Progress in International Reading Literacy (PIRLS) 2006
The Trinidad and Tobago Experience

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This document was prepared for the Inter-American Development Bank (IDB) as a contribution to the education policy dialogue held in Barbados 2-3 December 2008. It provides the rationale for the participation of Trinidad and Tobago in the PIRLS 2006 study, its input into development of test instruments, the impact of participation on local capacity to conduct assessments, the technical support provided and the use/intended use of the results obtained.

1. Background

Increasing globalization and interest in global mandates, including Education For All (UNESCO, 2000) together with a shift in emphasis in assessing the quality of education from a concern with inputs (such as student participation rates, physical facilities, curriculum materials, and teacher training) to a concern with outcomes (such as the knowledge and skills that students have acquired as a result of their exposure to schooling) (Kellaghan and Greaney 2001b). The focus on outcomes of schooling reflects a view that in a globalized world, knowledge is a key strategic resource, thus the availability of human resources is critical in determining the rate of human development. In this scenario, knowledge and skills is another commodity, its development, another investment and the purpose of education becomes winning the global competition.

Evidence based on national tests/assessments in the Caribbean and Latin America indicate that many students leave school without the prerequisite numeracy and literacy skills are not well prepared for the transition from primary to secondary education and might have later on

difficulties in finding gainful employment(Murillo, 2007; EFA Global Monitoring Report, 2006). The introduction of universal secondary education in many countries has compounded the problem associated with numeracy and literacy in secondary schools as most of the schools are not well prepared to assist these underperforming students. The result is many graduates leaving school not well prepared for entry into workforce or continuation in further education.

In order to address the knowledge and skills gap, and ensure increased access and improved learning outcomes in an increasingly globalized environment, measures to acquire, generate, apply and disseminate knowledge must be put in place. The assessment of knowledge and skills of individuals in relation to global standards through participation in national and international assessments is one such measure identified to enable countries to respond effectively.

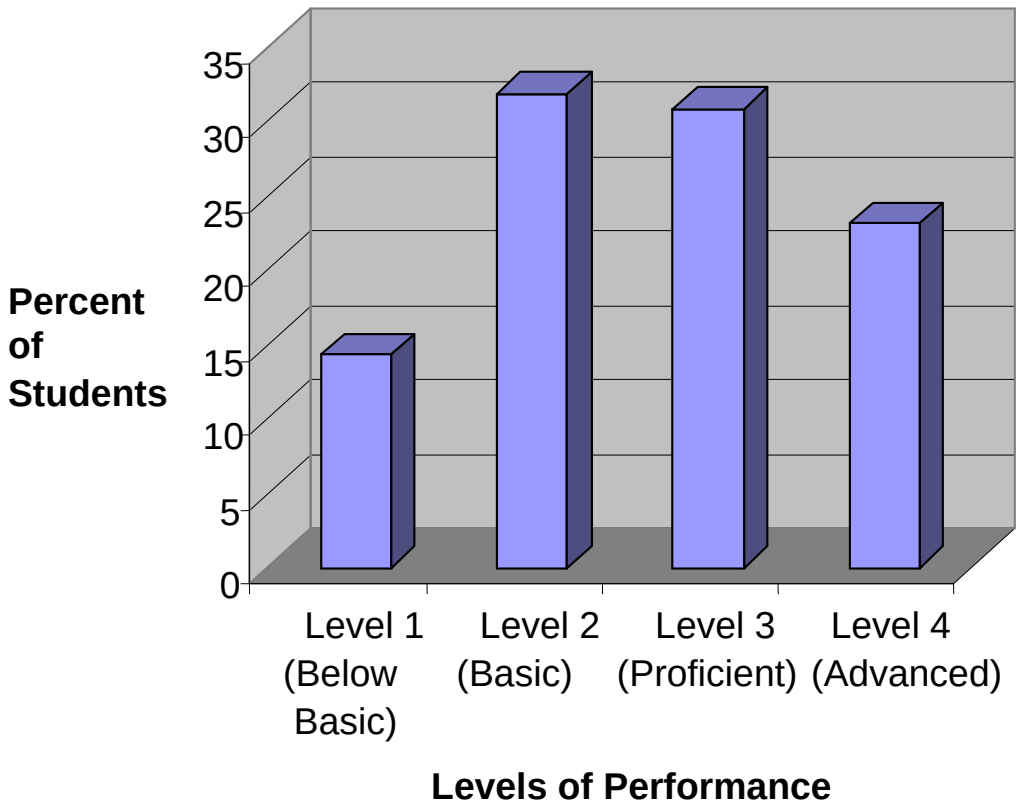
2. Why did Trinidad and Tobago Participate in PIRLS 2006?

The government of Trinidad and Tobago cognizant of its commitment in the education system to achieving the Millennium development goals, the EFA goals and its vision 20:20 goal for developed country status by the year 2020 has positioned human resource development as the platform for taking Trinidad and Tobago to developed country status (The Government of the Republic of Trinidad and Tobago, 2002; 2004). Quality Education has been ranked as one of the top national priorities with a commitment to the establishment of a seamless education system whereby students transit from Early Childhood Care and Education (ECCE) through primary and secondary to tertiary level (Government of the Republic of Trinidad and Tobago, 2004). Concomitant with the government's focus on quality is the shift from measuring quality in

terms of inputs to that of outcomes especially in literacy, numeracy and essential life skills

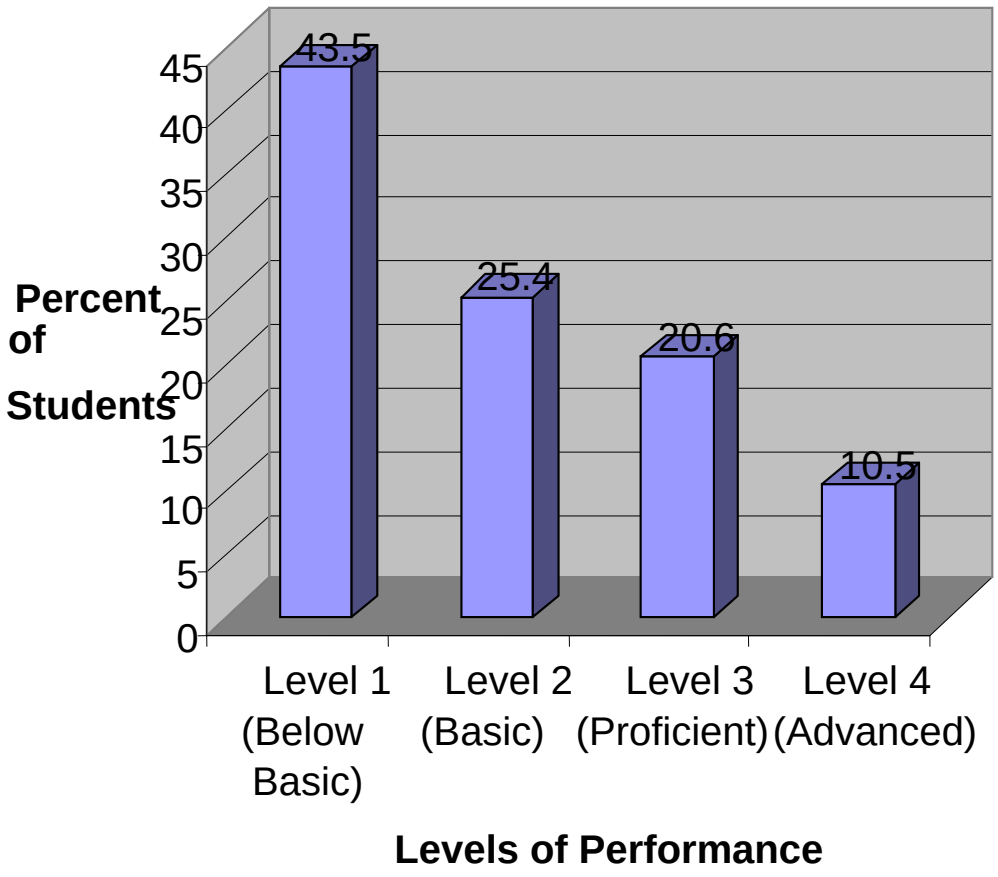
Results from National Test Standard 3 (grade 5) students in Mathematics and Language Arts show that many students are not meeting the requirements for numeracy and literacy (Figures 1 & 2).

Figure 1- Performance of Standard 3 Students (Grade 5) in National Test - Mathematics 2005



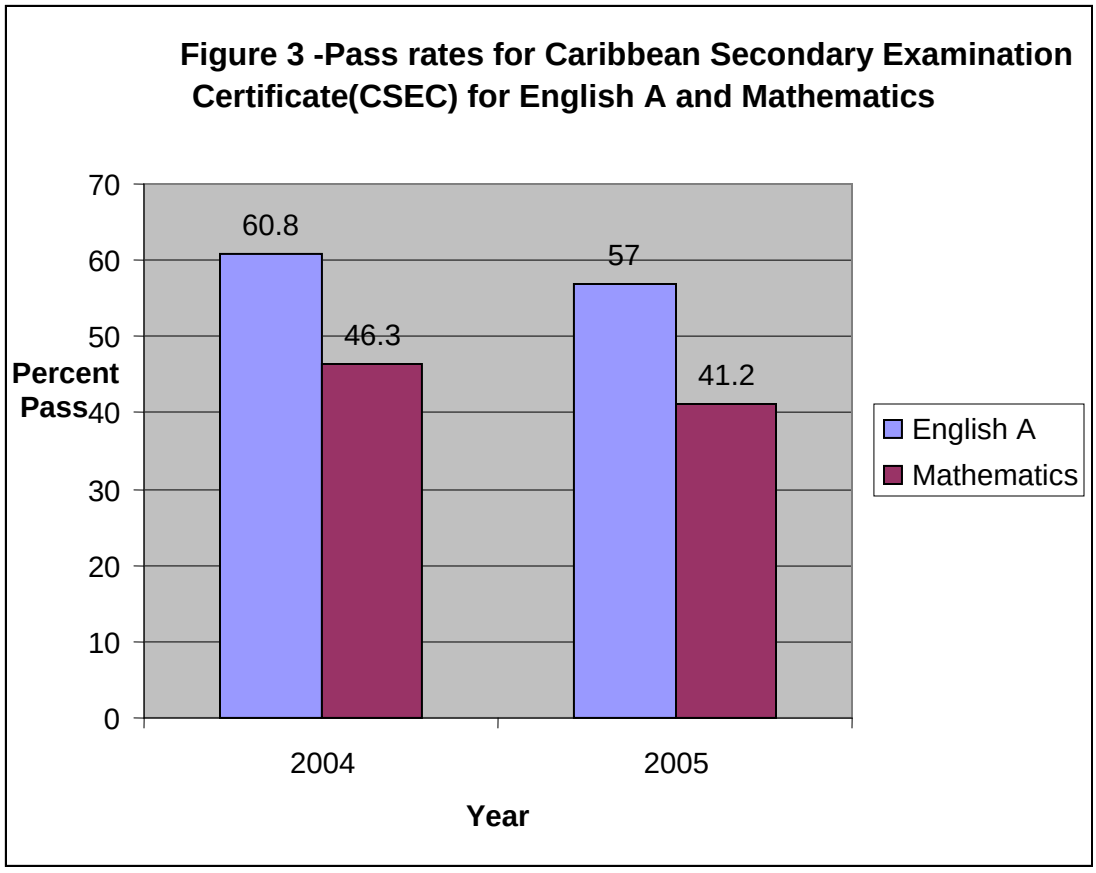
Source: Report on National Test 2005, Ministry of Education, Trinidad and Tobago

Figure 2 - Performance of Standard 3 Students (Grade 5) in National Test - Language Arts 2005



Source: Report on National Test 2005, Ministry of Education, Trinidad and Tobago

The introduction of Universal Secondary Education (USE) in Trinidad and Tobago in 2000 created an additional challenge to the education system as teachers are often not well prepared to deal with students who did not have the pre-requisite literary and numeracy skills. Figure 3 – Shows the pass rates (grades I-III) for Mathematics and English A for 2004 (higher rate prior to USE) and 2005 when the first cohort of students entering secondary schools in 2000 under USE wrote examinations.



Source: Ministry of Education, Trinidad and Tobago.

Note: In 2005, all students entering secondary schools in 2000 did not write CSEC as some were given an additional year.

While the extent of the deficits in literacy and numeracy is clear, in the absence of systematic research, the ability of educational systems to respond to these deficits is limited as the reasons for student underachievement is not well understood.

National Assessments vs. International Assessments

For educational systems to respond effectively to issues of underachievement and quality, answers to questions such as those listed below are needed:

a. How well are students learning in the education system (with reference to general expectations, aims of the curriculum, preparation for further learning, or preparation for life)?

b. Does evidence indicate particular strengths and weaknesses in students' knowledge and skills?

c. Do particular subgroups in the population perform poorly? Do disparities exist, for example, between the achievements of boys and girls or different regions of the country?

d. What factors are associated with student achievement? To what extent does achievement vary with characteristics of the learning environment (for example, school resources, teacher preparation and competence, and type of school) or with students' home and community circumstances?

e. Are national standards being met in the provision of resources (for example, textbooks, teacher qualifications, and other quality inputs)?

f. Do the achievements of students change over time? This question may be of particular interest if reforms of the education system are being undertaken. Answering the question requires carrying out assessments that yield comparable data at different points in time (Kellaghan and Greaney 2001b, 2004).

In Trinidad and Tobago, while current national tests can provide answers to the first three questions, procedures which allow for linking of student achievement with factors that may impact on student performance need to be introduced.

Participation in international cooperative studies can fill this gap by providing empirical data about the quality of a nations' education system as viewed from the perspective of a global community. Comparative analysis can extend the national picture by providing a large context within which to interpret national results. These can help policymakers reassess their programmes, revise and examine existing practices in curricular provision, textbooks, teacher preparation, school organization and instructional practices.

Other Issues Considered

To fully benefit from participation in International assessments, a number of issues were considered (Kellaghan & Greaney, 2008).These include:

- The demands of meeting deadlines – Are communication and administrative systems for meeting deadlines for the different activities in place. The current systems in place for national were considered to be adequate for conducting the study.
- Comparability of population and samples in different countries - The problem is most obvious where the age of enrolling in schools, retention and dropout rates differ from one country to another. Current sampling techniques employed by IEA addresses this issue.
- National and PIRLS Literacy Framework – Although curricula across the world have common elements, particularly at the primary-school level, considerable differences between countries also exist in what is taught, when it is taught, and what standards of achievement are expected. For results to be meaningful the elements of the PIRLS framework and National framework should be examined as this will impact on the results obtained.

- Variation in test score performance - is an important factor if one is to describe adequately the achievements of students in the education system and determine correlates of achievement. Carefully designed tests must ensure a relatively wide distribution of test scores. If the test is too difficult, limited information would be available since the majority of students will be in the lowest group.

Learning to read and write is critical to a child's success in school and later in life. One of the best predictors of whether a child will function completely in school and go on to contribute actively to society is the level to which a child progresses in reading and writing. Although reading and writing abilities continue to develop throughout the life span, the early childhood years from birth through 8 years old are the most important period for literacy development. The decision to participate in PIRLS therefore provided the opportunity to address literacy development in the primary school system through the provision of high quality data which can inform current policy, practices and curricular provisions in the education system. This approach is expected to provide a platform for important in other subject areas.

3. Resource requirements for the study.

Participating countries are required to fund and coordinate implementation of the study in their country. These studies have been coordinated by universities, ministries of education or by assessment/research units. In Trinidad and Tobago this activity was located in Educational Research and Evaluation Division (DERE) in the Ministry of Education. Existing personnel resources and systems within the various divisions in the Ministry of Education were utilized in the conduct of the study.

There are a number of tasks associated with the conduct of a field trial and the main survey. These include:

- Contacting schools and sampling classes
- Preparing materials
- Administration of tests
- Scoring constructed- response items
- Creation of databases - Data Entry and Verification
- Preparation of national reports

3.1 Personnel

In order to complete these tasks and meet the PIRL'S standards for the study, adequate staffing for national centers is necessary.

National Research Coordinator

The National Research Coordinator (NRC) is expected to coordinate the implementation of the study in each country. Two officers involved with the development and implementation of the national tests from the Educational Research and Evaluation Division coordinated the study.

Data Manager

An IT Specialist with experience in coding, data entry and data management was assigned to this task.

Data Entry Staff

Data entry for PIRLS was outsourced. A company used by the DERE for data capture for national tests was utilized for data capture. Data capture and cleaning was supervised by the Data Manager.

Translators/Translation Reviewers
English versions of all test instruments were used in Trinidad and Tobago. Adaptations to these were carried out by officers from the DERE and the Division of Curriculum Planning and Development.

Office Staff
Office Staff from the DERE provided support for the study.

School Coordinators and Test Administrators
Principals from selected schools performed the role school coordinators for both the field tests and main survey. Classroom teachers conducted the testing sessions in schools.

Scorers
Teachers with experience in scoring of National tests were trained and utilized for the scoring of constructed response items.

The use of existing personnel within the Ministry of Education in Trinidad and Tobago to carry out the PIRLS 2006 study required that the activities had to be well coordinated with other assessments carried out by the DERE.

3.2 Computers, Software and Stationary

The computers and software in the DERE were utilized for this project. Stationary and office supplies were covered under the provision for national examinations.

3.3 Other Costs

The major cost for the PIRLS study were payment for printing materials, data capture, and attendance at of NRC's at meetings. Approval for

funding for these items was approved by the Cabinet of Trinidad and Tobago.

4. Input into Tests

Concerns have been expressed by some researchers that the test development process in international studies tend to reflect the power relations between partners and inevitably some countries dominate while others are constantly outliers (Reddy, 2005 ; Linn, 2004). Instrument design in PIRLS however, has been on the basis of consensus of participating countries. In the test development each participating country Trinidad and Tobago was provided with the opportunity to submit material (passages) to be used in the study, participate in passage selection, item writing, review of materials and final selection of passages and items for the study. In addition, test materials were adapted to suit the local context.

While the more developed countries participated in the study than developing countries the extent to which this impacted on the test development and achievement is uncertain.

5. Impact on local Capacity to Assess Student Learning

National Research Coordinators attend meeting organized by the IEA and are involved in the following activities in preparation for the conduct of the study:

- Test design
- Sampling
- Item writing
- Conduct of the survey
- Adaptation / Translation and verification
- Scoring

- Quality control
- Data Entry and Management
- Data analysis

Involvement in the study provided exposure to persons involved in the conduct of the study in assessment procedures used coordinated by leading experts in the various fields. This can provided the impetus for re-examining and validating some of the existing practices and the adoption of new practices. Yearly national tests are written in Trinidad and Tobago in Mathematics, Language Arts, Science and Social Studies at the primary school. The Ministry of Education has made changes to their test administration manual based on the PIRLS guidelines and has adopted the PIRLS standard for packing of national test scripts (3 extra per class).

The current practice in the Caribbean region including Trinidad and Tobago and is the use of classical test theory to develop tests. While this approach is still relevant, the use of IRT provides the opportunity for equating of test items in addition to improving the local capacity to conduct trend studies. The Ministry of Education has scheduled the development of capacity in IRT methodology with the aim of improving its internal national assessment procedures.

Sample Selection

Selection of the sample for PIRLS 2006 provided exposure to the sample design which consists of a set of specifications for the target and survey populations, sampling frames, survey units, sample selection methods and sample sizes. One option which is currently being considered is the use of a sample rather than a census for the national test.

Technical support for the various activities was readily available and provided through out the study. Support for selection of the sample for the study was provided by Statistics Canada, test preparation by Boston College while the Data Processing Centre (DPC) in Germany supported the data collection/entry process through training in software provided by the IEA.

6. Results from PIRLS 2006 – Use of Results

The overall reading literacy achievement average for Trinidad & Tobago was 436 points, significantly below the PIRLS Scale Average of 500. While the majority of countries had approximately a 250-point difference between the 5th and 95th percentile, the difference in Trinidad and Tobago indicated a much wider spread of student's scores (Variance) with a 340 point between the top group and those at the 5th percentile.

Trinidad & Tobago's average score for literary purposes was 434 while that for informational purposes was 440. Trinidad & Tobago had a small but significantly higher achievement in reading for informational purposes compared to literary purposes. On two reading achievement scales for the reading processes - the **retrieving and straightforward inference scale** (438) and the **interpreting, integrating, and evaluating scale** (437) thee was no significance difference.

In addition, the study found, the difference average reading achievement for both girls (451) and boys (420) in Trinidad and Tobago was higher than the international average difference of 17 points. Only three countries had larger gender differences.

The problem of reading literacy in the education system in Trinidad and Tobago was highlighted from results of National tests and some

measures aimed at addressing this issue were implemented for example, the developments of a National Reading Policy and expansion of Centre for Excellence for Teacher Training (CETT) programme in the primary are two such measures. The move to universal ECCE is another such measure which is expected to contribute to improvement of reading literacy. The PIRLS 2006 results, however, provides the Ministry of Education with data that can facilitate the re-examination of current policies, programmes and practices within an international context and also provide a basis for the introduction of new policies.

Review of the curriculum framework for reading.

The results also indicate that a significant number of students in Trinidad and Tobago are not meeting International standards for reading literacy. In Trinidad and Tobago, the Ministry of Education develops curriculum guides, recommends textbooks and has jurisdiction over all government and government assisted schools. In addition, comparison of the framework for reading literacy in Trinidad and Tobago is broader than the with the PIRLS framework. This suggests that there is a lack of alignment between the intended curriculum and the "attained curriculum" or what students learn. This can also result from system and teacher expectation being below the international standards. The review of the framework for literacy in the primary school curriculum and its organization for the teaching of reading is therefore necessary. The review should also include the following:

- Instructional time for reading
- Emphasis on reading
- Organization of classes for reading
- Gender differential in reading Literacy
- Strategies for teaching of reading and assisting students with difficulties.
- Range Materials used in the teaching of reading

- Literacy standards for each level in the primary school

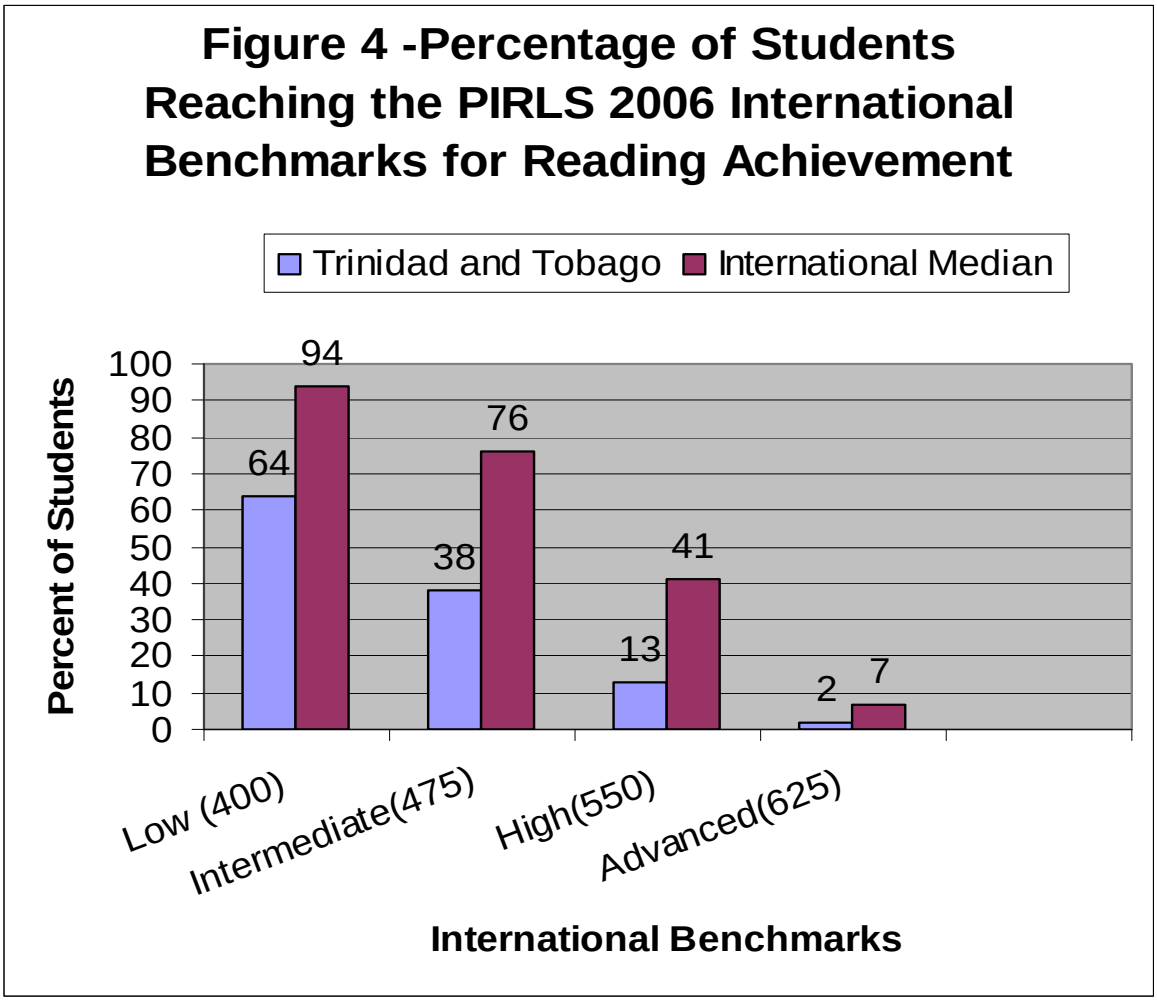
These should be reviewed in the context of best practices in top achieving countries in the PIRLS such as Hong Kong SAR, Singapore and Canada. This is one of the consultancies scheduled under the review of the primary school curriculum as part of the seamless education project. While the review of the PIRLS data is currently ongoing, the following are some of the areas under consideration:

Baseline for Reading at a Key Developmental Stage

The results from PIRLS therefore provide a baseline for reading literacy at Standard 3 from which future improvements can be measured since the PIRLS allows monitoring of trends.

International Benchmarking

PIRLS measures achievement at a point where typically children are moving from learning to read to reading to learn. This is an important benchmarking point for reading literacy. Figure 4 below shows the percentage of students in Trinidad and Tobago reaching the PIRLS 2006 International Benchmark compared to the International Median. The PIRLS benchmarks provide an indication of what students at a particular benchmark can do for example at the low international benchmark display basic reading skills. They were able to recognize, locate, and reproduce explicitly stated details from informational texts, particularly if the details were at the beginning of the text. They were also able to answer some items requiring straight forward inferences.



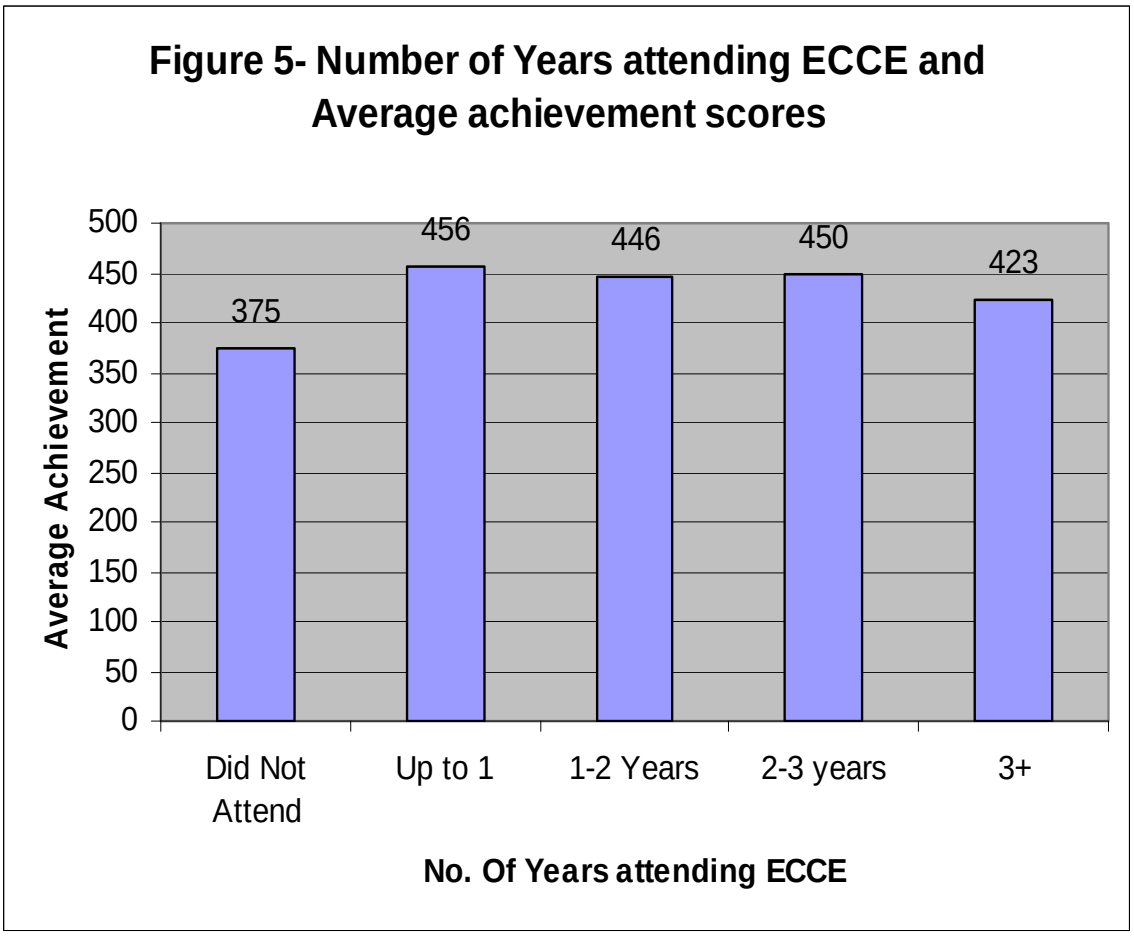
Data Source: IEA Progress in Reading Literacy Study (PIRLS) 2006

Validation of National Policy

Early Childhood Care and Education

The results of PIRLS 2006 found a positive relationship between students' reading achievement and the amount of time children participated in ECCE. In Trinidad and Tobago, there was a 75 point difference between children who attended preprimary education between 2-3 years and those who did not attend compared to an international average of 50 points (Mullis et. al., 2006). The government of Trinidad and Tobago in order to facilitate a seamless education system has embarked on a programme for universal early childhood care and

education by 2010 through the construction of new centers to reflect the highest quality design and outfitted in keeping with the teaching, learning and development requirements for cognitive and social development of preschoolers and supported by appropriate curricula and teacher training. This is consistent with to the move to increase both access and quality of ECCE in Trinidad and Tobago.



Data Source: IEA Progress in Reading Literacy Study (PIRLS) 2006

Provision of textbooks/educational resources

The PIRLS results showed significant difference between performance of students' where there was a high index of home educational resources (more than 100 books, more than 25 children's books, at least 3-4 educational aids and where at least one parent completed university

education) and those students who came from homes with a low index (less than 25 books, less than 25 children's books, no more than two educational aids and where parents had not completed secondary education). The difference in performance in Trinidad and Tobago between these two groups was 135 points.

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