980s and in the early 1990s (Appendix 2). As deficits have been mostly financed by borrowing, public debt mounted. In 1994, interest payment accounted for 23 percent of total current government expenditure, of which 8.4 percent was for servicing external debt and 14 percent for domestic debt. Interest payment was projected to continue at about the 22 percent level until 1998, when it should decline to 18 percent (World Bank, 1995, Annex C5).

Table 4: GDP, Central Government Revenue and Expenditure, and Government Expenditure on Education , 1985-94(in million Constant 1994 TT\$)

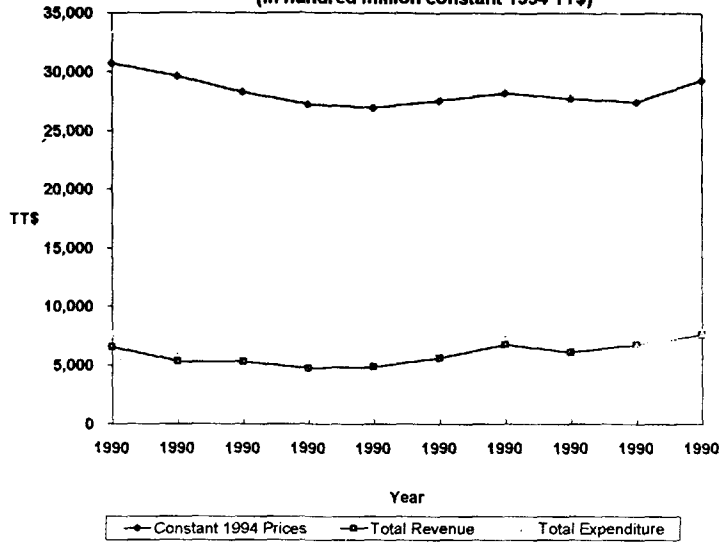
	Three-year Average		% Change 1985-94
	1985-87	1992-94	
GDP	29,531	28,124	-4.8%
Central Govt. Revenue	9,630	7,445	-22.7%
Central Govt. Expenditure	11,221	7,986	-28.8%
Govt. Education Expenditure	1,487	1,103	-25.9%
Education as % of GDP	5.0%	3.9%	-22.2%
Education as % of Govt. Expenditure	13.3%	13.8%	4.2%

Source: Review of the Economy 1993: MOF Detailed of Estimates of Recurrent Expenditure; MOPD, Estimates: Development Programs.

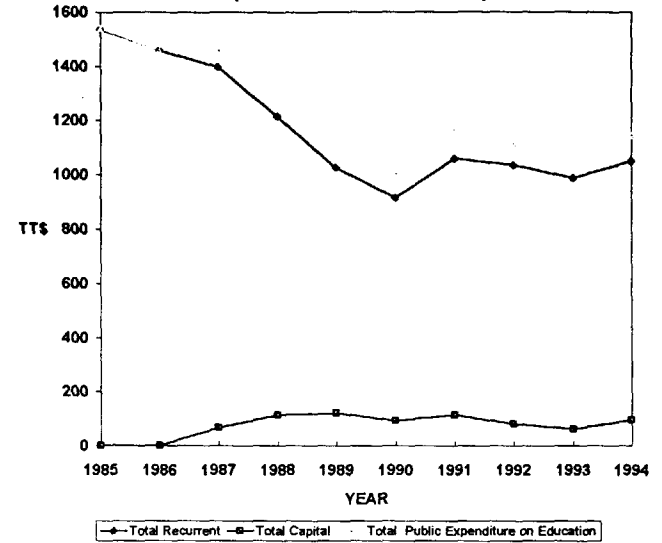
2.11 Between 1985-87 and 1992-94, the total government expenditure on education declined by 26 percent in real terms, less than the 29 percent decline in total government expenditure. Because of the contraction of public spending, government expenditure on education as a share of GDP fell from 5 to 4 percent (Table 4). Figures 9-12 show the 10-year trends in GDP, government revenue and expenditure, and public expenditures on education.

<sup>10</sup>Owing to the large fluctuation of public expenditure on education from year to year, a three-year average is constructed to provide a more reliable indicator.

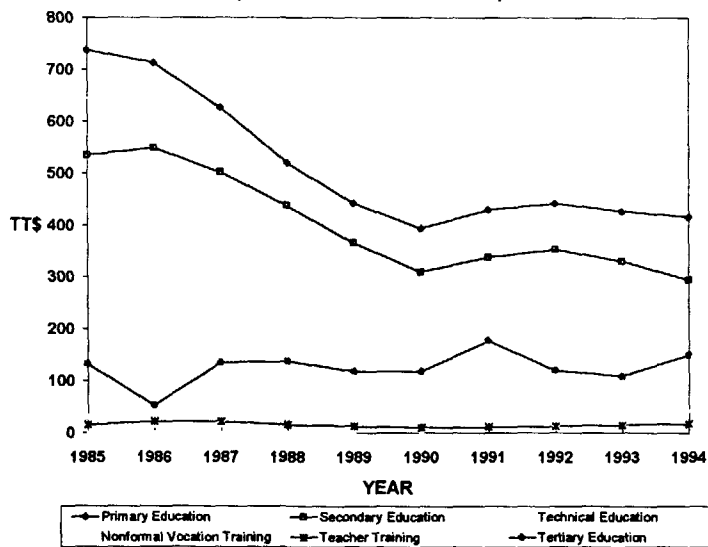
**Fig. 9: GDP**  
**Central Government Revenue & Expenditure (1985 - 1994)**  
 (in hundred million constant 1994 TT\$)



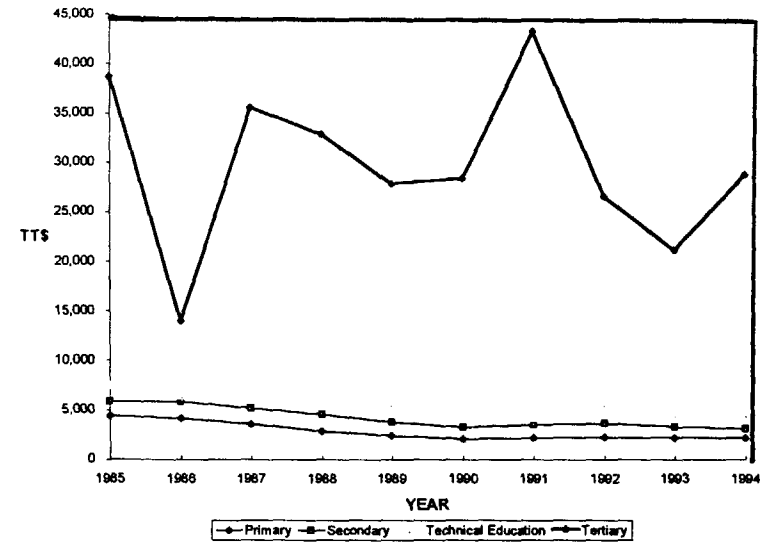
**Fig. 10 Total Public Expenditure on Education by Level (1985-1994)**  
 (in million constant 1994 TT\$)



**Fig. 11 Total Recurrent Public Expenditure on Education by Level (in million constant 19944 TT\$) 1985-94**



**Fig. 12 Per-Student Recurrent Public Expenditure (1985 - 1994)**  
 (In constant 1994 TT\$)



## **(1) Austerity Measures**

2.12 In 1988, the government adopted structural adjustment measures, including the reduction in government spending, increased taxation, privatization of public enterprises, and currency devaluation. As development projects were halted, capital expenditure declined by 70 percent, while recurrent expenditure by 16 percent in real terms between 1985-87 and 1991-93. Salaries and wages were contained by a series of measures, namely, (1) non-implementation of the Tribunal award to the civil service and a freeze on COLA in 1984; (2) non-payment of increments since 1987; (3) a ten percent reduction in salaries in 1989-90; (4) the introduction of a voluntary termination of employment plan to reduce public sector employment; and (5) another freeze on COLA in 1992. Since education is a labor intensive enterprise, this affected morale in the sector significantly.

2.13 Austerity measures specific to the education sector include the following: (1) the introduction in 1988 of a tax on all university students, known as CESS, which is equivalent to 10 percent of the estimated cost to make up for the low tuition fees; (2) the phasing out of book and uniform grants to primary and secondary students in 1989; and (3) reduction of funding for school meals from TT\$15.9 million in 1987 to zero in 1988. The CESS was eventually replaced by a fee increase to recover 15 percent of the recurrent cost of UWI. Tuition fees also varied by discipline, thereby taking into account both the cost and the expected economic returns to graduates from a given discipline. A book grant to needy students introduced in 1991 was terminated in 1994. School lunch payments were reintroduced in 1989 and grew rapidly since then.

## **(2) Changes in composition of public expenditure on education**

2.14 The major categories of recurrent spending on education are personnel cost, goods and services, minor equipment, and transfers and subsidies (Table 5). Of all these items, recurrent expenditures accounted for 95 to 98 percent of the total education budget, while capital expenditure accounted for the remainder of the share (Appendix 5). The increase of capital expenditure in recent years is largely attributable to the provision of government financing for external borrowing from the IDB and from the World Bank for the Youth Training and Employment Partnership Program.

2.15 Of the recurrent expenditure, minor equipment, which accounted for the smallest share of the education expenditure (0.1-0.2 percent), had the largest cut in spending (65 percent). However, maintenance and repair of minor equipment is what often ensure that things are in operation. Assisted schools which have been successful in raising funds to supplement their revenue often spend on this item.

2.16 Goods and services also accounted for a relatively small share, but it is the only item, except capital expenditure, that increased over the years. Further examination of the 10-year trend in Appendix 3A and 3B found that the increase is attributable to government financing for projects financed by such agencies as the World Bank and the IDB.

2.17 Transfers and subsidies, which included salaries and benefits at the tertiary level, but not at the primary and secondary levels, accounted for about 20-21 percent of the total expenditure and suffered only minor reduction. Examination of the 10-year trend in Appendix 3A and 3B found that since tertiary education budget had been transferred to the Prime Minister's Office in 1991, appropriation to this level had also increased. MOH allocation to the Medical Complex, and massive transfer of budget from other

Ministries to vocational and technical education under MOE to provide counterpart funds for a World Bank loan for youth training and employment also have contributed to increased spending on this category of expenditure.

Table 5: Changes in the Composition of Public Expenditure on Education, 1985-94  
(3-year Average in Million Constant 1994 TT\$)

	1985-87	% of Total	1992-94	% of Total	% Change Between Earlier & Later Yrs.
Personnel	1131	77%	754	74%	-33%
Goods & Services	42	3%	53	5%	25%
Minor Equipment	3	0%	1	0%	-65%
Transfers & Subsidies	287	20%	218	21%	-24%
Total Recurrent Expenditure	1463	100%	1025	100%	-30%

Sources: MOF Detailed of Estimates of Recurrent Expenditure and Bank mission estimates.

2.18 Personnel cost is the largest component, accounting for 77 percent of total public expenditure on education in 1985-87. The personnel cost would have been higher than what is shown in Table 5 if there is a breakdown by type of expenditure in transfers and subsidies to tertiary education to show the salary component in university expenditure. However, since only a lump sum amount is published, this leads to a rather high percentage share of transfers and subsidies but lower share in personnel cost.

2.19 In addition, pension and gratuities are neither included in MOE budget, nor in all but one tables in this report. The reason is that the pension for teachers, administrative and support personnel in the education sector is not disaggregated from the pension of other civil servants, although the pension and gratuities of teachers of assisted secondary schools form a separate category. The unavailability of disaggregate information on the pension and gratuities in the education sector as a whole or by level of education thus results in lower personnel share in public expenditure on education. Because of this, the total public spending on education reported in this review is lower than the actual amount spent. An estimate of public spending on total personnel cost is presented in a footnote for comparison.<sup>11</sup>

2.20 On the face of it, the austerity measures outlined above had the immediate effects of reducing the personnel share of total education expenditure from 77 to 74 percent in 1991-93 (Table 5). As can be seen in the 10-year trend in Appendix 3A, the personnel cost in primary and secondary school expenditure dipped to the lowest level in 1989 and 1990 soon after the implementation of the austerity measures. However, personnel expenditures gradually rose again in subsequent years, partly in the form of payment of arrears and owed COLA and increments. In 1994, there were 16,000 permanent established positions in the education

<sup>11</sup> Although secondary school teachers' salaries and pension are higher on the average than the primary school teacher's, in the absence of information about the number of retirees and their package at various education levels, the pension accrued by teachers in assisted secondary schools is used as a basis for estimation. There were about 908 such teachers in the work force in 1991. Those who left this group of teachers were paid an average of TT\$4.5 million per year in 1991-93. This leads to an estimate of TT\$4,919 in pension to a retiree for every teacher who still remained in the work force. Using this as a basis, the total pension for those who left the 16,000 permanent positions in the education sector is estimated to be TT\$78.7 million. This amount, plus TT\$4.5 million paid to retired assisted secondary school teachers, represented an additional personnel expenditure of TT\$83.2 million in 1991-93, or an additional 8.8 percent to the total expenditure.

sector in T&T, covering both government and assisted primary, secondary, vocational and technical schools. Of these positions, about 3,000 are civil and 13,000 are teaching staff. In addition, there are 6,000 temporary positions, bringing the total to 22,000 employees in the education sector.

2.21 As a result of repeated salary freezes in the late 1980s, the government owed its public sector employees TT\$4.4 billion in September, 1994 (*The Public Servant*, Special Issue No. 1, 1994). The government proposes to pay its civil servants TT\$2.48 billion by using bonds encashable in five tranches between 1997 and 2001. The Trinidad and Tobago Unified Teachers' Association (TTUTA) accepted the government's proposals to buy out TT\$150 million outstanding increments owed to 12,000 teachers, averaging about TT\$26,000 per teacher (*Trinidad Guardian*, October 20, 1994). Thus, the personnel cost in the future can be expected to be higher than before, everything being equal. In summary, although personnel cost appeared to have declined by 33 percent between the mid-1980s and the early 1990s, the actual decline is likely to be less steep; structural adjustment measures of freezing salaries succeeded only in deferring payment of salaries, not in substantial reduction of the personnel cost.

### **(3) Changes in intra-sectoral allocation**

2.22 Comparison of allocation to various subsectors found that in 1985-87, primary education claimed 47 percent and secondary education 36 percent of the total recurrent education expenditure, and tertiary education 7 percent (Table 6 and Appendix 5 for the 10-year trend). If spending on post-secondary Teachers' College is added to higher education, the tertiary level claimed about 10 percent of the public education resources. This translates into public spending of 2.3 percent of the GDP on primary education and 1.8 percent on secondary education, which compare favorably with both East Asia and Latin America and the Caribbean Region.<sup>12</sup>

2.23 However, since the economic downturn, the magnitude of decline in public education expenditure varied by level of education. In 1992-94, while total recurrent education expenditure was reduced by 30 percent, primary school expenditure declined by 38 percent, and secondary education spending by 38 percent. However, public spending on tertiary education rose by 19 percent. This translates into a reduced share of public expenditure for primary and secondary education to 42 and 32 percent, respectively, but an increase in higher education expenditure to 12 percent of the total recurrent education spending, or 15 percent if teacher training and post-secondary vocational and technical education are added. In terms of the share of the GDP, primary education fell to 1.5 percent, and secondary education to 1.2 percent, while tertiary education rose to 0.6 percent when teachers' education and technical education are included (Table 6).

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<sup>12</sup>In 1985, Hong Kong spent 1.9 percent of GNP on basic education, Indonesia 2 percent, South Korea 2.5 percent, and Thailand 2.6 percent, in contrast to Venezuela's 1.3 percent. See World Bank, 1993, Table 5.4, p. 199.

Table 6: Changes in Recurrent Public Expenditure on Education, 1985-94  
(3-year Average in Million Constant 1994 TT\$)

	1985-87	% of Total	1992-94	% of Total	% Change Between Earlier & Later Years
Administration & Services	90	6%	89	9%	-1%
Pre-School	0	0%	2	0%	N/A
Primary	692	47%	428	42%	-38%
Secondary	527	36%	326	32%	-38%
Technical Education	28	2%	19	2%	-33%
Vocational Training	0	0%	21	2%	N/A
Teacher's College	19	1%	15	1%	-21%
Tertiary	107	7%	126	12%	19%
<b>Total Recurrent</b>	<b>1463</b>	<b>100%</b>	<b>1025</b>	<b>100%</b>	<b>-30%</b>
<b>As Percentage of GDP</b>					
Administration & Services	0.3%		0.3%		
Pre-School	0.0%		0.0%		
Primary	2.3%		1.5%		
Secondary	1.8%		1.1%		
Technical Education	0.1%		0.1%		
Vocational Training (Nonformal)	0.0%		0.1%		
Teacher's College	0.1%		0.1%		
Tertiary	0.4%		0.4%		

Sources: MOF Detailed of Estimates of Recurrent Expenditure; Estimates: Development Programs.

2.24 As enrollment in primary education increased by 13 percent between 1985-87 and 1992-94, the magnitude of decline in recurrent public spending per primary school student was even more drastic, falling by 45 percent (Table 7). In secondary education, because the enrollment growth rate over the period was a modest 3 percent, the reduction in per-student spending in secondary education was 40 percent. Enrollment in technical education decreased by a modest 2 percent, but per student spending fell by 32 percent (Table 7). In tertiary education, in spite of the fact that enrollment increased by 36 percent over the same period, per-student spending on tertiary education declined by a modest 13 percent in real terms. Although data was not available for earlier years for teachers' education, the unit cost of Teachers' Colleges was very high, close to the level of tertiary education.

Table 7: Changes in Enrollment and Annual Per-student Recurrent Public Expenditure, 1985-94

	<u>3-Year Average</u>		% Change Between Earlier & Later Yrs.
	1985-87	1992-94	
<u>A: Changes in Enrollment</u>			
Primary	172,401	194,998	13%
Secondary	94,398	97,287	3%
Technical Education	4,068	3,991	-2%
Vocational Training	—	2,704	
Teachers' Colleges	—	719	
Tertiary	3,653	4,972	36%
<u>B. Changes in Annual Per-Student Recurrent Expenditure (In Constant 1994 TT\$)</u>			
Primary	4,019	2,193	-45%
Secondary	5,589	3,346	-40%
Technical Institutes	6,878	4,680	-32%
Vocational Training	—	15,534	
Teachers' Colleges	—	24,318	-13%
Tertiary	29,408	25,482	-13%

Sources: MOF Detailed of Estimates of Recurrent Expenditure; Estimates: Development Programs.

2.25 In 1992-94, per-student recurrent public expenditure was 8 percent of the GDP per capita for primary education, 12 percent for secondary education, 16 percent for vocational and technical education, 87 percent for teacher education, and 91 percent for university education. This ratio indicates that public subsidization was lowest in primary education which may be the only level the poor will participate in, but heaviest in university, where upper and middle class children are overwhelmingly represented. In comparison with the ratio of 1985-87, public spending in the early 1990s has become even more regressive, as it declined by 43 percent in primary education, 37 percent in secondary education, but only by 9 percent in higher education (Table 8).

Table 8: Changes in Recurrent Per-student Expenditure as a Percentage of Per Capita GDP, 1985-94

	<u>3-year Average</u>		% Change between Earlier & Later Years
	1985-87	1992-94	
Primary	13.6%	7.8%	-42.7%
Secondary	18.9%	11.9%	-37.1%
Technical Education	23.3%	16.6%	-28.6%
Teacher Training	-	86.5%	-
Tertiary	99.6%	90.6%	-9.0%

Sources: MOF Detailed of Estimates of Recurrent Expenditure; Estimates: Development Programs.

#### **(4) Fluctuation in public spending on education.**

2.26 An examination of the ten-year trend found that public funding has been erratic and fluctuated widely from year to year, depending on the availability of funds (Appendices 3A and 3B). Capital expenditure on education fluctuated extremely from 0 percent in 1986 to 9 percent in 1989, with tremendous variations from year to year. This indicates the sporadic nature of the availability of funds. When tertiary education absorbed 64 percent of the capital expenditure in 1987, the allocation to primary education was zero. Similarly, when 53 percent of the capital expenditure was spent on primary education in 1994, spending on tertiary education was only 1.2 percent, and that on secondary education was reduced to 11 percent (Appendix 4).

2.27 The recurrent expenditure for general administration and educational services, which include the civil establishment in MOE and the Learning Resource Center, varied between 6 and 11 percent of the total recurrent expenditure between 1985 and 1994<sup>13</sup>. Primary education spending varied from the high level of 49 percent in 1986 to the low level of 41 percent in 1994. Secondary education expenditure fluctuated between 28 and 38 percent, while higher education varied from 4 percent in the low extreme in 1986 to 17 percent in the high extreme in 1991 (Appendix 4).

2.28 The trends between 1985 and 1994 show obvious trade-offs in intra-sectoral allocation. For example, when allocation to higher education was at its height at 17 percent in 1991, the allocation to primary education was at its low point at 41 percent. Another example is in 1994, when the allocation to administration and educational services rose to 11 percent in order to fund the Learning Resource Center, secondary education expenditure was cut to the all time low of 28 percent (Appendix 4).

2.29 Within each sub-sector, personnel expenditure accounted for the largest share of recurrent expenditure (Appendix 3B). Moreover, personnel cost in general administration, primary education, and vocational and technical education has fluctuated greatly with the lowest points around 1989 and 1991 due to the 10 percent pay cut and the implementation of the voluntary retirement plan. The latter would have a bearing on pension and gratuities in subsequent years. Pension and gratuities of assisted school teachers, which were categorized separately in the government's annual estimates of recurrent expenditure, have grown from 0.8 percent of secondary education expenditure in 1988 to 1.5 percent in 1994. The personnel cost at other levels of education has also increased over time (Appendix 3B).

2.30 Allocation for the purchase of goods and services, which include instructional materials, training, examination, traveling, repair and maintenance, accounted for less than 1 percent in primary education and less than 3 percent in secondary education. From this pattern of allocation, it is clear that spending on educational inputs, namely, books and library, and in-service training, has been negligible.

2.31 Allocation to minor equipment was even more paltry, less than 1 percent in primary and secondary education, respectively. Grants to assisted primary schools for the purchase of goods and services, minor equipment, and building accounted for about 3 percent of expenditure at that level, while grants to assisted secondary schools accounted for 3-4 percent of the expenditure at that level. Since transfers to assisted schools remained small, schools wishing to improve their instructional facilities had to raise funds themselves.

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<sup>13</sup> The dramatic increase to 14 percent in the 1994 estimate is attributable to the operation of the newly established Learning Resource Center.



The greatest variation in expenditure comes from the capacity of schools which can use its parents and alumni network to raise funds well above that of public subsidies.

2.32 Transfers and subsidies to households have taken the form of book and uniform grants, and school meals in primary schools. Before 1991, book and uniform grants were not targeted to needy children, but were available on demand. During periods of austerity, these grants were cut from 7 and 8 percent in primary and secondary education, respectively, in 1987 to zero in 1989. After 1991, needs-based book grants were made available to primary and secondary students. However, because the funds could not cover all the needy students, they were distributed to schools instead to purchase books for use by students. In 1994, book grants were completely discontinued.

2.33 The largest and expanding subsidies were free lunch in primary schools, was expanded from three meals to five meals per week, covering about a quarter of primary school students by 1994. Spending on school meals increased from 0 in 1985 to 13 percent of recurrent primary education expenditure in 1994. School lunch, which cost about \$5 per meal per day in 1994, is an important means of income transfer, and keeps the attendance rate high. However, as this spending is on the rise, it crowds out other educationally effective inputs such as book grants to poor children.

2.34 In summary, the trend between 1985 and 1994 shows that decline in public investment in education during economic recession have severely constrained the ability of the system to cope with the challenges. Equally worrying is the trend of increasing regressivity in public spending on education, with per-student spending on primary education suffering the most drastic cut while that on higher education saw substantial increase. The following Chapter discusses the likely impact of the severe decline in per-student spending in the primary and secondary levels, and the uneven resource endowment of various types of school on educational attainment and learning outcomes.

### **3. System Performance Indicators for the Rich and Poor**

3.1 By some indicators, Trinidad and Tobago's education system compares favorably with those in Latin American and Caribbean.<sup>14</sup> For example, girls' enrollment in both primary and secondary schools is slightly more than 50 percent of the total (MOE statistics). Girls also perform better than boys at all levels (Jules, 1994 and Appendix 13). Repetition rates in primary schools are less than 2 percent on average, except in Standard 5, where students voluntarily repeat in order to have a second chance to be placed in a secondary school. Dropout rates are less than 0.5 percent on average, again except in Standard 5. For a cohort of 1,000 students who enter Standard 1, on average, 96 percent of boys, and 97 percent of girls can be expected to reach Standard 5 (Appendix 14). However, these indicators mask the problems in equity and quality.

#### **A. Enrollment Rates Attendance and Their Variation.**

3.2 Inequity in education is reflected in unequal access to different levels of education, as well as to schools of different quality. Since education is positively associated with productivity and earnings, variability in educational attainment and achievement will lead to differentials in employment prospects and future life-time earnings, thereby contributing to perpetuating the cycle of poverty. Analysis of the SLC data collected in 1992 found a large degree of variation in enrollment by expenditure quintile. In the 2-4 age group, only 21 percent of children in the first (lowest) expenditure quintile attended school, compared with 51 percent of children in the fifth (highest) expenditure quintile (Table 9A). Active, high quality early childhood education programs have demonstrated to impact on the development of initiative and school readiness to the extent that it can mitigate impoverished home environment and has long-term positive effects on school achievement, social behavior, employment, and property ownership.<sup>15</sup> That a significantly smaller proportion of children from low-income homes enroll in pre-school means that a majority of them are less prepared for primary schooling.

3.3 Among the 5-11 age cohort, the enrollment rate was 93 percent among the lowest quintile, compared with 99 percent of highest quintiles (Table 9A). This generally high level of enrollment is consistent with the policy of universal primary education. However, the lower enrollment rates among lower quintiles is indicative of the problem of inequity. Furthermore, the distribution of children from different quintiles in different types of schools is uneven. While 87 percent of children from the lowest quintile attended government and assisted primary schools, only 78 percent of the top quintile attended these schools and 16 percent of them went to private schools (Table 9B).

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<sup>14</sup>Overall in Latin America and the Caribbean Region, 42 percent of first graders repeat their grade, and 29 percent of all primary school students repeat their grade each year. See Wolff et. al. 1994, p. 20.

<sup>15</sup>A longitudinal study of participants in Perry Pre-School in Michigan, USA, found that adults who were born in poverty but attended a high-quality, active learning preschool program at ages 3 and 4 have higher achievement scores at 14 and 19 than nonparticipants, greater probability to finish high school, half as many criminal arrests, higher earnings, greater property wealth, and greater commitment to marriage. Over pre-school participants' lifetimes, the public is receiving an estimated \$7.16 for every dollar invested. See Schweinhard, et. al. 1993.

Table 9: School Enrolled by Age, Education Level, and Expenditure Quintile

	<u>Per Capita Expenditure Quintile</u>					Total	# of Persons in the Sample
	1 (Poorest)	2	3	4	5 (Wealthiest)		
<u>9A: Percentage Enrolled by Age Group</u>							
<b>Age Groups</b>							
2-4	21	27	43	37	51	33	363
5-11	93	95	98	99	99	96	1,111
12-15	81	87	92	95	97	89	490
16-19	28	34	53	53	67	45	474
<u>9B: Percentage Enrolled by Age Group by Education Level</u>							
<i>Ages 2-4</i>							
Pre-school	18	25	38	35	47	30	
Primary	3	1	5	2	4	3	
<i>Ages 5-11</i>							
Pre-school	3	4	5	7	3	4	
Primary	89	88	93	90	94	90	
Govt. & assisted	88	87	90	85	78	87	
Private	1	1	3	5	16	4	
Junior Secondary	0	1	0	2	0	1	
<i>Ages 12-15</i>							
Primary	20	24	10	13	19	19	
Govt. & Assisted	20	23	19	12	17	18	
Private	0	1	1	1	2	1	
Junior Secondary	37	27	33	38	20	32	
Vocational	3	3	1	1	0	2	
Upper Secondary	21	31	38	43	58	35	
Govt. & Assisted	13	11	24	26	46	21	
Private	0	1	2	2	5	2	
Senior Comprehensive	5	16	5	10	5	9	
Composite	3	3	6	5	2	4	
Other	0	3	0	0	0	0	
<i>Ages 16-19</i>							
Junior Secondary	0	0	0	0	1	0	
Vocational	4	7	2	4	3	4	
Youth camps, etc.	0	1	0	0	0	0	
Senior Secondary	24	23	42	36	51	34	
Govt. & Assisted	4	7	20	12	19	12	
Private	0	1	4	4	8	3	
Senior Compr.	19	11	12	16	21	16	
Composite	1	2	1	2	0	1	
Technical Institutes	0	1	1	3	2		
University	0	0	0	1	4	1	
Other	0	0	2	5	1	1	

\_Source: SLC data, 1992.

3.4 Among the 12-15 age cohort, enrollment of children of the lowest quintiles dropped to 81 percent, but 97 percent of children of the highest quintile still attended school (Table 9A). Students of the lowest quintiles were heavily represented in 3-year junior secondary schools (37 percent) and vocational programs (3 percent), compared with only 20 percent of those in the top quintile in junior secondary schools and zero in vocational programs (Table 9A). By contrast, children of the highest quintile were concentrated in 5- or 7-year schools (57 percent in total), of which 46 percent were in traditional government and assisted schools, and 5 percent in private secondary schools. In comparison, only 21 percent of children in the lowest quintile attended senior secondary schools, of whom only 13 percent attended traditional government and assisted schools, 5 percent in senior comprehensive, 3 percent in composite schools, and zero in private schools (Table 9B).

3.5 The findings from a recent study on secondary schools (Jules, 1994) reinforces the messages coming from the SLC survey. The share of students in the total student population from lower income group was 31 percent in Form 1 and 26 percent in Form 5, and 13 and 11 percent in Lower 6 and Upper 6, respectively. By contrast, the share of students from the upper income group was 6 percent in Form 1, 20 percent and 18 percent in Lower 6 and Upper 6, respectively (Table 10).

3.6 Among the 16-19 age group, only 28 percent of the lowest quintile versus 67 percent of the highest quintile were still in school. Students from the third quintile were the major users of technical institutes, but not those from the lowest quintile. University was clearly a venue for the wealthy: enrollment by students from the fifth quintile was four times as much as that by youths in the fourth quintile, compared with zero enrollment of youths in the first to the third quintals (Table 9B).

Table 10: Secondary School Enrollment by Grade and Income Group (Percentage)

	Upper Level	Middle Level	Lower Level	Others <sup>16</sup>	% of Total	Number of Students
Form 1	6	49	31	15	100	17,157
Form 2	6	48	30	15	100	17,008
Form 3	6	50	29	14	100	16,359
Form 4	7	51	27	15	100	14,123
Form 5	8	51	26	15	100	14,263
Lower 6	20	60	13	7	100	2,261
Upper 6	18	61	11	10	100	2,143

Source: Jules, 1994, Table 6. p. 37

Note: The percentage shares are rounded.

3.7 Two major factors lie behind the difference in enrollment by expenditure quintile: (i) household ability to pay the direct and indirect private cost of education, which, in turn, is a function of family characteristics such as household income and parental education; and (ii) differential access to good schools which affect the ability of students to progress to the next level. On the cost side, even though tuition is free of charge, households still bear the direct cost of transportation, lunch, books, and uniforms, and the indirect or the opportunity cost of foregone earnings by sending a child to school rather than to work.

<sup>16</sup>The category, other, includes housepersons (homemakers), not applicable, and no response.

3.8 Analysis of SLC data found that the educational attainment of heads of household differed enormously by expenditure quintile. For example, only 16 percent of household heads of the poorest 20 percent had secondary education, and less than 1 percent of them had higher education, compared with 53 percent of heads of the wealthiest 20 percent who had secondary education, and 16 percent had higher education (Table 11). As education has a strong correlation with earnings and inter-generational mobility, this explains to a large extent why attendance of children of the first two quintals are lower that of children of upper quintiles even at the compulsory education level.

Table 11: Level of Educational Attainment by Heads of Household by Per Capita Expenditure Quintile

	Per Capita Expenditure Quintile					Median Per Capita Monthly Expenditure (TT\$)
	1	2	3	4	5	
Primary	84	76	73	56	32	631
Secondary	16	23	27	40	53	1,136
Tertiary	0.8	0.7	0.4	4.3	16	2,616

Source: SLC data, 1992.

3.9 Examination of the mean days of attendance found that the differences between students from various quintiles in pre-school, primary, and senior secondary education to be minimal (Table 12A). The high school attendance has been a tradition in T&T, except in the rainy seasons in rural area.

3.10 However, the reasons for non-attendance varied by expenditure quintile. Among primary school students, 23 percent in the first quintile cited financial problems, and 17 percent cited transportation problems as the main reasons of non-attendance, whereas none of these factors affected students in the upper quintile (Table 12B). In the junior secondary level, there is much variation in mean days of attendance, indicating that adolescence with an awakened sense of independence and uncertainty around the school-to-work transition tend to slack off in attendance (Table 12A). By contrast, attendance rate of those who have made it to senior secondary tend to be higher.

3.11 This hypothesis is supported by the reasons cited for non-attendance by secondary school students. 17 percent of students in the second quintile considered schooling not worth their while, and 4 percent of students in the fourth quintile were affected by pregnancy. That it was not a problem for the lower quintile could be due to the fact that unmotivated or pregnant teenagers from poor families might have dropped out rather than staying in school (Table 12B). More second quintile students (22 percent) than first quintile students (15 percent) cited financial problems. Again, this might be due to the fact that those first quintile students who really could not afford to go to secondary schools have dropped out, while those in the second quintile stayed enrolled, but recognized the increasing opportunity cost of schooling.

## **B. Out-of-Pocket Costs and Their Incidence.**

3.12 The means of transportation varied by quintile (Table 13). Transportation was a problem for low income children as 64 percent of students in the first quintile walked to school. By contrast, of students in the fifth quintile, only 21 percent walked to school, 13 percent who took maxi cabs, 19 percent who went by taxi, and 20 percent who went by private cars. This affected the rural areas more than the urban areas, because 63

percent of students in the first quintile in the rural areas walked to school. The breakdown of reasons for non-attendance by urban and rural areas confirmed that transportation is more of a problem for students in the countryside (Appendix 18). When such a large number of poor children have to walk to school, they have little choice but to go to the nearest school, irrespective of the quality of instruction. By contrast, wealthy students have a wider range of option. When schools in poorer neighborhood and rural areas are of poorer quality, these children have less opportunities to become high achievers.

Table 12: Mean Days of Attendance and Reasons for Non-attendance

	Per Capita Expenditure quintiles					Total	
	1	2	3	4	5		
<u>12A: Mean days of attendance per week</u>							
Pre-school		4.4	4.5	4.2	4.6	4.7	4.5
Primary		4.4	4.6	4.6	4.7	4.7	4.6
Junior Secondary	3.9	4.5	4.7	4.5	2.9	4.3	
Senior Secondary		4.3	4.4	4.5	4.5	4.6	4.5
<u>12B: Reasons for Non-attendance (Percentage)</u>							
<u>Primary School</u>							
Illness		14	17	22	28	15	18
Finance problem		23	3	11	3	0	11
Transport problem		17	0	0	0	0	6
Home duty		0	0	0	3	0	0
Not worth		4	0	2	3	10	3
Holiday		22	34	26	35	25	28
Baby sitting		0	2	0	0	0	0
Other		21	41	39	28	50	33
No answer		0	3	0	0	0	1
Absentees		27	24	20	15	14	1
Total Students		100	100	100	100	100	100
N=		292	248	231	194	143	1108
<u>Secondary School</u>							
Illness		12	6	10	26	7	13
Finance problem		15	22	0	0	0	8
Transport		3	0	0	0	0	1
Working		0	0	0	4	0	1
Not worth		0	17	5	7	0	5
Holiday		33	11	29	30	20	26
Pregnant		0	0	0	4	0	1
Other		37	44	57	30	73	45
Absentees	27	16	16	21	16	20	
Total		100	100	100	100	100	100
N=		123	113	128	127	96	587

Source: SLC data, 1992./Note: The percentage is rounded.

3.13 Travel accounted for a very substantial cost when the daily expenses are multiplied by 22 days in a month (Table 14). Moreover, this only represents the travel cost of one child, among other school age children in the family. Another daily recurrent cost is lunch. Families might be able to get around it by giving lunch to children to carry to school. As a result, the amount of money households spent on lunch was not as high as that on transportation (Table 14). These daily costs translate into an annual cost of TT\$292 for

primary education and over TT\$1,000 for junior and senior secondary education, respectively, which is very substantial, given that the poverty line is TT\$2,320 per year in 1992.

Table 13: Means of Transportation (Percentage)

	Per Capita Expenditure Quintile					Total	Number of Respondents
	1	2	3	4	5		
Walking	64	50	40	35	21	44	798
Cycling	0	0	1	0	0	0	5
Maix Cab	9	16	15	13	11	13	234
Taxi	17	15	20	25	21	19	353
Bus	3	5	4	1	2	3	52
Private Car	7	13	20	25	44	20	369
Others	0	1	1	0	0	0	6
No Answer	0	0	0	0	0	0	1
Total	100	100	100	100	100	100	
N=	424	380	383	357	274		1,818

Source: SLC data, 1992.

Table 14: Travel and Lunch Cost by Education Level (TT\$)

	Per Capita Expenditure Quintile				
	1	2	3	4	5
<b>14A. Mean Daily Travel and Lunch Cost</b>					
Pre-school					
Travel	1.0	0.4	0.9	1.1	1.2
Lunch	0.7	0.5	0.6	1.3	.5
Primary					
Travel	0.7	0.8	1.2	0.9	1.1
Lunch	0.8	0.5	0.8	1.1	0.9
Junior Secondary					
Travel	3.2	4.6	3.5	4.3	3.3
Lunch	1.7	1.3	2.5	2.3	2.7
Senior Secondary					
Travel	4.1	5.7	4.5	4.2	4.0
Lunch	1.5	2.2	2.3	2.3	3.2
<b>14B. Annual Travel and Lunch Cost Based on 195 School Days</b>					
Pre-school	332	176	293	486	332
Primary	292	254	390	390	390
Junior Secondary	1,062	1,151	1,170	1,287	1,170
Senior Secondary	1,092	1,541	1,326	1,268	1,404
Mean annual per capita expenditure	1,612	2,994	4,416	6,595	13,296

Source: SLC data, 1992.

3.14 Textbooks have been proven to be a very important educational input, with direct positive impact on achievement. However, 31 percent of primary school students in first quintile did not have textbooks, compared with only 4 percent among the fifth quintile (Table 15A). At the secondary level, the percentage was 33 and 7 percent, respectively, for these two quintiles. The overwhelming reasons for nonavailability is that textbooks are too expensive (Table 15B). Rural students were more affected than urban students (Appendix 19).

Table 15. Textbook Availability and Reasons for Non-availability (Percentage)

	Per Capita Expenditure Quintiles					
	1	2	3	4	5	
<i>15A. Textbook Availability</i>						
<u>Primary School Students</u>						
Has, Exclusive	68	83	92	96	95	
Has, Shared	1	3	0	1	1	
None	31	14	8	4	4	
Total	100	100	100	100	100	
N=	291	247	231	194	143	
<u>Secondary School Students</u>						
Has, Exclusive	66	71	94	82	90	
Has, Shared	1	2	0	3	2	
None	33	27	6	14	7	
Total	100	100	100	100	100	
N=	104	99	115	118	84	
<i>15B. Reasons for Non-availability</i>						
<u>Primary School Students</u>						
Books unavailable	4	6	6	0	0	5
Too expensive	90	91	61	100	60	86
Lost	0	3	11	0	0	2
Will buy	4	0	0	0	40	4
Other	0	0	22	0	0	3
No answer	1	0	0	0	0	1
Total	100	100	100	100	100	100
<u>Secondary School Students</u>						
Books unavailable	0	0	14	24	0	5
Too expensive	100	85	86	71	83	88
Library	0	4	0	6	0	2
Other	0	4	0	0	0	1
No answer	0	7	0	0	17	3
Total	100	100	100	100	100	100

Source: SLC data./ Note: The percentage is rounded.

3.15 In summary, the above findings confirm that income level appears to affect enrollment and educational attainment. Poor families are less likely to be able to afford pre-school for their children, which, in turn, affects children's school readiness. When the children reach compulsory education age, the poor have little option to send their children outside the local school catchment areas; rather they must accept whatever quality the nearby school can provide. They are less likely to be able to afford textbooks for their children, who thus suffer a distinct disadvantage in competition with students from better off families. As a result, children from lower income families are less likely to perform well in examination, and less likely to be placed in secondary school. Even when they are placed, they are more likely to be placed in junior secondary schools than 5-year schools.



### C. Achievement Results.

3.16 The above findings raise the questions: how are students from different family income levels tracked in the school system, and are test scores correlated with family income and school types? Table 17 shows that in the CEE, 44 and 55 percent of students in government primary schools scored below the minimal acceptable levels in mathematics and English, respectively, compared with 37 and 49 percent of students in assisted primary schools, and 12 and 13 percent in private primary schools. It is clear that students in government schools, on average, performed the worst, and those in private schools, the best. Since government schools tend to cater for poorer students, and since students are selected to different types of secondary schools according to their CEE scores, poor students who attend government primary school have fewer opportunity for post-compulsory education or are tracked to secondary schools of the last choice.

Table 16: Percentage of Primary School Students Scoring Below the Minimum Acceptable Levels in the Common Entrance Examination by School Type, 1994

CEE Subjects	Government Schools	Assisted Schools	Private Schools
Mathematics	44	37	13
English	55	49	12
Essay	28	24	4

Source: Ministry of Education

3.17 Although the absence of information on test scores in SLC data does not permit a breakdown of achievement by expenditure quintile, the recent study on secondary schools found a clear pattern of tracking of students from different income level into different school types (Jules, 1994). Table 17 shows that students in junior secondary schools, senior comprehensive, and composite schools have the low mean CEE scores at the point of entrance to secondary education, whereas those in 7-year traditional schools have the highest scores. Students from lower income families are concentrated in junior secondary, senior comprehensive, and composite schools. By contrast, students from upper and middle income families have the highest concentration in 7-year traditional schools, 5-year traditional schools, and Sixth Form Colleges, far above their share in the total student population in secondary schools.

Table 17: Mean CEE Score for Entrance to Secondary Schools by School Type and Enrollment in Secondary Schools by School Type and Family Income Level

School Type	Mean CEE Score (out of 100)	Number of Students	Upper Income (%)	Middle Income (%)	Lower Income (%)	Others (%)	Number of Students
Junior Secondary							
A.M. shift	54	13,554	2	43	37	19	13,684
P.M. Shift	53	12,645	2	42	36	20	12,866
Whole Day	60	4,573	4	48	37	10	4,624
Sr. Comprehensive	55	13,254	3	49	32	17	15,991
Composite	57	7,546	2	43	36	19	7,983
5-yr. Traditional	75	9,992	10	62	19	9	10,460
7-yr. Traditional	82	14,193	20	61	11	8	17,423
6th Form College	-	-	14	63	13	10	284
% of Total	-	-	7	50	29	15	83,315

Source: Jules, 1994, p. 36 and 233.

3.18 Although the study does not separate the effects of selection, family background, and school, the linkage among family income, school types, and scores in CEE is obvious. Table 18 shows that the mean scores of students whose parents were unemployed ranged from 52 to 58 between 1988 and 1992, whereas those of students from middle class families were in the range of 63 to 68, and those of students from upper class families were in the range of 76 to 78. In other words, students whose parents were unemployed score at 69 percent of those of students from upper income families.

Table 18: Family Income and Mean CEE Score of intakes into Secondary Schools from Various Years

Income Group	<u>Mean Group Scores</u>				
	1992 intake	1991 intake	1990 intake	1989 intake	1988 intake
No employment	52	57	55	55	58
Low	55	58	59	57	60
Middle	63	67	67	65	68
High	76	78	80	78	78

Source: Jules, 1994, p. 266-268.

3.19 Further breakdown by score quartile shows that students from the upper income group accounted for 66 percent of those at the fourth (top) score quartile, compared with only 11 percent among those whose parents were unemployed. By contrast, students from unemployed households accounted for 39 percent, and those from lower income group for 33 percent of the first (lowest) score quartile (Table 19).

Table 19: Distribution of Mean CEE Examination (Percentage)

Score Quartile	Income Group				No Response
	Upper	Middle	Lower	Unemployed	
1 (lowest)	5	19	33	3	41
2	9	23	31	29	26
3	20	27	25	22	18
4 (highest)	66	31	12	11	15
Number = 75,755					

Source: Jules, 1994, p. 271.

3.20 Have schools been able to compensate for the difference in family income background? Table 20 shows the mean CXC scores at the point of exit of secondary education by school type. It is clear that senior comprehensive schools where most of the lower-income students go to perform the least well among other schools.

Table 20: CXC Examination Pass Rates at Exit of Secondary Education (Form 5), 1988 (Percentage)

School Type	Total	Male	Female
Senior Comprehensive	75	75	78
Govt. Secondary	91	91	91
Assisted Secondary	96	96	99
Private Secondary	90	90	91

Source: Examination Results for Secondary and Tertiary Schools (1986-1988), p. xii.

3.21 In a separate, international study on Reading Literacy in 1990/91 conducted by the International Association for the Evaluation of Educational Achievement (IEA), the findings confirmed the results of domestic tests (Schleicher and Yip, 1993). The study found that not only did T&T's students perform poorly by international comparison, there was also large between-school differences. Trinidad and Tobago's 9-year-olds' mean score was 445, with a standard deviation of 89. This makes T&T students rank third from the bottom among 27 participating countries, compared with the top score of 577 of Finnish students. The intra-class correlation, rho, was 0.32, indicating that 32 percent of the variation in achievement is between the schools, and 68 percent is between students within schools. Often 0.3 is taken as the cut-off point for identifying serious equity problems.

3.22 The 14-year-olds performed slightly better, with a mean score of 478 and a standard deviation of 97, ranking sixth from the bottom among participating countries, compared with the top score of 565 of Finnish students. However, the rho was .58, indicating that 58 percent of the variation in achievement is between the schools, a very serious equity problem indeed. By contrast, the rho in Finland was .02, indicating it does not matter which school a student attends, he/she would have learn as much.

3.23 There is much variation in achievement between rural and urban students. The same international study found that the mean score difference between urban and rural school for the 9-year-olds were 28, and

that for the 14-year-olds were 41, at the bottom of all participating countries. The differences between the mean scores for students in urban and rural areas is indicated by the effect size. An effect size less than 0.2 can be considered as insignificant, that lying between 0.2 and 0.5 are small, and one larger than .5 as moderate to large. The effect size of the mean score for the 9-year-olds was 0.31, but that of the 14-year-olds increased to 0.42. This indicates that urban and rural differences increased with the level of education.

Table 21: Placement Rates and Mean CEE Scores at Entrance to Secondary School by Education District, 1992

Education Districts	Placement Rates	Mean Group Scores
St. Patrick	85.9	54
Victoria	80.2	62
St. George West	71.5	63
St. George East	61.5	69
Caroni	61.0	67
Nariva/Mayaro	55.9	56
St. Andrew/St. David	47.9	63
Tobago	41.3	63

Source: Jules, 1994, p. 306 & 316.

3.24 As pointed out earlier, transportation was one of the major reasons for non-attendance, and that more rural than urban students have to walk to school. There are further evidence that rural students suffer from an unfavorable placement rates than urban students even if they performed the same, due to the lack of secondary school facilities in rural areas. Table 21 shows that students St. Patrick, Victoria, and St. George West (Port-of-Spain area), the densely populated and economically more developed western part of Trinidad, are much likely to be placed in secondary schools than their counterparts in the eastern part of the country. That the mean CEE group scores in these above mentioned districts are lower than those in other districts indicates that even students who performed less well in these districts they still have a higher probability of being admitted to secondary schools because of the availability of places.

## D. Labor Market Outcomes

3.25 Table 22 illustrates how education affected employment and, by implications, earnings. Bearing in mind that graduates of different levels of education had access to different types of jobs, it is highly probably that those with no education or only some primary education were more likely to be employed in the agricultural sector or were self-employed, thereby showing a relatively low unemployment rate.

3.26 Four points are worthy of note. First, unemployment was virtually negligible for the university graduates. Second, attainment and achievement mattered, as those who passed the highest level of examination at a given cycle had lower unemployment than those who did not. Third, vocational training made little difference in the employment prospects of graduates. Fourth, women's participation in the labor force was lower than men's, although, on average, women performed better in school. This is likely to be due to housekeeping and child care responsibilities.

Table 22: Labor Force by Employment Status, Gender and Educational Attainment, 1990

	<u>Total</u>		<u>Male</u>		<u>Female</u>	
	Unemployed	as a % of	Unemployed	as a % of	Unemployed	as a % of
	Labor Force	Labor Force	Labor Force	Labor Force	Labor Force	Labor Force
No education	5,500	5	3,300	7	2,200	2
Primary < Standard 5	23,700	14	16,400	12	7,300	19
Primary > Standard 4	108,600	18	78,100	15	30,600	25
Primary with training	92,200	22	69,200	19	23,000	30
Secondary passed no subjects in CXC	56,800	26	39,900	24	16,800	31
Secondary passed < 5 CXC subjects	27,500	26	17,000	21	10,500	34
Secondary passed > 5 CXC subjects	23,800	15	11,600	14	12,200	16
Sec. passed no subjects/Training	54,200	25	36,400	23	17,900	29
Sec. passed < 5 subjects/Training	30,200	25	14,700	23	15,400	27
Sec. passed => 5 subjects/Training	22,700	13	9,500	8	13,200	16
Tertiary education no degree	2,100	11	1,000	13	1,100	8
University degree/diploma/certificate	19,900	3	10,900	3	9,000	4
Educated abroad	300	17	300	17	-	-
Not stated	300	50	100	-	100	67
Total	467,700	20	308,400	18	159,200	24

Source: Report on Education Statistics 1990-1991, p. 60-62, which was based on Labor Force Report of 1991.

3.27 To complete the saga of education and poverty, even if poor students enter secondary school, they tend to be tracked to schools that offer shorter hours of instruction and less qualified teachers. As a result, they are less prepared to progress further to the next level. At the same time, their family is less likely to buy textbooks or afford the opportunity cost to keep them in school. Rural students are adversely affected more than urban students due to greater difficulty in organizing transportation, lesser availability of textbooks, and lesser availability of places in secondary schools. When the disadvantaged students leave school, they have

acquired less cognitive skills and are less able to compete in the job market, resulting in higher probability of unemployment. For women, their child care responsibility becomes a barrier to participation in the labor market and to income-generating activities. The cycle of poverty is thus perpetuated.

## 4. Education and the Role of Government

### A. Implications for Future Education Finance

4.1 The review of public expenditure on education has found that the decline in public spending on education during the 1985 and 1993 period has severely constrained the ability of the education sector to meet its current and future challenges. The review of private spending on education has confirmed the uneven resource endowment of various types of schools and the differential ability of families from different income levels to pay for their children's education. The variations in educational attainment and achievement among students from different income groups indicates that the current level of public investment is inadequate to compensate for the private underinvestment of the poor in their own children's education. Given the relatively small share of the tertiary education in the total public expenditure on education, there is not much scope for reallocation of public resources from the tertiary to primary and secondary levels. These findings point to the urgency of increasing public investment in education in order to train a highly skilled, internationally competitive workforce required in an open economy. The resumption of economic growth in 1994 signals that this is an opportune time for increasing investment in educational reform.

4.2 Specific reform measures, outlined in the Education Policy Paper, which require additional financing include: (i) in-service training of principals and department heads for school-based management, pre-service training of primary school teachers to maintain universal primary education, upgrading of skills of non-graduate secondary teachers, and pedagogical training of graduate secondary teachers, and refresher courses for continuous development of teachers; (ii) increasing remuneration to teachers for improved qualifications; (iii) lowering pupil-to-teacher ratio from 30:1 to 25:1 or 20:1 to improve quality; (iv) paying for places in private secondary schools to equalize the uneven transition rates in different school districts and to accelerate the process of reducing double shifts to single shifts in secondary schools; and (v) building 51 new primary schools to relieve congestion and constructing 49 secondary schools if secondary education is to be expanded to accommodate all children of the relevant age group (Appendix 15). Measures (i)-(iv) aim at improving the quality of education, and have recurrent cost implications. Measure (v) is mostly concerned with quantitative expansion, and have capital cost implications.

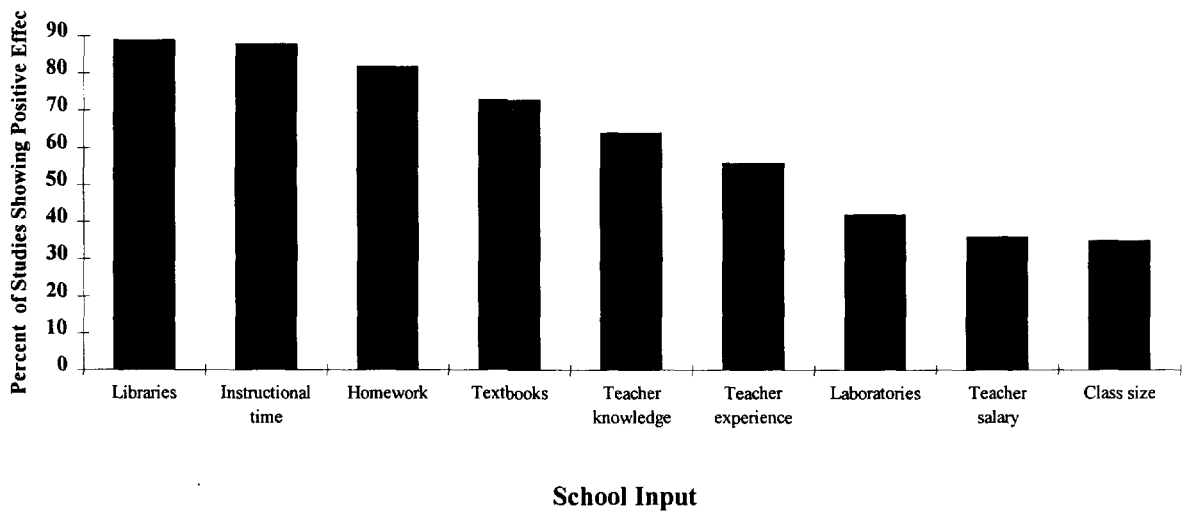
4.3 The estimated additional investment is 12-15 percent annually between 1994-2001, over and above the 1994 level of public spending on education. Given the government's commitment to open the economy and the projected positive growth rate, the additional public investment cannot be considered to be excessive. Quite the contrary, if investment in human capital is not made now, the underdevelopment of human resources in the country would become a constraint to growth in the future. The question is whether the measures identified by the government is the most cost-effective way to improve the quality of education. For example, would de-shifting junior secondary education and reducing pupil-to-teacher ratio lead to higher student achievement than providing textbooks and fitting libraries, and increasing instructional time, given these measures have differential cost implications?

## B. Policy Options for Qualitative Improvement

4.4 **Research findings.** These questions cannot be answered with a high degree of certainty for T&T because cost-effectiveness of a particular intervention is country-specific, and can only be measured by quasi-experimental studies by comparing learning gains of students in experimental and control groups. However, the findings of research on the determinants of achievement based on the data from the IEA Reading Literacy Study has some instructive value. The variables which had a statistical significant relationship with reading achievement were, besides school type, special teachers, class materials, parental cooperation, number of library books per student, teachers' years of post-secondary education, principals' years of experience, percentage of student absenteeism, percentage of full-time female teachers, and teachers' years of teaching experience. A change in one unit of each one of these inputs is associated with a corresponding change in the test scores. The effects of these inputs were in the order of their presentation. In other words, the findings confirmed the importance of all of the policy variables in making a difference in achievement (Wu and Hua).

These findings on T&T are echoed by other research on the determinants of effective learning . Figure 13 provides a summary of these studies.

Figure 13. Determinants of Effective Learning at Primary Level





4.5 Policy instruments to improve learning generally can be grouped into five categories: (i) provision of instructional materials and facilities (such as textbooks, libraries, and laboratories); (ii) increasing the opportunity to learn through increasing instructional time and homework; (iii) provision of teacher training; (iv) increasing teachers' salaries; (v) and reducing class size. As can be seen from Figure 5, providing school libraries is found to be cost-effective in nearly 90 percent of the studies, and increasing instructional time (such as lengthening the school day or providing additional instruction in a certain subject) almost equally effective. Asking students to do homework comes third, and provision of textbooks to children who do not have them comes fourth. Improving teachers' knowledge through training is found to be effective the majority of the cases, and having experience teachers also come close. However, provision of laboratories, increasing teacher salaries, and reducing class size are found to be effective in less than 40 percent of the cases (World Bank, 1995; Lockheed and Verspoor, 1991; Harbison and Hanushek, 1992; Postlethwaite and Ross, 1989; Warwick and Reimers; Tatro, et. al. 1989; Fuller and Clarke, 1994). Policy makers are well advised to take note of these findings before committing resources to interventions which are least cost-effective but have enormous recurrent cost implications.

4.6 **Libraries and Instructional materials.** Given the importance of libraries in facilitating learning, the government is going in the right direction in providing school libraries. Also, given the importance of textbooks to learning, and since over 30 percent of students in the lowest quintile lack books, the elimination of textbook subsidies in 1988 was misguided *Building up the school library and providing book grants are two areas where the government can act effectively.*

4.7 **Instructional time.** T&T now has 195 school days per school year and 897 hours of instruction for primary education (UNESCO, 1994, p. 133-134). While within the norms of neighboring Venezuela,<sup>17</sup> which has 180 days and 900 hours of instruction per school year, they are lower than East Asian countries such as South Korea which has 204 days and 980 hours, and Malaysia, which has 210 days and 1,008 hours. To improve overall achievement of students in the country, it is advisable for the authorities to increase the school days or instructional hours. This will provide more opportunity to learn and to solidify what has been taught. Extending the number of school days or instructional hours would have resource implications. However, the Education Policy Paper recommends increasing teachers' salaries as an incentive for acquiring better qualifications. If this is to be implemented, the reward for longer school days and instruction hours should be included as part of the reward.

4.8 Most primary schools operate on the same duration, but great variation comes in the secondary school. Twenty of 24 junior secondary schools operate on double shifts with reduced school hours. This could be one of the reasons for lower achievement among junior secondary school students. The Education Policy Paper explicitly recognizes the shorter hours offered in junior secondary schools as a problem and talks of deshifting as a remedy. However, the resource implications should be evaluated against the potential gains in academic achievements. Available international evidence does not find any negative impact of double-shift schooling, provided that the hours of instruction have been adequate (Bray, 1992). Given that the education system will be hard press to maintain the current transition rates for secondary education in face of an increase in the 12-to-16 age cohort into the first decade of the 21st century, it is advisable that junior secondary education remains on a double-shift basis but extending the number of school days into the summer vacation or on weekends. In this way, the hours of instruction can be extended for each shift while the required capital investments can be made to construct, extend, and refurbish buildings and facilities to

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<sup>17</sup>Venezuelan students performed poorer than T&T students in the same international study.

accommodate the additional students . Students and teachers can also alternate between morning and afternoon shifts every other year to mitigate the tracking problem whereby the poorest students and teachers have to go to the afternoon shift.

**4.9 Teacher training** is an area that requires special attention if quality of education is to be raised, a need explicitly acknowledged in the Education Policy Paper. The high unit cost of Teachers' College raises the question as to the cost-effectiveness of the current form of pre-service teacher training. Therefore, the challenge is not to provide more pre-service training of the same kind, but to find a cost-effective way to support teachers on their job. Also, the fact that schools which have more teachers with university degrees have higher performance indicate that teachers' knowledge of their subject matter is critical to improve student learning. Thus, pedagogical training must be accompanied by a strong academic training of teachers. How teacher training can be done cost-effectively requires further research and careful thinking. One example is the publication and distribution of teachers' guides that provides concrete support for instruction. Another is to make use of education technology and the mass media to provide information to a mass audience of students, parents, and teachers.

**4.10** The Education Policy Paper also advocates the reduction of *pupil-to-teacher ratio* from 30:1 to 25:1 or 20:1 as a means to improve quality. Ironically, this policy variable, however, has found to be the least cost-effective, and T&T's ratios compare very favorably with other countries. For example, even today in fast-growing South Korea and Taiwan, the ratio is about 40 students to a teacher. In T&T, the apparent correlation between pupil-to-teacher ratio and student achievement might be spurious--better students are tracked into schools which are better resourced. Before measures are taken in this respect, it is advisable to take into account three issues. First, given the rigidity in the redeployment and dismissal of teachers, the magnitude of expanding the teaching force in the government's proposal will have serious long-term implications for the recurrent expenditure on education. Any step in this direction must take the demographic trends into account. Given the projected decline in the under-10 school-age population, even if the current number of teachers remained unchanged, declining enrollment in lower primary education will lead to a decline in the pupil-to-teacher ratio. In the secondary level, given the projected high growth rates the school-age population, the challenge is to keep up the supply of teachers, not to reduce the pupil-to-teacher ratio. Moreover, it is not the pupil-to-teacher ratio per se that will affect quality, but the training and the skill mix of teachers that is important. Consideration should be given on how best to educate, upgrade, and retain mathematics and science teachers at all levels, because these skills are also sought after by other occupations, and yet they are critical to facilitating the improvement of the competitiveness of the workforce.

**4.11 Physical conditions of schools.** A related issue is *overcrowding classroom, and poor acoustic and lighting conditions*. Many primary school building are a structure without permanent partitions for classrooms. Classes are separated by mobile screens. The noise level within each building is extremely high, rendering it difficult for children to listen. Improvement of the physical arrangement of classrooms might lead to effective learning. However, renovation would require high capital spending, and improvement can only be gradual. It is advisable that this factor be taken into account when building new schools.

**4.12 Early Childhood Education.** Not mentioned above in the brief review of cost-effectiveness studies is the value of early childhood education, which has been found to enhance school readiness. To provide a level playing field for the poor, it is desirable to target children in the first quintile for assistance. The use of a compensatory voucher to enable poor households to pursue pre-school education might give poor children a head start. At the same time, infant classes offered in primary schools should be closely scrutinized to ensure that they offer active, high quality kindergarten education. Furthermore, the provision of child care would enable women to work to generate income for their families.

**4.13 Technical and Vocational Education and Training.** The country's increasing investments in formal and nonformal technical and vocational training requires close monitoring as to the labor market outcomes. If the outcomes do not meet with the expectation, it is advisable to explore alternatives, such as strengthening the cognitive skills (as opposed to vocational skills) of students.

**4.14 School lunch.** It is widely recognized that nutrition have positive effects on learning and school lunch is a means of income transfer. However, the analysis of the IEA data on reading achievement at the student level found that while meals (breakfast in particular) has a positive relationship with learning outcomes at the upper primary level, this relationship has no statistical significance at the lower secondary level. Given that spending on school lunch is rapidly growing to the extent that it consumed 16 percent of primary education expenditure and has been extended to secondary schools after 1994, it is important to contain government spending in this area by improving targeting to those truly needy in order to protect educational inputs from being crowded out.

### **C. Opportunities and Challenges**

**4.15 The demographic trends.** While the economic climate has created a positive environment for education reform, the demographic trend presents both an opportunity for reform as well as a challenge in the years to come. According to a World Bank projection of school-age population from 1990 to 2020<sup>18</sup>, reduction in fertility, in combination with other trends, has created unprecedented opportunities for expanding access to adolescents, as well as to pre-school children in the medium-term future. The population of 3- and 4-year-olds is projected to decline by 12 percent between 1995 and 2000, although it would grow back to a higher level from 2000 to 2015, it would still be substantially below the 1990 level. The population of the 5- and 6-year-olds are expected to decrease by 14 percent over the same period before increasing again, while that of the 7-to-11-olds are projected to drop by 31 percent between 1995 and 2005, before increasing again (Figure 2 and Appendixes 12A and 12B). Enrollment trends from 1985 to 1994 confirmed that primary school enrollment peaked in 1993, and began to decline from 1994 onwards (Appendix 6). The implications for the future are that, even if spending remains unchanged at this level, it will be translated into a higher per-student spending, thereby making it possible to improve quality. The key is to strengthen the commitment to finance these basic levels as a strategy to break the cycle of poverty and to impart strong basic skills for children to progress through a life time of learning. This would also entail expanding access to pre-primary education.

**4.16** The situation is different for the older cohorts. The population of the 12-to-14-year-olds will swell by 21 percent between 1990 and 1995 before they began on the course of a gradual decline until 2010 before they pick up again. Similarly, the rank of the 15-to-16-year-olds will also grow, by 15 percent between 1995 and 2000, afterwards, they will also go on a decline. For the 17-to-18-year-olds, their rank will increase by 23 percent between 1995 and 2000, before they follow a similar pattern of decline. For the 19-to-24-year-olds, their rank will swell by 10 percent between 1995 and 2000, and by another 18 percent between 2000 and 2005. The implications of these trends is that the biggest future demand for schooling would be in secondary and tertiary education. During this period, the country will be hard pressed even to maintain the current transition rates in the junior and senior secondary and matriculation levels, let alone extending access to those who are not placed and improving quality to reduce the variability in learning outcomes. However,

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<sup>18</sup> The projection is based on official data on mortality, fertility and migration from the 1990 census in T&T (Bos, 1996). For assumptions of these rates used in the population projection, see notes on Appendix 12.

the first decade of the 21st century presents such an opportunity as this cohort will shrink. This is the period for universalizing junior secondary education, with a view towards extending towards higher levels progressively. Preparation for these undertakings should begin without delay.

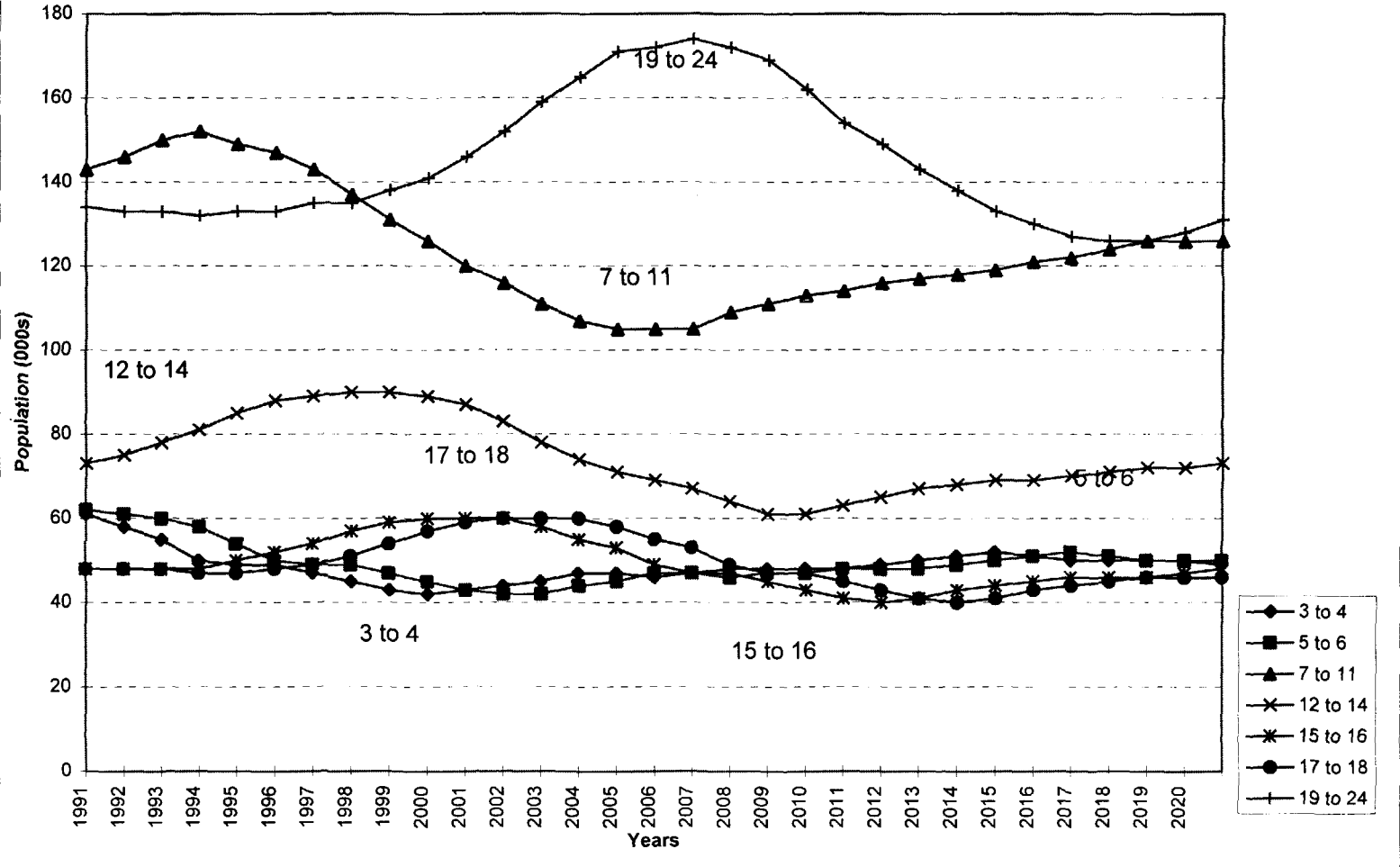
**4.17 Implications for Financing.** If the target is to attain universal junior secondary within the next ten years, additional resources has to be drawn on to finance the expansion. Various studies have found that students from the middle- and upper-income groups are overwhelmingly represented in senior secondary education and tertiary education. To ensure that children in the lower end of the income distribution have an equal opportunity for junior secondary education, charging tuition fees at upper secondary level would relieve the resource constraint.

4.18 Currently, about 32,000 students enroll in Forms 4 to Upper Six. If they are asked to pay the same amount of tuition fees as a private school student, which is \$1,000 per year, this would amount to TT\$32,000,000, or equivalent to 12 percent of the secondary education expenditure. If they pay half of this, it would be equivalent to 6 percent of the secondary education expenditure. The recovered cost can well be used to finance expansion or qualitative improvement of education. If tuition fees are charged in publicly funded schools, scholarships and grants targeted at low-income students should be made available to the qualified students to ensure that they are not denied access on the basis of their ability to pay.

4.19 The current enrollment rate in higher education is low by both regional and world standards, given T&T's income level. Expanding secondary education will stimulate the demand for better trained teachers, thereby putting pressure on university. Expanding enrollment in higher education on one hand will have additional resource implication. However, if existing facilities and faculty members still have excess capacity, expanding higher education will help reduce the high unit cost in this sector, if cost recovery, ex post or ex ante, is pursued simultaneously.

4.20 In summary, the demographic trend presents the opportunity for reform. The challenge is how to finance quantitative expansion and qualitative improvement in a cost-effective manner. Instituting cost recovery at the senior secondary level is justifiable on grounds of equity, efficiency, and quality. However, the political economy of implementing cost recovery calls for a prudent approach. Public support for cost recovery must be mobilized first, and this entails widely publicizing the social cost, benefits, and imperatives for cost sharing in pursuit of a common goal. As the future generation will have to assume the financial obligations committed by this generation, it is imperative that they be endowed with knowledge and skills to ensure their survival in an increasingly competitive world.

**Fig. 14 Projection of School-Age Population between 1990 and 2020 in Trinidad and Tobago**



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## Statistical Appendix

<b>Appendix 1:</b>	GDP (In Million TT\$), 1985-94
<b>Appendix 2:</b>	Central Government Revenue and Expenditure (In Million TT\$), 1985-94
<b>Appendix 3A:</b>	Public Expenditure on Education, 1985-94 (In Million TT\$ at Current Prices)
<b>Appendix 3B:</b>	Public Expenditure on Education (Percentage of Total of Each Level)
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<b>Appendix 6:</b>	Enrollment in Government & Assisted Schools by Level of Education (Number of Students)
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<b>Appendix 21:</b>	Average Score of CXC Examination by Country, 1995
<b>Appendix 22:</b>	Average Student Ability Scores in the IEA International Study on Reading Literacy

**Appendix 1: GDP (In Million TT\$), 1985-94**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Current Market Prices	18,071	17,260	17,272	17,285	18,373	21,539	22,560	23,118	24,987	29,291
Constant 1994 Prices	30,721	29,638	28,233	27,207	26,926	27,531	28,200	27,676	27,405	29,291
GDP Deflator 1985=10	1.00	0.99	1.04	1.08	1.16	1.33	1.36	1.42	1.55	1.70
GDP Deflator 1994=10	0.59	0.58	0.61	0.64	0.68	0.78	0.80	0.84	0.91	1.00

Source: World Bank data

**Appendix 2: Central Government Revenue and Expenditure, 1985-94**

<b>In Current Market Prices</b>										
<b>In Current prices</b>	<b>1985</b>	<b>1986</b>	<b>1987</b>	<b>1988</b>	<b>1989</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>
<b>Total Revenue</b>	6,539	5,329	5,274	4,752	4,869	5,604	6,755	6,085	6,759	7,638
<b>Total Expenditure</b>	7,602	6,167	6,210	5,980	5,682	6,409	7,440	7,417	6,717	7,711
<b>Overall Balance</b>	(1,063)	(838)	(936)	(1,228)	(814)	(804)	(686)	(1,332)	42	(73)
<b>In Constant 1994 Prices</b>										
<b>Total Revenue</b>	11,117	9,151	8,621	7,480	7,135	7,164	8,443	7,285	7,413	7,638
<b>Total Expenditure</b>	12,923	10,589	10,152	9,413	8,327	8,191	9,300	8,880	7,367	7,711
<b>Surplus/deficit</b>	(1,806)	(1,438)	(1,530)	(1,933)	(1,192)	(1,028)	(857)	(1,594)	46	(73)

Sources: World Bank data.

**Appendix 3A: Public Expenditure on Education, 1985-94**  
(In Million TT\$ At Current Prices)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>General Administration</b>										
Personnel	39.3	41.2	37.0	34.9	28.3	29.3	35.1	41.6	43.6	44.1
Goods and Services + LRC	11.3	12.5	12.3	12.5	13.9	16.2	17.5	20.4	22.4	63.5
Minor Equipment + LRC	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.0	0.1
Current Transfers & Subsidies	1.3	1.3	3.3	1.7	3.5	2.8	3.1	3.1	4.3	4.3
Caribbean Examination Council	1.3	1.3	3.3	1.7	3.5	2.8	3.1	3.1	4.3	4.3
Recurrent	52.1	55.2	52.8	49.2	45.8	48.5	55.8	65.2	70.3	112.0
Capital Expenditure	0.6	0.0	0.3	0.5	4.6	6.7	5.9	3.1	3.0	2.4
Sub-Total	52.7	55.2	53.1	49.7	50.4	55.2	61.7	68.3	73.3	114.4
<b>Pre-primary Education</b>										
Nursery School Expenses	-	-	0.4	0.3	0.4	-	-	-	-	-
Current Transfers & Subsidies - Servol (MOE+MOSS)	-	-	-	0.1	0.4	0.6	1.7	1.8	1.5	2.0
Recurrent	-	-	0.4	0.5	0.8	0.6	1.7	1.8	1.5	2.0
Capital Expenditure	0.1	0.0	-	0.2	-	-	0.3	-	-	-
Subtotal	0.1	0.0	0.4	0.7	0.8	0.6	2.0	1.8	1.5	2.0
<b>Primary Education</b>										
Personnel	343.1	347.5	326.3	317.5	276.3	264.9	296.5	329.6	338.9	340.4
Goods and Services	1.8	1.5	1.4	1.0	1.4	2.0	2.0	1.5	2.8	1.7
Minor Equipment	0.4	0.2	0.4	0.3	0.1	0.3	0.4	0.3	0.3	0.1
Current Transfers & Subsidies	88.2	65.8	54.6	11.3	23.8	40.9	44.0	38.8	47.3	73.2
Equipment & upkeep grants	12.2	10.9	12.1	10.6	9.7	10.3	10.8	12.2	13.9	12.9
Utilities & sanitation grants	0.6	0.6	0.8	0.4	1.2	1.5	1.8	1.1	1.7	0.8
Books & uniforms	25.3	25.7	25.8	0.4	0.0	-	1.8	3.4	2.8	0.0
School feeding	50.1	28.6	15.9	-	12.9	29.2	29.6	20.1	28.9	59.5
Recurrent	433.5	415.0	382.7	330.2	301.6	308.1	342.9	368.2	389.2	415.4
Capital	-	-	9.9	25.8	32.8	28.0	55.3	31.5	23.9	50.3
Sub-total	433.5	415.0	392.6	356.0	334.4	336.1	398.2	399.7	413.1	465.7
<b>General Secondary Education</b>										
Personnel	267.6	273.3	263.5	261.6	232.6	225.3	250.3	274.0	279.0	278.0
Salaries & COLA	267.6	273.3	260.9	259.1	229.1	221.6	246.1	269.4	274.4	273.3
Pensions & Gratuities (20)	-	-	2.6	2.5	3.5	3.7	4.2	4.6	4.6	4.7
Goods and Services	9.6	9.5	8.5	7.3	6.7	7.3	7.2	7.8	9.3	7.2
Minor Equipment	1.3	0.5	0.9	0.3	0.5	0.7	1.4	0.8	0.3	0.2
Current Transfers & Subsidies	35.5	35.4	33.5	7.9	8.9	8.6	10.7	12.2	12.0	8.9
Goods & services grants	8.3	8.5	7.0	6.8	8.0	7.6	7.8	7.7	8.8	8.5
Minor equipment	1.6	0.4	0.7	0.5	0.5	0.8	0.7	0.7	0.2	0.2
Building grants	0.1	0.6	0.1	0.2	0.4	0.2	0.3	0.2	0.1	0.3
Books and uniforms	25.5	25.9	25.7	0.4	0.0	-	1.9	3.6	2.9	-
Books for children of deceased officers	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Scholarships	4.9	8.0	6.2	4.5	5.3	3.9	8.8	6.5	5.0	7.6
Corpus Christi College -bought places	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Christ College - bought places	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1
Bishop Centenary College - bought places	-	-	-	-	-	-	-	0.1	0.3	0.3
St. Martin's Girls High School - bought places	-	-	-	-	-	-	-	-	-	0.3
St. Joseph's College - bought places	-	-	-	-	-	-	-	-	-	0.1
St. Charles - bought places	-	-	-	-	-	-	-	-	-	0.0
Caribbean Union Colleges - bought places	-	-	-	-	-	-	-	-	-	-
Fees for Students at Private Secondary Schools	-	-	-	-	-	-	-	-	-	-
Recurrent	313.9	318.6	306.3	277.1	248.7	241.9	269.6	294.8	300.6	294.3
Capital	-	-	3.7	15.2	26.9	23.7	10.9	4.9	3.5	9.9
Sub-Total	313.9	318.6	310.0	292.3	275.6	265.6	280.5	299.7	304.1	304.2

<b>Technical and Vocational Education and Training (Formal)</b>										
Personnel										
Goods and Service	14.6	14.4	14.2	14.0	11.1	11.5	12.8	13.4	13.6	13.8
Minor Equipment	1.6	1.6	1.7	3.3	3.1	3.0	3.2	3.5	2.0	2.1
Transfer & Subsidies (Board of Industrial Training)	0.2	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Hospitality Training Institute	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.2
Recurrent	-	-	-	-	-	-	-	-	-	1.6
Capital	16.8	16.5	16.4	17.6	14.5	14.9	16.4	17.2	15.9	17.7
Subtotal	0.1	0.1	-	-	-	0.1	0.3	0.5	0.3	0.4
	16.9	16.5	16.4	17.6	14.5	14.9	16.7	17.7	16.2	18.1
<b>Vocational Training (Nonformal)</b>										
Personnel (Apprenticeship, transferred from sport)										
Goods & Services	-	-	-	-	-	-	-	-	-	10.5
Minor Equipment	-	-	-	-	-	-	-	-	-	3.1
Transfers & subsidies	-	-	-	-	-	-	-	-	-	0.0
Servol (adolescent) - MOSS & MOE	0.1	0.3	0.3	0.5	0.9	2.4	9.6	6.5	10.8	28.4
Matelot Community College	-	-	-	-	0.7	1.1	3.7	2.2	1.8	3.5
Apprenticeship schemes	-	-	-	-	0.1	0.1	0.1	0.1	0.1	0.1
Youth centers, camps (46, 26)	-	-	-	-	-	-	1.9	2.8	8.5	22.0
Trade Center (33)/others after 1994	0.3	0.3	0.3	-	-	-	0.5	0.4	0.4	0.5
National services (39)	-	-	-	0.5	0.1	0.1	0.1	0.1	0.1	2.3
Recurrent	-	-	-	-	-	1.1	3.3	0.9	-	-
Capital Expenditure	0.1	0.3	0.3	0.5	0.9	2.4	9.6	6.5	10.8	42.0
Sub-total	-	-	0.4	3.2	6.3	8.2	14.3	21.4	25.6	28.4
	0.5	0.9	0.7	3.7	7.1	10.6	23.8	27.8	36.4	70.4
<b>Teacher Training</b>										
Personnel										
Goods and Services	8.3	12.2	12.3	9.3	8.3	7.3	8.7	10.4	14.0	17.4
Minor Equipment	0.5	0.5	0.6	0.3	0.3	0.3	0.3	0.1	0.1	0.1
Recurrent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital	8.8	12.7	12.9	9.6	8.6	7.6	9.0	10.5	14.1	17.5
Sub-total	0.1	0.1	-	-	-	-	-	0.1	-	1.5
	8.9	12.8	12.9	9.6	8.6	7.6	9.0	10.6	14.1	18.9
<b>Tertiary Education</b>										
Current Transfers & Subsidies										
UWI (26 or 13)	78.0	30.3	82.8	87.0	79.9	92.6	141.7	100.6	100.0	149.3
National Institute of Higher Education (13)	72.1	24.5	71.3	78.3	71.0	78.7	124.0	83.5	80.3	127.8
Cipriani Labor College (30)	4.3	4.2	5.3	4.5	4.1	4.8	8.2	7.7	7.5	7.1
Medicial complex (28)	1.6	1.6	1.6	1.4	1.2	1.2	1.6	1.5	1.5	1.5
Advanced nursing course (28)	-	-	4.6	2.8	3.6	7.8	7.8	7.8	10.7	12.9
ECIAF (25)	-	-	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0
Recurrent	-	-	-	-	-	-	-	-	-	-
Capital Expenditure	78.0	30.3	82.8	87.0	79.9	92.6	141.7	100.6	100.0	149.3
Subtotal	-	-	26.0	25.8	12.0	4.4	4.5	5.5	-	1.1
	78.0	30.3	108.8	112.8	91.9	97.0	146.2	106.1	100.0	150.4
<b>Special Education</b>										
Capital										
Subtotal	-	-	-	0.1	0.0	0.1	0.1	0.1	0.1	0.2
	-	-	-	0.1	0.0	0.1	0.1	0.1	0.1	0.2
<b>Adult Education</b>										
Capital										
Subtotal	-	-	0.7	1.2	0.5	0.4	-	-	-	-
	-	-	0.7	1.2	0.5	0.4	-	-	-	-
<b>Total Recurrent</b>										
Total Capital	903.3	848.5	854.6	771.6	700.7	716.5	846.6	864.8	902.5	1,050.3
Total Expenditure	0.8	0.3	41.0	71.9	83.1	71.5	91.5	67.0	56.4	94.2
	904.1	848.8	895.6	843.5	783.8	788.0	938.1	931.9	958.9	1,144.5
Sources: Estimates Detailed of Estimates of Recurrent Expenditure, 1987-1996.										
Estimates: Development Programme, 1987-1996.										

**Appendix 3B: Public Expenditure on Education (Percentage of Total of Each Level)**

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Educational Services</b>										
Personnel										
Goods and Services + LRC	74.6%	74.6%	69.7%	70.3%	56.2%	53.1%	56.9%	60.9%	59.4%	38.5%
Minor Equipment + LRC	21.4%	22.6%	23.2%	25.2%	27.6%	29.3%	28.4%	29.9%	30.5%	55.5%
Current Transfers & Subsidies	0.5%	0.4%	0.4%	0.2%	0.2%	0.4%	0.2%	0.1%	0.1%	0.0%
Caribbean Examination Council	2.5%	2.4%	6.2%	3.4%	6.9%	5.1%	5.0%	4.5%	5.9%	3.8%
Recurent	2.5%	2.4%	6.2%	3.4%	6.9%	5.1%	5.0%	4.5%	5.9%	3.8%
Capital	99.0%	99.9%	99.4%	99.1%	90.9%	87.9%	90.4%	95.5%	95.9%	97.9%
Subtotal	1.0%	0.1%	0.6%	0.9%	9.1%	12.1%	9.6%	4.5%	4.1%	2.1%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Pre-primary Education</b>										
Nursery School Expenses										
Current Transfers & Subsidies - Servol (MOE+MOSS)	0.00	0.0	100.0%	51.1%	46.7%	0.0	0.0	0.0	0.0	0.0
Recurent	0.00	0.0	0.00	18.8%	53.3%	100.0%	85.0%	100.0%	100.0%	100.0%
Capital	0.00	0.0	100.0%	69.9%	100.0%	100.0%	85.0%	100.0%	100.0%	100.0%
Subtotal	100.0%	100.0%	0.0	30.1%	0.0	0.0	0.2	0.0	0.0	0.0
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Primary Education</b>										
Personnel										
Goods and Services	79.1%	83.7%	83.1%	89.2%	82.6%	78.8%	74.5%	82.5%	82.0%	73.1%
Minor Equipment	0.4%	0.4%	0.4%	0.3%	0.4%	0.6%	0.5%	0.4%	0.7%	0.4%
Current Transfers & Subsidies	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%
Equipment & upkeep grants	20.3%	15.9%	13.9%	3.2%	7.1%	12.2%	11.0%	9.2%	11.4%	15.7%
Utilities & sanitation grants	2.8%	2.6%	3.1%	3.0%	2.9%	3.0%	2.7%	3.1%	3.4%	2.8%
Books and uniforms	0.1%	0.1%	0.2%	0.1%	0.4%	0.4%	0.5%	0.3%	0.4%	0.2%
School feeding	5.8%	6.2%	6.6%	0.1%	0.0%	0.0%	0.5%	0.9%	0.7%	0.0%
Recurent	12%	7%	4.0%	0.0	3.9%	8.7%	7.4%	5.0%	7.0%	12.8%
Capital	100.0%	100.0%	97.5%	92.8%	90.2%	91.7%	86.1%	92.1%	94.2%	89.2%
Subtotal	0.0%	0.0%	2.5%	7.2%	9.8%	8.3%	13.9%	7.9%	5.8%	10.8%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>General Secondary Education</b>										
Personnel										
Salaries & COLA	85.2%	85.8%	85.0%	89.5%	84.4%	84.8%	89.2%	91.4%	91.7%	91.4%
Pensions & Gratuities (20)	85.2%	85.8%	84.1%	88.7%	83.1%	83.4%	87.7%	89.9%	90.2%	89.8%
Goods and Services	0.0%	0.0%	0.8%	0.8%	1.3%	1.4%	1.5%	1.5%	1.5%	1.5%
Minor Equipment	3.1%	3.0%	2.7%	2.5%	2.4%	2.7%	2.6%	2.6%	3.1%	2.4%
Current Transfers & Subsidies	0.4%	0.1%	0.3%	0.1%	0.2%	0.3%	0.5%	0.3%	0.1%	0.1%
Goods & services grants	11.3%	11.1%	10.8%	2.7%	3.2%	3.2%	3.8%	4.1%	4.0%	2.9%
Minor equipment	2.6%	2.7%	2.3%	2.3%	2.9%	2.9%	2.8%	2.6%	2.9%	2.8%
Building grants	0.5%	0.1%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.1%	0.1%
Books and uniforms	0.0	0.2%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
Books for children of deceased officers	8.1%	8.1%	8.3%	0.1%	0.0%	0.0%	0.7%	1.2%	1.0%	0.0%
Scholarships	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Corpus Christi College -bought places	1.6%	1.9%	2.0%	1.5%	1.9%	1.5%	2.4%	2.2%	1.6%	2.5%
Christ College - bought places	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Bishop Centenary College - bought places	0.0	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%
St. Martin's Girls High School - bought places	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1%	0.1%
St. Joseph's College - bought places	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1%
St. Charles - bought places	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribbean Union Colleges - bought places	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fees for Students at Private Secondary Schools	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Recurent	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capital	100.0%	100.0%	98.8%	94.8%	90.2%	91.1%	96.1%	98.4%	98.6%	96.8%
Subtotal	0.0%	0.0%	1.2%	5.2%	9.8%	8.9%	3.9%	1.6%	1.2%	3.2%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%



Appendix 4: Share of Recurrent and Capital Expenditure on Education by Level, 1985-1994

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Recurrent Expenditure</b>										
Administration										
Pre-School	5.8%	6.5%	6.2%	6.4%	6.5%	6.8%	6.6%	7.5%	7.8%	10.7%
Primary	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Secondary	48.0%	48.9%	44.8%	42.8%	43.0%	43.0%	40.5%	42.6%	43.1%	39.6%
Technical Education	34.6%	37.5%	35.8%	35.9%	35.5%	33.8%	31.8%	34.1%	33.3%	28.0%
Vocational Training (Nonformal)	1.9%	1.9%	1.9%	2.3%	2.1%	2.1%	1.9%	2.0%	1.8%	1.7%
Teacher Training	0.0%	0.0%	0.0%	0.1%	0.1%	0.3%	1.1%	0.7%	1.2%	4.0%
Tertiary	1.0%	1.5%	1.5%	1.2%	1.2%	1.1%	1.1%	1.2%	1.6%	1.7%
<b>Total Recurrent</b>	<b>8.6%</b>	<b>3.6%</b>	<b>9.7%</b>	<b>11.3%</b>	<b>11.4%</b>	<b>12.9%</b>	<b>16.7%</b>	<b>11.6%</b>	<b>11.1%</b>	<b>14.2%</b>
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Capital Expenditure</b>										
Administration										
Pre-School	68.8%	12.0%	0.7%	0.7%	5.5%	9.4%	6.4%	4.6%	5.3%	2.6%
Primary	6.3%	16.0%	0.0%	0.3%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%
Secondary	0.0%	0.0%	24.2%	35.9%	39.5%	39.1%	60.4%	47.0%	42.4%	53.4%
Technical Education	0.0%	0.0%	9.0%	21.1%	32.4%	33.1%	11.9%	7.3%	6.2%	10.5%
Vocational Training (Nonformal)	12.5%	32.0%	0.0%	0.0%	0.0%	0.1%	0.3%	0.7%	0.4%	0.5%
Teacher Training	0.0%	0.0%	0.9%	4.4%	7.6%	11.5%	15.6%	31.9%	45.5%	30.1%
Tertiary	12.5%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	1.5%
<b>Total Capital</b>	<b>0.0%</b>	<b>0.0%</b>	<b>63.5%</b>	<b>35.9%</b>	<b>14.4%</b>	<b>6.2%</b>	<b>4.9%</b>	<b>8.2%</b>	<b>0.0%</b>	<b>1.2%</b>
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%



Appendix 5: Total Public Expenditure by Level, 1994-95 (in Millions Constant 1994 TT\$)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Administration										
Pre-primary Education	88.6	94.8	86.3	77.4	67.1	62.0	69.8	78.1	77.1	112.0
Primary Education	-	-	0.6	0.7	1.1	0.8	2.1	2.2	1.7	2.0
Secondary Education	737.0	712.6	625.6	519.7	442.0	393.8	428.6	440.8	426.9	415.4
Technical Education	533.7	547.1	500.7	436.1	364.4	309.1	337.0	352.9	329.7	294.3
Nonformal Vocation Training	28.6	28.3	26.8	27.7	21.2	19.0	20.5	20.6	17.4	17.7
Teacher Training	0.2	0.5	0.5	0.8	1.3	3.1	12.0	7.7	11.9	42.0
Tertiary Education	14.9	21.7	21.1	15.1	12.6	9.7	11.3	12.6	15.4	17.5
	132.6	52.0	135.3	136.9	117.1	118.3	177.1	120.4	109.6	149.3
Total Recurrent										
Total Capital	1,535.6	1,456.9	1,396.9	1,214.5	1,026.8	915.8	1,058.2	1,035.3	989.8	1,050.3
Total Public Expenditure on Education	1.4	0.4	67.0	113.2	121.8	91.4	114.4	80.3	61.8	94.2
	1,537	1,457	1,464	1,328	1,149	1,007	1,173	1,116	1,052	1,145

Appendix 6: Enrollment in Government & Assisted Schools by Level of Education (Number of Students)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Pre-primary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20000	22,000
Primary	168,308	172,424	176,471	184,402	186,402	190,026	194,192	196,329	197,030	191,636
Secondary	92,017	94,487	96,691	96,834	97,273	96,245	96,868	97,161	99,590	95,109
Technical Institutes	3,802	4,419	3,982	4,282	3,890	4,011	4,965	3,783	4,107	4,084
Nonformal Vocational Training	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2,704
Teacher Training	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	539	719
University of West Indies	3,428	3,728	3,803	4,167	4,208	4,166	4,090	4,529	5,197	5,191

Source: MOE and Report on Education Statistics 1990-1991, Central Statistical Office, p. 3; and MOE for enrollment figures from 1992 to 1994.

Appendix 7: Per-student Recurrent Public Expenditure (In Constant 1994 TT\$)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Pre-primary	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	84	91
Primary	4,379	4,133	3,545	2,818	2,371	2,072	2,207	2,245	2,167	2,168
Secondary	5,800	5,790	5,179	4,504	3,746	3,212	3,479	3,632	3,311	3,095
Technical Education	7,512	6,398	6,724	6,473	5,455	4,732	4,124	5,458	4,247	4,335
Nonformal Vocational Training	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15,534
Teacher Training	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3,760	24,318
Tertiary	38,684	13,955	35,586	32,863	27,831	28,394	43,292	26,579	21,096	28,771

Appendix 8: Per-student Recurrent Expenditure as a Percentage of Per Capital GNP

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Administration	0.3%	0.3%	0.3%	0.3%	0.2%	0.2%	0.2%	0.3%	0.3%	0.4%
Pre-primary Education	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Primary Education	2.4%	2.4%	2.2%	1.9%	1.6%	1.4%	1.5%	1.6%	1.6%	1.4%
Secondary Education	1.7%	1.8%	1.8%	1.6%	1.4%	1.1%	1.2%	1.3%	1.2%	1.0%
Technical Education	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Nonformal Vocation Training	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Teacher Training	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Tertiary Education	0.4%	0.2%	0.5%	0.5%	0.4%	0.4%	0.6%	0.4%	0.4%	0.5%
Total Recurrent	5.0%	4.9%	4.9%	4.5%	3.8%	3.3%	3.8%	3.7%	3.6%	3.6%
GNP (In Million Constant 1994 TT\$)										
Population (Million)	30,721	29,638	28,233	27,207	26,926	27,531	28,200	27,676	27,405	29,291
Per Capital GNP (In Constant 1994 TT\$)	1.20	1.21	1.21	1.21	1.23	1.24	1.25	1.26	1.26	1.26
Implicit GDP 1994=100	25,686	24,454	23,295	22,430	21,945	22,256	22,524	21,965	21,750	23,247
	0.5882	0.5824	0.6118	0.6353	0.6824	0.7824	0.8	0.8353	0.9118	1.0

**Appendix 9: Estimate for 1993/94 of Annual Cost of Undergraduate Degree Programs at St. Augustine Campus, Trinidad (TTS)**

	Agriculture		Arts & Gen. Stds. (B.A)			Engineering		Law	Natural Sciences B.Sc.		Social Sciences (B.Sc. ECON, etc)			Education B.A
	B.Sc. Agric./Agronomy (e)		Day (F/T)	Day (P/T)	Evening	B.Sc. Eng./ B.Sc. Land Sur.		LLB. Year 1	(F/T)	(P/T)	Day		Evening	
											F/T	P/T		
<b>Tuition</b>	8,130	4,330	4,340	2,340	2,280	7,785	7,800	5,340	6,340	3,340	3,740	2,040	1,980	4,240
<b>Residence</b>	12,680	4,330	8,890	2,340	2,280	12,335	12,350	9,890	10,890	3,340	8,290	2,040	1,980	4,240

**Appendix 10: Private School Recurrent Expenditure, 1991**

	<b>Pre-primary</b>	<b>Primary</b>	<b>Secondary</b>	<b>Techvoc.</b>	<b>Commerci al</b>	<b>Tertiary</b>	<b>Others</b>
<b>In Million TTS (current prices)</b>							
<b>Receipt from fees</b>	13.1	9.5	3.8	1.019	1.6	3.6	1.3
<b>Wages &amp; Salaries</b>	7.1	6.050	1.8	.392	.728	2.3	.724
<b>Fuel &amp; Electricity</b>	.255	.064	.078	.026	.081	.096	.035
<b>Other Expenses</b>	2.31	2.82	.653	.138	.435	4.54	.274
<b>Recurrent</b>	9.75	8.94	2.60	.557	1.24	7.02	1.
<b>Operating surplus</b>	3.38	.632	1.20	.461	.371	(3.41)	.296
<b># of schools</b>	771	37	29	11	42	12	40
<b># of schools</b>	739	34	26	10	33	9	27
<b>Teachers in resp.</b>	1,556	368	201	112	100	182	93
<b>Students in</b>	21,556	6,476	3,722	2,309	2,002	1,937	1,704
<b>Student:teacher</b>	14	18	19	21	20	11	18
<b>Cost per student</b>	453	1,381	700	241	622	3,625	607
<b>Fees/student/year</b>	610	1478	1024	441	808	1862	781
<b>Fees/person/mont</b>	51	123	85	37	67	155	65
<b>Annual</b>	4,617	1,6442	9,328	3,509	7,283	13,096	7,794
<b>Monthly</b>	385	1370	777	292	607	1091	650

Source: Survey of private schools jointly conducted by MOE and Central Statistical Office, 1991

**Appendix 11: Estimates of Household Spending on Education, 1991 (In Current 1991 TTS)**

	<b>Pre-primary</b>	<b>Primary</b>	<b>Secondary</b>	<b>Techvoc.</b>	<b>Commercial</b>	<b>Tertiary</b>	<b>Others</b>	<b>Total</b>	<b>% of</b>
<b>Students in PSS</b>	21,556	6,476	3,722	2,309	2002	1937	1704		
<b>Private students in record</b>	21,556	6,627	4,624	2,309	2002	1937	1704		
<b>Public school students</b>	4,000	194,192	96,868	4,965		4137			
<b>Fees per student (Private)</b>	610	1,478	1,024	441	808	1861	781		
<b>Ave. travel &amp; Books/student (SLC)</b>	323.8	343.2	1831.1	1831.1	1831.1	1831.1	1831.1		
<b>Uniform/student (SLC)</b>	100	120	200	250	300	500	300		
<b>Tuition fees in private</b>	13.1	9.8	4.7	1.01	1.6	3.6	1.3	35.2	0.16%
<b><u>In Million TTS</u></b>									
<b>UWI students tuition fees</b>					17.65			17.65	0.08%
<b>Travel &amp; lunch of private</b>	6.98	2.27	8.47	4.23	3.67	3.55	3.12	32.28	0.14%
<b>Books of private students</b>	2.15	.795	.924	.577	.600	.968	.511	6.5	0.03%
<b>Uniform of private</b>	2.15	.795	.924	.577	.600	.968	.511	6.5	.03%
<b>Travel &amp; lunch of public</b>	1.29	66.65	177.37	9.09	7.57	261.98			1.16%
<b>Books of public students</b>	.400	23.30	19.37	1.24	2.07	46.39			0.21%
<b>Uniform of public students</b>	.400	23.30	19.37	1.24	2.07	46.39			0.21%
<b>Total household spending</b>	26.53	126.91	231.17	17.97	6.48	38.45	5.47	452.99	2.01%

Source: Estimates based on T&T Government's private school survey (PSS), 1991; SLC, 1992; and mission estimates.

Appendix 12: A: Projected School-Age Population by Selected Age Range, 1990-2020 (In Thousands) with NRR=1 by 2000

Age Group	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
<b>MALE</b>																																
3 to 4	31	29	28	25	25	24	23	22	22	22	22	22	23	24	24	24	24	24	24	24	24	24	25	26	26	26	26	26	26	26	26	
5 to 6	32	31	30	28	27	25	25	25	24	23	22	22	21	22	23	24	24	24	24	24	24	24	24	24	25	26	26	26	26	26	26	
7 to 11	73	74	76	77	75	74	72	69	66	63	60	58	56	54	53	53	53	55	57	58	58	59	60	60	60	61	62	63	64	65	65	
12 to 14	37	38	40	41	43	44	45	45	45	44	42	39	37	36	35	34	32	31	31	32	33	34	35	36	36	36	36	36	36	37	37	
15 to 16	24	24	24	24	25	27	27	29	30	30	30	29	28	27	25	24	24	23	22	21	20	21	22	22	23	24	24	24	24	24	24	
17 to 19	24	24	24	24	24	24	25	26	27	29	30	30	30	30	29	28	27	25	24	24	23	22	21	20	21	22	22	23	24	24	24	
19 to 24	67	67	67	66	67	67	68	68	70	71	73	77	80	83	86	87	88	87	86	83	78	76	73	71	68	66	65	64	64	65	67	
<b>TOTAL</b>	<b>288</b>	<b>287</b>	<b>289</b>	<b>286</b>	<b>286</b>	<b>286</b>	<b>285</b>	<b>284</b>	<b>283</b>	<b>281</b>	<b>281</b>	<b>278</b>	<b>278</b>	<b>278</b>	<b>276</b>	<b>274</b>	<b>271</b>	<b>269</b>	<b>266</b>	<b>266</b>	<b>261</b>	<b>260</b>	<b>259</b>	<b>259</b>	<b>259</b>	<b>260</b>	<b>261</b>	<b>262</b>	<b>264</b>	<b>266</b>	<b>268</b>	
<b>Age Group</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	
<b>FEMALE</b>																																
3 to 4	30	29	27	25	24	24	23	22	21	20	21	22	22	23	23	22	23	24	24	24	24	24	24	25	26	26	24	24	24	24	24	
5 to 6	30	30	30	28	27	25	24	24	23	22	21	20	21	22	22	23	23	22	23	23	23	24	24	24	24	24	25	26	25	24	24	24
7 to 11	70	72	74	75	74	73	71	68	65	63	60	58	55	53	52	52	52	54	54	55	55	56	57	58	59	60	60	61	62	61	61	61
12 to 14	36	37	39	40	42	44	44	45	45	44	43	41	39	37	35	34	33	32	30	30	31	32	33	33	33	33	34	35	36	36	36	
15 to 16	24	24	24	24	25	25	27	28	29	30	30	30	29	27	26	24	23	23	22	21	20	20	21	22	22	22	22	22	22	22	23	24
17 to 19	24	24	24	23	23	24	24	25	27	28	29	30	30	30	29	27	26	24	23	23	22	21	20	20	20	21	22	22	22	22	22	22
19 to 24	67	66	66	66	66	66	67	67	68	70	73	75	79	82	85	85	86	85	83	79	76	73	70	67	65	64	62	62	62	63	64	
<b>TOTAL</b>	<b>281</b>	<b>282</b>	<b>283</b>	<b>282</b>	<b>281</b>	<b>281</b>	<b>280</b>	<b>279</b>	<b>278</b>	<b>277</b>	<b>277</b>	<b>276</b>	<b>275</b>	<b>274</b>	<b>272</b>	<b>267</b>	<b>266</b>	<b>264</b>	<b>259</b>	<b>255</b>	<b>252</b>	<b>250</b>	<b>248</b>	<b>248</b>	<b>249</b>	<b>250</b>	<b>250</b>	<b>251</b>	<b>252</b>	<b>253</b>	<b>255</b>	
<b>Total M+F</b>	<b>569</b>	<b>569</b>	<b>572</b>	<b>568</b>	<b>567</b>	<b>567</b>	<b>566</b>	<b>564</b>	<b>562</b>	<b>560</b>	<b>558</b>	<b>557</b>	<b>553</b>	<b>552</b>	<b>550</b>	<b>543</b>	<b>540</b>	<b>535</b>	<b>528</b>	<b>521</b>	<b>513</b>	<b>510</b>	<b>507</b>	<b>507</b>	<b>508</b>	<b>510</b>	<b>511</b>	<b>513</b>	<b>516</b>	<b>518</b>	<b>523</b>	
<b>M+F</b>																																
3 to 4	61	58	55	50	49	49	47	45	43	42	43	44	45	47	47	46	47	48	48	48	48	48	50	51	52	51	50	50	50	50	49	
5 to 6	62	61	60	58	54	50	49	49	47	45	43	42	42	44	45	47	47	46	47	47	48	48	48	49	50	51	52	51	50	50	50	
7 to 11	143	146	150	152	149	147	143	137	131	126	120	116	111	107	105	105	109	111	113	114	116	117	118	119	121	122	124	126	126	126	126	
12 to 14	73	75	78	81	85	88	89	90	89	87	83	78	74	71	69	67	64	61	61	63	65	67	68	69	69	69	70	71	72	72	73	
15 to 16	48	48	48	48	50	52	54	57	59	60	60	60	58	55	53	49	47	47	45	43	41	40	41	43	44	45	46	46	46	47	48	
17 to 19	48	48	48	47	47	48	49	51	54	57	59	60	60	60	58	55	53	49	47	47	45	43	41	40	41	43	44	45	46	46	46	
19 to 24	134	133	133	132	133	133	135	135	136	141	146	152	159	165	171	172	174	172	169	162	154	149	143	138	133	130	127	126	126	129	131	



**Assumptions of the Population Projection**

	1990-95	1995-2000	2000-05	2005-2010	2010-2015	2015-2020	
Birth Rate	19.2	17.7	17.8	17.7	16.9	15.6	
Death Rate	6.2	6.0	5.8	5.7	6.0	6.3	
Rate of Nat. Inc.	1.30	1.18	1.20	1.20	1.09	.93	
Net Migration Rate	-6.4	-4.6	-3.0	-1.4	.0	.0	
Growth Rate	.66	.71	.90	1.06	1.09	.93	
Total Fertility	2.200	2.082	2.075	2.070	2.068	2.065	
NRR	1.052	1.000	1.000	1.000	1.000	1.000	
e(0) - Both Sexes	71.60	72.81	74.10	75.36	75.97	76.60	
e(15) - Both Sexes	58.17	59.11	60.21	61.31	61.86	62.44	
IMR - Both Sexes	15.0	12.0	9.8	8.2	7.7	7.1	
q(5) - Both Sexes	.0182	.0148	.0122	.0104	0.0097	.0091	
Dep. Ratio	65.2	59.5	49.8	45.1	45.6	47.5	48.7

**Projected School-Age Population and the Rates of Change by a Five-Year Interval, 1990-2020**

Age Group	1990	1995	2000	2005	2010	2015	2020	M+F (Percentage Change)						
								1990-1995	1995-2000	2000-2005	2005-2010	2010-2015	2015-2020	
M+F(In thousands)														
3 to 4	61	49	43	46	48	51	49	3 to 4	-19.7	-12.2	7.0	4.3	6.3	-3.9
5 to 6	62	50	43	47	48	51	50	5 to 6	-19.4	-14.0	9.3	2.1	6.3	-2.0
7 to 11	143	147	120	105	114	121	126	7 to 11	2.8	-18.4	-12.5	8.6	6.1	4.1
12 to 14	73	88	87	69	63	69	73	12 to 14	20.5	-1.1	-20.7	-8.7	9.5	5.8
15 to 16	48	52	60	49	41	45	48	15 to 16	8.3	15.4	-18.3	-16.3	9.8	6.7
17 to 18	48	48	59	55	45	43	46	17 to 18	0.0	22.9	-6.8	-18.2	-4.4	7.0
19 to 24	134	133	146	172	154	130	131	19 to 24	-0.7	9.8	17.8	-10.5	-15.6	0.8

**Appendix 13: Trinidad and Tobago Repetition, Promotion, and Dropout Rates in Primary Education**

	<u>Standard 1</u>		<u>Standard 2</u>		<u>Standard 3</u>		<u>Standard 4</u>		<u>Standard 5</u>		<u>Post-Primary 6</u>		<u>Post-Primary 7</u>	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b><u>1990-91</u></b>														
<b>Repetition</b>	1.5	0.9	1.2	0.7	0.7	0.7	0.9	0.8	11.3	12.8	15.9	12.8	21.9	19.3
<b>Promotion</b>	98.0	98.8	98.1	98.7	98.7	98.8	98.5	98.8	85.7	85.0	-	-	-	-
<b>Dropout</b>	0.5	0.3	0.7	0.6	0.6	0.5	0.6	0.4	2.9	2.2	-	-	-	-
<b><u>1991-92</u></b>														
<b>Repetition</b>	1.1	0.7	0.9	0.5	0.7	0.4	1.2	1.0	10.1	12.3	13.2	12.9	27.1	19.9
<b>Promotion</b>	98.5	98.9	98.7	99.1	98.8	99.2	98.2	98.6	87.8	86.0	-	-	-	-
<b>Dropout</b>	0.4	0.4	0.4	0.4	0.5	0.4	0.6	0.4	2.1	1.7	-	-	-	-
<b><u>1992-93</u></b>														
<b>Repetition</b>	1.2	0.8	0.8	0.5	1.0	0.6	1.5	1.1	11.2	14.4	10.2	10.9	18.4	18.7
<b>Promotion</b>	98.6	98.9	99.0	99.4	98.7	99.1	98.1	98.6	87.6	84.7	-	-	-	-
<b>Dropout</b>	0.2	0.3	0.3	0.2	0.3	0.3	0.4	0.3	1.2	1.0	-	-	-	-
<b><u>3-year Ave.</u></b>														
<b>Repetition</b>	1.3	0.8	1.0	0.6	0.8	0.6	1.2	0.9	10.9	13.2	13.1	12.2	22.5	19.3
<b>Promotion</b>	98.4	98.9	98.6	99.1	98.7	99.0	98.3	98.7	87.0	85.2	-	-	-	-
<b>Dropout</b>	0.4	0.3	0.5	0.4	0.5	0.4	0.5	0.4	2.1	1.6	-	-	-	-

**Appendix 14: Cohort Flow Analysis**

<b>Males</b>	<b>Std. 1</b>	<b>Std. 2</b>	<b>Std. 3</b>	<b>Std. 4</b>	<b>Std. 5</b>	<b>Graduates</b>	<b>Cohort Member still enrolled</b>
<b>1990</b>	1000						1000
<b>1991</b>	13	984					996
<b>1992</b>		22	970				991
<b>1993</b>			30	957			987
<b>1994</b>				40	941		981
<b>1995</b>					142	819	142
<b>1996</b>					15	124	15
<b>1997</b>					2	13	2
<b>1998</b>						1	
<b>Pupil-year</b>							5115
<b>Dropout by grade</b>	4	5	4	5	23		
<b>Survival by grade</b>	1000	996	992	987	982	958	

<b>Females</b>	<b>Std. 1</b>	<b>Std. 2</b>	<b>Std. 3</b>	<b>Std. 4</b>	<b>Std. 5</b>	<b>Graduates</b>	<b>Cohort Member still enrolled</b>
<b>1990</b>	1000						1000
<b>1991</b>	8	989					997
<b>1992</b>		13	979				993
<b>1993</b>			19	970			989
<b>1994</b>				28	957		985
<b>1995</b>					153	815	153
<b>1996</b>					20	133	20
<b>1997</b>					3	18	3
<b>1998</b>						2	
<b>Pupil-year</b>							5139
<b>Dropout by grade</b>	3	4	4	4	19		
<b>Survival by grade</b>	1000	997	993	989	985	966	
<b>Number of male students in a cohort who eventually complete Std. 5</b>							
<b>Number of female students in a cohort who eventually complete Std. 5</b>							
<b>Number of years to produce a male Std. 5 leaver (5115 pupil-yr./958 leavers)</b>							
<b>Number of years to produce a female Std. 5 leaver (5139 pupil-yr./966 leavers)</b>							

**Appendix 15: Additional Recurrent Cost for Expanding Coverage, 1994-2001**

	<b>Trained Persons per year</b>	<b>Annual Cost (TTS)</b>	<b>Persons Trained in 8 years</b>	<b>Total Cost 1994-2001</b>	<b>Unit per</b>
<b>School-based Management</b>					
Principals	200	190,000	1,600	1,520,000	950
Dept. Heads		550,000		4,400,000	
<b>To Maintain Universal Primary Education</b>					
Pre-service training	438	768,000	3,500	6,144,000	1,755
<b>To Maintain 70% Transition Rate</b>					
Training Nongraduate	238	2,446,970	1,900	19,575,758	10,303
Traning Graduate	175	1,803,030	1,400	14,424,242	10,303
<b>3-month Refresher Course</b>					
Teachers	300	1,800,000	2,400	14,400,000	6,000
<b>Incentives for Improving Qualification</b>					
Increased remuneration		1,283,000		10,264,000	
<b>Reduce Pupil:Teacher</b>					
30:1 to 25:1		1,297,890		10,383,120	
30:1 to 20:1		4,295,846		34,366,768	
<b>Paying for Private Schools Places @ TT1,147.00 per student per year (adjusted for 1994 prices)</b>					
For 30% unplaced students	43,000	49,321,000	344,000	394,568,000	1,147
<b>Total Recurrent Cost (at</b>		<b>10,138,890</b>		<b>81,111,120</b>	
<b>Total Recurrent Cost (at</b>		<b>14,434,736</b>		<b>115,477,88</b>	
<b>Total Recurrent Cost (at 25:1+bought places)</b>		<b>63,755,736</b>		<b>510,045,88</b>	

**Additional Capital Cost**

	Average # of new schools built per year	Cost per Year	Total # of new Schools built	Total Cost 1994-2001
<b>Universal Coverage</b>				
Primary Sch. Construction	6.4	22,918,750	51	183,350,00
Secondary Sch. Construct	6.1	142,500,000	49	1,140,000,
<b>Maintain 70% transition rate</b>				
By Building Sec. Sch.	3.5	50,000,000	21	400,000,00
Maintain 70% & bought places for 30%		99,321,000		
Savings from school construction		43,179,000		
Teacher Training		1,500,000		12,000,000
<b>Total Recurrent and Capital Cost for Universal Primary and Secondary Education (@25:1 Tech.: Std. Ratio)</b>				
		177,057,640		1,4164 M.
<b>Total Recurrent and Captial Cost for Universal Primary and 70% Secondary Education (@25:1</b>				
		84,557,640		676 M.
<b>Total Recurrent and Capital Cost for Universal Primary, 70% Secondary Education, &amp; 30% Bought Places</b>				
		138,174,486		1,105

Source: Education Policy Paper, pp. 6-10; Mission Estimates.

**Appendix 16: Mean Days of Attendance for Persons Attending Full-time School  
(by gender)**

Quintile	Males		Females	
	Mean Days	Number of Observations	Mean Days	Number of Observations
1	4.2	222	4.4	202
2	4.5	192	4.6	188
3	4.4	191	4.6	192
4	4.6	170	4.6	187
5	4.5	131	4.6	142
	4.4	906	4.6	911



**Appendix 17: Mean Days of Attendance for Persons Attending Full-time School ( by Urban / Rural areas)**

	<b>Urban</b>		<b>Rural</b>		<b>Country wide</b>	
	Mean days	Number of observations	Mean days	Number of observations	Mean days	Number of observations
<b>Quintile</b>						
1	4.1	212	4.5	212	4.3	424
2	4.5	140	4.5	240	4.5	380
3	4.5	170	4.5	213	4.5	383
4	4.8	150	4.5	207	4.6	357
5	4.6	147	4.5	126	4.6	273
<b>National</b>	4.5	819	4.5	998	4.5	1817

**Appendix 18: Reasons for Non-Attendance among Primary & Secondary School Students during the Previous Week  
(by Urban/Rural classification)**

	Number of Observations						Percentage					Country-wide
	Expenditure Quintiles					Total	Expenditure Quintiles					
	1	2	3	4	5			1	2	3	4	5
<b>Urban Areas</b>												
<b>Illness</b>	10	2	2	2	2	18	15.2	6.3	8.7	12.5	11.8	11.7
<b>Finance problem</b>	15	1	4	1	0	21	22.7	3.1	17.4	6.3	0.0	13.6
<b>Transport prob.</b>	12	0	0	0	0	12	18.2	0.0	0.0	0.0	0.0	7.8
<b>Not worth</b>	0	1	1	1	2	5	0.0	3.1	4.3	6.3	11.8	3.2
<b>Holiday</b>	12	11	7	4	3	37	18.2	34.4	30.4	25.0	17.6	24.0
<b>Pregnant</b>	0	0	0	1	0	1	0.0	0.0	0.0	6.3	0.0	0.6
<b>Other</b>	17	15	9	7	10	58	25.8	46.9	39.1	43.8	58.8	37.7
<b>No answ.</b>	0	2	0	0	0	2	0.0	6.3	0.0	0.0	0.0	1.3
<b>Total absentees</b>	66	32	23	16	17	154	32.0	23.2	14.5	12.1	14.0	20.4
<b>Total number of full-time students</b>	206	138	159	132	121	756						
<b>Rural Areas</b>												
<b>Illness</b>	5	9	10	13	2	39	11.1	20.0	22.7	32.5	11.1	20.3
<b>Financial problem</b>	8	5	1	0	0	14	17.8	11.1	2.3	0.0	0.0	7.3

	Number of Observations					Percentage						
	Expenditure Quintiles					Expenditure Quintiles						
<b>Transport problem</b>	2	0	0	0	0	2	4.4	0.0	0.0	0.0	0.0	1.0
<b>Working</b>	0	0	0	1	0	1	0.0	0.0	0.0	2.5	0.0	0.5
<b>Home duties</b>	0	0	0	1	0	1	0.0	0.0	0.0	2.5	0.0	0.5
<b>Not worth</b>	3	2	1	2	0	8	6.7	4.4	2.3	5.0	0.0	4.2
<b>Holiday</b>	16	11	11	14	5	57	35.6	24.4	25.0	35.0	27.8	29.7
<b>Baby sitting</b>	0	1	0	0	0	1	0.0	2.2	0.0	0.0	0.0	0.5
<b>Other</b>	11	17	21	9	11	69	24.4	37.8	47.7	22.5	61.1	35.9
<b>Total absentees</b>	45	45	44	40	18	192	21.5	20.2	22.0	21.2	15.3	20.4
<b>Total number of full-time students</b>	209	223	200	189	118	939						

**Appendix 19: Reasons for Non-availability of textbooks among primary & secondary school students**

<b>Expenditure quintiles</b>						
<b>Male Students</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Total</b>
<b>(Figures in percent)</b>						
<b>Unavailable</b>	0.0	6.3	16.7	15.4	0.0	5.2
<b>Too expensive</b>	94.4	78.1	50.0	84.6	80.0	83.6
<b>Library</b>	0.0	3.1	0.0	0.0	0.0	0.9
<b>Lost</b>	0.0	3.1	16.7	0.0	0.0	2.6
<b>Will buy</b>	5.6	0.0	0.0	0.0	0.0	2.6
<b>Other</b>	0.0	3.1	16.7	0.0	0.0	2.6
<b>No answ.</b>	0.0	6.3	0.0	0.0	20.0	2.6
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0
<b>Females</b>						
<b>(Figures in percent)</b>						
<b>Unavailable</b>	5.7	0.0	0.0	18.2	0.0	4.6
<b>Too expensive</b>	91.4	100.0	84.6	72.7	66.7	90.0
<b>Library</b>	0.0	0.0	0.0	9.1	0.0	0.8
<b>Will buy</b>	1.4	0.0	0.0	0.0	33.3	2.3
<b>Other</b>	0.0	0.0	15.4	0.0	0.0	1.5
<b>No answ.</b>	1.4	0.0	0.0	0.0	0.0	0.8
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0
<b>Urban students</b>						
<b>(Figures in percent)</b>						
<b>Unavail.</b>	5.4	0.0	0.0	16.7	0.0	4.7

	Expenditure quintiles					
	1	2	3	4	5	Total
<b>Too expensive</b>	89.3	81.0	69.2	75.0	60.0	82.2
<b>Library</b>	0.0	4.8	0.0	8.3	0.0	1.9
<b>Will buy</b>	3.6	0.0	0.0	0.0	40.0	3.7
<b>Other</b>	0.0	4.8	30.8	0.0	0.0	4.7
<b>No answ.</b>	1.8	9.5	0.0	0.0	0.0	2.8
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0
<b>Rural students</b>						
<b>(Figures in percent)</b>						
<b>Unavail.</b>	1.5	4.9	16.7	16.7	0.0	5.0
<b>Too expensive</b>	95.6	92.7	66.7	83.3	83.3	90.7
<b>Lost</b>	0.0	2.4	16.7	0.0	0.0	2.2
<b>Will buy</b>	2.9	0.0	0.0	0.0	0.0	1.4
<b>No answ.</b>	0.0	0.0	0.0	0.0	16.7	0.7
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0
<b>Trinidad &amp; Tobago</b>						
<b>(Figures in percent)</b>						
<b>Unavail.</b>	3.2	3.2	8.0	16.7	0.0	4.9
<b>Too expensive</b>	92.7	88.7	68.0	79.2	72.7	87.0
<b>Library</b>	0.0	1.6	0.0	4.2	0.0	0.8

<b>Expenditure quintiles</b>						
	1	2	3	4	5	Total
<b>Lost</b>	0.0	1.6	8.0	0.0	0.0	1.2
<b>Will buy</b>	3.2	0.0	0.0	0.0	18.2	2.4
<b>Other</b>	0.0	1.6	16.0	0.0	0.0	2.0
<b>No answ.</b>	0.8	3.2	0.0	0.0	9.1	1.6
<b>Total</b>	100.0	100.0	100.0	100.0	100.0	100.0

### **Trinidad & Tobago**

**(Figures in absolute numbers)**

<b>Unavail.</b>	4	2	2	4	0	12
<b>Too expensive</b>	115	55	17	19	8	214
<b>Library</b>	0	1	0	1	0	2
<b>Lost</b>	0	1	2	0	0	3
<b>Will buy</b>	4	0	0	0	2	6
<b>Other</b>	0	1	4	0	0	5
<b>No answer</b>	1	2	0	0	1	4
<b>Total</b>	124	62	25	24	11	246

**Appendix 20: Allocation of Education Budget in Trinidad & Tobago, 1985-1994**

<b>Year</b>	<b>Total Allocation in Estimates</b>	<b>Allocation Under Ministry of Education \$</b>	<b>Percentage Allocation Ministry of Education /Total Allocation</b>	<b>Allocation under Development Programme Estimates \$</b>	<b>Actual Expenditure Under Development Estimates \$</b>	<b>Percentage Actual Expenditure/Development Programme Allocation</b>
1985	9,071,051,990	982,823,006	11%	1,350,000	733,099	54%
1986	9,133,587,919	828,311,362	9%	1,300,000	254,371	20%
1987	9,425,000,048	1,005,780,685	11%	103,623,000	40,438,347	39%
1988	7,905,830,085	952,623,746	12%	130,404,000	64,916,990	50%
1989	6,587,763,841	831,057,307	13%	94,200,000	71,320,529	76%
1990	7,069,881,861	844,117,219	12%	92,853,250	61,112,280	66%
1991	7,611,164,672	925,898,272	12%	81,001,000	73,699,504	91%
1992	7,999,518,497	843,391,500	11%	61,100,000	38,773,006	63%
1993	8,410,769,971	797,761,513	9%	40,707,000	30,591,475	75%
1994	10,507,914,868	1,018,094,645	10%	97,185,000	942,029,957	97%

Source: Ministry of Finance.

Appendix 21. Average Score of CXC Examination by Country, 1995.

Country	GNP per capita (US \$)	Total Number of Candidates in Exams	Number of Candidates in Each Exam						Percentage of Candidates in Each Exam						Number of Passing Grades (grade 1+2) by Exam						Percentage of Candidates with Passing Grade (1+2) by Exam						
			Biology	Chemistry	English A	English B	Math	Physics	Biology	Chemistry	English A	English B	Math	Physics	Biology	Chemistry	English A	English B	Math	Physics	Biology	Chemistry	English A	English B	Math	Physics	
			Antigua	6540	831	202	117	465	187	352	123	24.3	14.1	56.0	56.0	42.4	14.8	64	65	239	93	122	47	31.7	55.6	51.4	49.7
Anguilla	7000	203	29	8	57	24	52	7	14.3	3.9	28.1	28.1	25.6	3.4	9	1	26	19	13	0	31.0	12.5	45.6	79.2	25.0	0.0	
Barbados	6710	6572	724	572	2419	1201	1660	492	11.0	8.7	36.8	36.8	25.3	7.5	310	274	1233	803	803	274	42.8	47.9	51.0	66.9	48.4	55.7	
Belize	2630	2126	267	177	1064	339	864	142	12.6	8.3	50.0	50.0	40.6	6.7	74	75	405	178	311	60	27.7	42.4	38.1	52.5	36.0	42.3	
Dominica	2760	1444	151	96	668	70	452	102	10.5	6.6	46.3	46.3	31.3	7.1	74	46	274	44	142	54	49.0	47.9	41.0	62.9	31.4	52.9	
Grenada	2980	2220	316	199	926	309	456	146	14.2	9.0	41.7	41.7	20.5	6.6	113	88	258	149	155	70	35.8	44.2	27.9	48.2	34.0	47.9	
Guyana	590	7214	756	573	5003	623	4141	484	10.5	7.9	69.4	69.4	57.4	6.7	153	180	582	232	795	159	20.2	31.4	11.6	37.2	19.2	32.9	
Jamaica	1510	36774	2791	1821	16104	5696	14917	1766	7.6	5.0	43.8	43.8	40.6	4.8	841	836	4465	2811	4176	630	30.1	45.9	27.7	49.4	28.0	35.7	
Montserrat	6290	177	35	18	58	0	72	0	19.8	10.2	32.8	32.8	40.7	0.0	16	15	39	0	23	0	45.7	83.3	67.2	0.0	31.9	0.0	
St Kitts/Nevis	5170	758	89	58	318	132	171	37	11.7	7.7	42.0	42.0	22.6	4.9	35	32	157	75	64	13	39.3	55.2	49.4	56.8	37.4	35.1	
St Lucia	3200	2868	402	200	1435	272	1140	213	14.0	7.0	50.0	50.0	39.7	7.4	177	125	526	160	471	110	44.0	62.5	36.7	58.8	41.3	51.6	
St Vincent	2280	2019	107	93	470	218	490	58	5.3	4.6	23.3	23.3	24.3	2.9	52	59	193	154	193	32	48.6	63.4	41.1	70.6	39.4	55.2	
Trinidad & Tobago	3720	33866	4841	3661	19482	4105	17658	2825	14.3	10.8	57.5	57.5	52.1	8.3	2124	1728	7145	2483	6108	1423	43.9	47.2	36.7	60.5	34.6	50.4	
Turks & Caicos	6000	239	17	9	87	31	54	14	7.1	3.8	36.4	36.4	22.6	5.9	5	3	34	15	14	2	29.4	33.3	39.1	48.4	25.9	14.3	
TOTAL		97722	10727	7602	48556	13207	42479	6409							4047	3527	15576	7216	13390	2874							

Source: Caribbean Examinations Council, 1995.



Appendix 22: Average Student Ability Scores in the IEA International Study on Reading Literacy

Population A: Upper Primary			Population B: Lower Secondary		
Country	Composite development index	Average student Ability Scores	Country	Composite development index	Average student Ability Scores
Belgium/Fr	3.41	507	Belgium/Fr	3.41	481
Canada/BC	3.66	500	Botswana	1.63	330
Cyprus	2.74	481	Canada/BC	3.66	522
Denmark	3.64	475	Cyprus	2.74	497
Finland	3.89	569	Denmark	3.64	525
France	3.48	531	Finland	3.89	560
Germany/E	3.44	499	France	3.48	549
Germany/W	3.65	503	Germany/E	3.44	526
Greece	2.74	504	Germany/W	3.65	522
Honk Kong	2.85	517	Greece	2.74	509
Hungary	2.51	499	Honk Kong	2.85	535
Iceland	3.98	518	Hungary	2.51	536
Indonesia	1.06	394	Iceland	3.98	536
Ireland	3.09	509	Ireland	3.09	511
Italy	3.13	529	Italy	3.13	515
Netherlands	3.65	485	Netherlands	3.65	514
New Zeland	3.25	528	New Zeland	3.25	545
Norway	4.15	524	Nigeria	0.51	401
Portugal	2.31	478	Norway	4.15	516
Singapore	2.78	515	Philippines	1.28	430
Slovenia	2.97	498	Portugal	2.31	523
Spain	2.79	504	Singapore	2.78	534
Sweden	4.2	539	Slovenia	2.97	532
Switzerland	4.29	511	Spain	2.79	490
Trinidad/Tobago	2.64	451	Sweden	4.2	546
United States	3.67	547	Switzerland	4.29	536
Venezuela	2.23	383	Thailand	1.75	477
			Trinidad/Tobago	2.64	479
			United States	3.67	535
			Venezuela	2.23	417
			Zimbawe	1.65	372

Source: Elley, 1992.

