

STUDENTS' ACHIEVEMENT, STUDENTS'
PERCEPTIONS, AND PREDICTORS OF SUCCESS:
A FURTHER LOOK AT THE NATIONAL TEST OF
TRINIDAD AND TOBAGO

RESEARCH REPORT

by

June George^a, Orlena Broomes^a, Peter Smith^b and John O. Anderson^c

^a School of Education, University of the West Indies, St. Augustine Campus

^b Ministry of Education, Trinidad and Tobago

^c University of Victoria, Canada

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This research report is based on the 2009 National Test results in Trinidad and Tobago in the subject areas of Language Arts and Mathematics. It is the sequel to an earlier study by Anderson, George and Herbert (2009) which analysed the 2006 National Test results, also in Language Arts and Mathematics. Both studies sought to analyse educational indicator data comprising results from the National Test for Standard 3 students (aged 9-10 years) in ways that identify relationships of student achievement to factors involving students, schools and the home. The study was conducted during 2009-2010 and used the results of the 2009 administration of the National Test in Language Arts and Mathematics, as well as questionnaire responses obtained during that period. Statistical analyses included multiple regression analysis.

The results indicate that in the 2009 administration of the National Test, girls scored higher than boys in both Language Arts and Mathematics. Generally, both boys and girls in all school types were satisfied with the care and attention they received from both teachers and parents as they engaged in their educational pursuits. The regression analysis results indicate that achievement in Language Arts is positively related to the extent to which students see themselves as competent readers, have a positive attitude towards school and school work, and perceive their teachers as caring about their performance in school work. The predictors for Mathematics achievement were similar to those described above for Language Arts, however, there was a fifth predictor in the model for mathematics – students' view of mathematics.

The results suggest that policy makers need to consider planning for the development of students' level of satisfaction with their school environment and also teachers' ability to be supportive of and encouraging to their students as possible means of enhancing student performance, at least at the Standard 3 level.

Introduction

Standardised testing, where test-takers all take the same test at the same time under the same conditions, and where the tests are scored in a consistent manner, is the main method for assessing students in the primary and secondary levels in the Caribbean and has been so since early colonial days. Over the years, the composition and administration of the tests have changed but essentially they remain high-stakes tests that measure a student's ability to advance through both primary and secondary school, and eventually into post-secondary education and/or the workplace.

In the Caribbean, as in other places in the developing and developed world, there has been much debate about standardized testing. Standardised testing can only test one moment in time and does not take into account many of the factors that can impact on a student's performance. A student's performance can be related to both in-school and out-of-school factors. For example, factors such as teaching to the test, extra tuition, the student's family structure and socioeconomic status, the school attended, and teacher instruction have all been found to impact on students' achievement levels (Rothstein et al., 2010). There is a scarcity of empirical research in the Caribbean on standardised testing and its impact, however, anecdotal comments and scholarly opinions suggest that standardised testing has supported a societal status quo based on economic and social status (De Lisle, Seecharan, & Ayodike, 2010), and has maintained a mismatch between the taught curriculum and assessment (Manning, n.d.).

Outside the Caribbean, a study on standardized testing by Paulson and Marchant (2009) used language arts and mathematics test data from the 2001 Scholastic Aptitude Tests (SAT) and the Indiana State Test of Educational Progress and examined the reporting and interpretation of assessments. They questioned the validity of measuring aggregate scores and comparing classroom scores over time where there are different sample groups of students and perhaps different teachers and other classroom changes. In addition, Paulson and Marchant (2009) found that disaggregating scores might show the effect of some demographic factor for example, gender, or household structure while ignoring the impact of the interaction of other social variables, parent expectations and socio-economic factors. This study suggests that conclusions regarding the purpose and impact of standardised assessment might not always be straightforward or consistent from one situation to another.

On the other hand, while standardised testing might have faults such as those outlined above, it is still considered to be useful as evidenced by its continued use for measuring educational achievement at all levels. It is one of the few methods available for obtaining an unbiased, comparative assessment of student learning (of the taught curriculum) at various points in time and statistical examination of the results can provide the evidence to support policy decision-making. The results of standardised testing can also serve as an assessment of teachers' performance in the classroom and provide information to parents about their children's performance.

There are a number of international assessment programmes that allow for comparison of student achievement across countries. The Progress in International Reading Literacy Study (PIRLS) reports on trends in reading literacy achievement of fourth grade students and provides baseline data for new countries participating in the assessments. The Programme for International Student Assessment (PISA) is a triennial international survey which aims to evaluate education systems worldwide by testing the skills and knowledge of 15-year-old students. PISA reports trend data from standardised scores in relation to other factors to inform the economic development of countries. Similarly, (though not necessarily in support of

standardised testing), smaller national studies on reading, writing and mathematics (Anderson, George, & Herbert, 2009; Broomes, 2013) have analysed specific national standardised test scores in relation to other factors to inform educational policy decisions.

The literature on standardised testing in the Caribbean is relatively sparse. Literature from other jurisdictions that explores the relationship between students' academic performance and other factors mentioned can be rather nuanced. For example, with respect to gender, the results of the 2012 PISA assessments found that 15 year old girls outperformed same-age boys in reading in almost every high performing country and for the most part only boys were in the low-performing group in reading. In contrast in most countries, girls were absent from among the high performers in mathematics. The PISA assessment found that the gender difference in mathematics was significantly in favour of boys with some exceptions and variation in the extent of the differences (OECD, 2014).

In another example, Rowe (1995) conducted a longitudinal study, over a three year period, of 5000 students from over 100 elementary and secondary schools in Australia. The study of the Grades 1, 3, 5, 7, and 9 students used results of batteries of criterion-referenced reading tests and self-reported perceptions to explore several student and school level factors, including whether there was a relationship between reading achievement and student gender, student attitude towards reading, reading activity at home and attentiveness in the classroom. The study found that the student's gender had a very small impact on reading achievement. The study also examined whether, in the first instance, home factors impacted on student attitude and classroom attentiveness which in turn impacted on reading achievement. The study found that attentiveness in the classroom was the strongest predictor of reading achievement; its percentage contribution to the variance increased across the grades ranging from 13 percent with the youngest students to 23 percent with the oldest secondary school students. Student attitude towards reading and student reading activity at home were also positive contributors towards reading achievement. The use of structural equation modelling determined that there was a strong interdependence between attitudes towards reading and reading activity at home.

Similarly, Akey (2006) explored the hierarchy of associations leading to achievement. The study hypothesised that supportive relationships with teachers, clear and high expectations for achievement and behaviour, and high quality teaching influenced student engagement and perceived competence, which in turn promoted achievement in reading and mathematics. Akey analysed three years of achievement data for 449 high school students from an urban school district in the United States and found that students who perceived themselves to be competent readers had higher achievement. The influence of engagement was more complex. Since prior achievement was also a significant factor related to perceived competence, Akey concluded that high achievement on reading and mathematics assessment tests prompted students to see themselves as able learners which in turn, promoted more reading and mathematics success.

Over the past years, studies such as that by Klinger, Shulha, and Wade-Woolley (2009) have sought to understand why persistent gender differences in literacy achievement occur in English Language schools in Ontario and factors that can reduce these gaps. Klinger et al. investigated the educational policies and resulting teacher and school initiatives and practices that are associated with gender variability in literacy achievement. The Canadian study examined the results of the Ontario Education Quality and Accountability Office (EQAO) assessment and the survey data of elementary schools, as well as interview data from 13 case-study schools, seven having a small gender gap and six having a large gender gap, to find student and school factors associated with literacy achievement. They found that the largest differences were the

gaps between boys and girls rather than between schools (that is the difference between those schools with high gender gaps and those with low gender gaps). The study concluded that boys reported less reading at home, were less likely to be involved in artistic endeavours, and were more likely to be involved in sports compared to girls. Boys also reported less-positive attitudes toward reading and writing, less homework completion and higher use of electronic entertainment. Boys in the low-gap schools were somewhat more likely to play a musical instrument, complete homework and read fiction at home and at school. The school culture in the low-gap schools valued academic achievement for all students along with consistent expectations for literacy achievement and achievement as a whole while also promoting the importance of broader educational goals and individual acceptance. In contrast, principals and teachers in the high-gap schools were now in the process of developing that type of culture.

In summary, the literature cited shows that although there are limitations, test results do show associations between student achievement and student attributes and thus provide useful information that can inform decisions in education.

Background and Purpose of Study

This research report is based on the 2009 National Test results in Trinidad and Tobago in the subject areas of Language Arts and Mathematics. It is the sequel to an earlier study by Anderson et al. (2009) which analysed the 2006 National Test results, also in Language Arts and Mathematics. Both studies sought to analyze educational indicator data comprising results from the National Test for Standard 3 students (aged 9-10 years) in ways that identify relationships of student achievement to factors involving students, schools and the home. The studies are based on the premise (as described above) that strong, empirically-based research, and the development of models of education indicator variables would facilitate better and deeper understanding of the assessment information and lead to better informed policy initiatives and educational programmes.

Specifically, the objective of the study by Anderson et al. (2009) was to investigate the relationship between student achievement on the Language Arts and Mathematics components of the 2006 National Test and the traits of schools, the home, teachers and the student.

As part of their study, Anderson et al. analysed achievement test results in Language Arts and Mathematics linked with the responses of questionnaires administered to students, parents, teachers and principals of Standard 3 classes. The questionnaires were designed to generate information about the school-related behaviours, attitudes and perceptions that could have significant relationships to student achievement, providing the opportunity to conduct research to explore the student, home and school correlates of learning outcomes. Findings from the study by Anderson et al. included the following:

- There were significant differences in the mean performance of female and male students in Language Arts (in favour of females), whereas there were no significant differences between female and male students on Mathematics
- School type showed significant differences on both Language and Mathematics with private primary schools outperforming both government primary schools (effect sizes ≈ 1.0) and denominational primary schools (effect sizes ≈ 0.7) on both Language and Mathematics, and denominational primary schools outperforming government primary schools (effect sizes ≈ 0.3) on both Language and Mathematics.
- There were moderately strong significant correlations between Language and

Mathematics achievement (0.77 overall) and these were relatively consistent across genders and across school types.

Further analyses resulted in the generation of preliminary models which suggested that student and parent traits and perceptions are substantially related to student achievement in the foundational skills of Language Arts and Mathematics as measured by the National Test. The following factors were found to be related to student achievement:

- Reading engagement
- Student self-regard re their own abilities in reading
- Parental encouragement of student engagement with their studies
- Student perception of teacher caring and encouragement
- Parental perceptions of feeling welcomed and engaged with the school.

When aggregated at the school level to yield school traits, school level performance was also found to be strongly related to student and parental factors. (Anderson et al., 2009).

The study presented in this report was prompted by the fact that there were missing data in the 2006 dataset used by Anderson et al. In addition, it was felt that a revision was needed in the student, parent, teacher and principal questionnaires; these had originally been adapted by the Department of Educational Research and Evaluation of the Ministry of Education (DERE) from instrumentation developed by The Consortium on Chicago School Research (2000). Accordingly, a study was planned and executed by a team comprising university and Ministry of Education personnel. The study was conducted during 2009-2010 and used the results of the **2009** administration of the National Test in Language Arts and Mathematics, as well as questionnaire responses obtained during that period. This report examines the following research questions from the study conducted in 2009-2010:

Research Question 1: What are students' views of the nature and efficacy of teacher involvement in their schooling?

- Do these vary between females and males?
- Do these vary across school types?

Research Question 2: What are students' views of the nature and efficacy of parental involvement in their schooling?

- Do these vary between females and males?
- Do these vary across school types?

Research Question 3: What relationships (if any) exist between students' scores on the Language Arts test and their perceptions/feelings about the subject, their teachers, their school, and parental involvement?

- Do these vary between females and males?
- Do these vary across school types?

Research Question 4: What relationships (if any) exist between students' scores on the Mathematics test and their perceptions/feelings about the subject, their teachers, their school, and parental involvement?

- Do these vary between females and males?
- Do these vary across school types?

In addition to addressing these research questions, this report also provides information on achievement levels of students on the Language Arts and Mathematics components of the 2009 National Test.

Methodology

Sampling

The study by Anderson et al. used a random sample of 25% of the schools participating in the National Test. Sampling procedures were improved in the 2009-2010 study where the sample selection procedure was based on the *Progress in International Reading Literacy Study* (PIRLS) sample design. Trinidad and Tobago was a participant in the 2006 administration of PIRLS and officers of the DERE had worked with PIRLS experts to select the sample for that study. The same sample of schools was used for the 2009-2010 study which is the focus of this report. The basic PIRLS sample design consists of two stages. In the first stage, schools are sampled so that the probability of being chosen is proportional to the size of the school. Then, one or two whole classes are chosen from the sampled schools. This procedure yielded a sample of 150 schools with 4,168 students covering all 8 educational districts in Trinidad and Tobago. This represented roughly 25% of the age cohort.

The Instruments

As was the case in 2006, four questionnaires were used in the study conducted in 2009-2010, namely, the *Student Questionnaire*, the *Teacher Questionnaire*, the *Parent Questionnaire*, and the *Principal Questionnaire*. All questionnaires consisted of sub-scales with Likert response formats. The results of the 2006 administration suggested that the questionnaires needed to be revised to make some items clearer and more relevant to the local context and also to make the language more accessible. Accordingly, the 2006 questionnaires were revised by the research team. Revised versions were subjected to review by Standard 3 teachers and university researchers, followed by further revision. At each step of revision, clarity and relevance of the items were the focal points.

For this report, only data from the *Student Questionnaire* are used. This questionnaire was intended to solicit students' views about their reading and writing and mathematics ability and their classroom, school and home experiences with respect to Language Arts and Mathematics. After peer review and initial revisions, the *Student Questionnaire* was piloted in five classes in two primary schools and the data generated used to refine it even further. Samples of revised items for the *Student Questionnaire* are shown below.

Original item	Revised item
How often did you make changes to your story or letter to fix mistakes/errors and improve it?	How often does your teacher give you a second chance to make changes to your story or letter to fix mistakes/errors and to improve on it?
When you write at home, how often did your parent talk to you about what you were writing?	When you write at home, how often do you ask your parent, or an adult for help with what you are writing?

The final version of the *Student Questionnaire*, which provided data for this report, is shown in Appendix A.

Data Collection

The National Test is administered yearly and scored by the Ministry of Education which then generates databases of students' results. Permission was granted to the research team to access the database with achievement data for the 2009 administration of the test for the selected sample.

Questionnaire data were collected soon after the pilot and revision stages had been completed. School district supervisors and principals assisted with distributing questionnaires and collecting completed questionnaires. They were first briefed about the nature and purpose of the research project at a meeting at the School of Education of the University of the West Indies which was conducted by members of the research team in June, 2010. Packages with appropriate quantities of all four types of questionnaires were given to the principals at the meeting and they were asked to ensure that they were completed by the various respondents and returned to their district education office. School supervisors helped the research team to monitor this process and to facilitate the return of the completed questionnaires to the research team. The data collection process was delayed somewhat in Tobago because of logistical problems in setting up the process there, but these were eventually sorted out. The collection of completed questionnaires from district education offices was brought to a close in October 2010.

Completed student questionnaires were received from 2,831 of the 4,168 students targeted in the sample, yielding a return rate of 67.9%. Questionnaire responses were coded and added to the database with achievement data.

Data Analysis and Findings

The statistical software IBM SPSS Statistics was used to perform the analyses for this study. The dataset consisted of the 2,831 students whose questionnaire results were linked to their achievement scores in Language Arts and Mathematics. Descriptive analysis showed that these comprised of 1,378 females and 1,453 males. There were 895 students attending government schools, 1,863 in denominational schools and 73 attending private schools.

The data analysis was conducted in three stages:

Stage 1: Describing students' achievement levels

Descriptive statistics were used to analyse the performance of students on the Language Arts and Mathematics tests.

Stage 2: Describing students' perceptions

Descriptive statistics were used to analyse students' perceptions in Research Questions 1-2:

Research Question 1: What are students' views of the nature and efficacy of teacher involvement in their schooling?

- Do these vary between females and males?
- Do these vary across school types?

Research Question 2: What are students' views of the nature and efficacy of parental involvement in their schooling?

- Do these vary between females and males?
- Do these vary across school types?

Stage 3: Exploring relationships between students' achievement and students' perceptions

Regression analysis was used to explore Research Questions 3 and 4:

Research Question 3: What relationships (if any) exist between students' scores on the Language Arts test and their perceptions/feelings about the subject, their teachers, their school, and parental involvement?

- Do these vary between females and males?
- Do these vary across school types?

Research Question 4: What relationships (if any) exist between students' scores on the Mathematics test and their perceptions/feelings about the subject, their teachers, their school, and parental involvement?

- Do these vary between females and males?
- Do these vary across school types?

Students' Achievement Levels

Descriptive statistics for the (raw score) achievement levels in Language Arts and Mathematics for the responding group by gender and school type are shown in Table 1. Independent t-tests were used to compare the means of the 1,453 male and 1,378 female students and to determine if there was a difference in gender achievement. Analyses were also performed to see if there was a difference in student achievement based on the type of school they attended.

Table 1 shows that in both Language Arts and Mathematics, the female students' achievement was significantly greater than that of the male students. With respect to school type, private schools had the highest means and government schools had the lowest means for both Language Arts and Mathematics. The differences in mean scores for school types were significant on Language Arts for all pairs. For Mathematics, there were significant differences in means for Government/Denominational and Government/Private pairs only, with the Government schools showing the lowest performance in both cases.

Table 1 also shows coefficients for Language-Math correlations. There was a moderately strong correlation between Language Arts and Mathematics achievement overall (0.80) and this correlation was also relatively consistent across genders and school types, ranging from 0.74 to 0.82.

Students' Perceptions of Teacher Involvement

This section presents the results for *Research Question 1:* What are students' views of the nature and efficacy of teacher involvement in their schooling?

- Do these vary between females and males?
- Do these vary across school types?

Section 7 of the Student Questionnaire specifically addressed students' perceptions of the involvement of their teacher in their learning. The mean scores on each of the items in this section are shown in Table 2.

On a 4-point Likert scale (1 = *Disagree a lot*; 4 = *Agree a lot*), all but one item (Item 7c) had a mean score of more than 3.0, indicating that students were positive about their teachers' engagement with their learning. Students gave the highest ratings to Items 7g (M = 3.82), 7e (M = 3.81), and 7f (M = 3.76), all of which addressed the issue of teachers' expectations of high levels of achievement from their students. In other words, these students were of the view that their teachers expected them to take the necessary steps to do well in their school work.

Table 1. Mean Results for National Test 2009 – Language Arts and Mathematics

	n	Language Mean (SD)	Mathematics Mean (SD)	Correlation Language-Math
Total sample	2,831	29.59 (11.51)	31.34 (11.89)	0.80
Gender				
Female	1,378	32.31 (10.70) ^a	32.28 (11.29) ^b	0.80
Male	1,453	27.02 (11.66)	30.45 (12.38)	0.82
School type				
Gov't	895	26.67 (12.18) ^c	28.30 (12.45) ^d	0.81
Denomin- ational	1,863	30.82 (10.97)	32.71 (11.36)	0.79
Private	73	33.95 (9.29)	33.73 (11.51)	0.74

^a Female-Male difference on Language is significant (p=0.000)

^b Female-Male difference on Mathematics is significant

^c School type differences are significant on Language - all pairs

^d School type differences are significant on Mathematics for Gov't/Denominational and Gov't/Private

Table 2. Mean scores on Section 7 of Student Questionnaire: Are you encouraged to do your best in class?

	N	Mean	Std. Deviation
Item 7a: My teacher encourages me to do extra work.	2803	3.32	.979
Item 7b: My teacher praises my efforts when I work hard.	2793	3.49	.839
Item 7c: My teacher cares if I don't do my work in class.	2797	2.94	1.317
Item 7d: My teacher cares if I get low scores in class.	2787	3.04	1.256
Item 7e: My teacher expects me to do my best all of the time.	2805	3.81	.589
Item 7f: My teacher expects me to complete my homework every night.	2800	3.76	.674
Item 7g: My teacher thinks that it is important that I do well in class.	2807	3.82	.571

Independent samples t-tests were used to analyse the data by sex. Mean scores for the perceptions of females emerged greater than those for males on all items (Table 3). Statistically significant differences were found in the means for items 7a, 7b and 7e, suggesting that girls were more assured about their teachers' praise, encouragement, and positive expectations than boys (M = 3.41, M = 3.56 and M = 3.84 respectively compared to M = 3.24, M = 3.42 and M = 3.77 respectively). The effect sizes were calculated for all of these comparisons and were found to be negligible (<0.01) suggesting that although there are statistical differences there are little to no functional differences.

Table 3. Mean Scores on Section 7 by Sex

Sex		item7a*	item7b*	item7c	item7d	item7e*	item7f	item7g
F	Mean	3.41	3.56	2.94	3.06	3.84	3.78	3.83
	N	1366	1359	1363	1358	1364	1362	1366
	Std. Deviation	.922	.782	1.316	1.247	.523	.637	.569
M	Mean	3.24	3.42	2.93	3.02	3.77	3.74	3.81
	N	1437	1434	1434	1429	1441	1438	1441
	Std. Deviation	1.024	.885	1.319	1.265	.644	.706	.573

* Difference significant ($p \leq 0.05$)

The ANOVA analysis of mean scores by school type showed that students in denominational schools gave the highest ratings on all items in this subscale while those in government schools gave the lowest ratings on most items (Table 4). Students in denominational schools were therefore more generally positive about the level of their teachers' encouragement than those in private schools and the latter were generally more positive than those in government schools. The difference in means between the various pairs of school types for both items 7b (*My teacher praises my efforts when I work hard*) and 7c (*My teacher cares if I don't do my work in class*) was not statistically significant. Differences in means for item 7a (*My teacher encourages me to do extra work*) were statistically significant for all pairs of school types with a small effect size (0.02) and differences for all the other items were statistically significant for government and denominational schools only, but with mostly negligible effect size (<0.01).

Table 4. Mean Scores on Section 7 by School Type

School Type		item7a*	item7b	item7c	item7d#	item7e#	item7f#	item7g#
Gov't	Mean	3.19	3.46	2.87	2.91	3.76	3.68	3.78
	N	877	878	879	876	880	879	881
	Std. Deviation	1.056	.857	1.332	1.281	.652	.769	.622
Denominational	Mean	3.41	3.50	2.97	3.10	3.83	3.80	3.84
	N	1853	1842	1845	1838	1852	1849	1853
	Std. Deviation	.918	.829	1.310	1.241	.558	.615	.538
Private	Mean	2.82	3.47	2.97	3.03	3.81	3.74	3.74
	N	73	73	73	73	73	72	73
	Std. Deviation	1.194	.867	1.323	1.247	.544	.787	.708

*Differences are significant for all three pairs of school types ($p \leq 0.05$)

#Difference is significant for Government/Denominational pair ($p \leq 0.05$)

Section 9 of the questionnaire also focused on students' perceptions of their teachers. Here, the items were designed to address the question: *What do you think about the attention and concern shown towards you in class?* This response scale was identical to that for Section 7. Students were very positive in their responses, with all means greater than 3.4 (Table 5). Students' ratings showed that they felt that their teachers were empathetic, discerning (detecting when the students needed help), helpful, and supportive of their efforts.

Table 5. Mean Scores on Section 9 of Student Questionnaire: What do you think about the attention and concern shown towards you in class?

	N	Mean	Std. Deviation
Item 9a: My teacher really listens to what I have to say.	2802	3.43	.868
Item 9b: My teacher helps me to improve if I am behind.	2801	3.73	.655
Item 9c: My teacher notices if I have trouble learning something.	2795	3.59	.754
Item 9d: My teacher is willing to give extra help on school work if I need it.	2799	3.61	.762
Item 9e: My teacher believes that I can do well in school.	2797	3.82	.574

Females tended to rate their teachers higher than their male counterparts (Table 6) but the effect sizes were all negligible (< 0.01).

Table 6. Mean Scores on Section 9 by Sex

Sex		item9a*	item9b	item9c*	item9d*	item9e*
F	Mean	3.48	3.75	3.63	3.64	3.85
	N	1365	1362	1360	1366	1362
	Std. Deviation	.819	.623	.718	.715	.509
M	Mean	3.38	3.71	3.56	3.58	3.79
	N	1437	1439	1435	1433	1435
	Std. Deviation	.909	.683	.785	.803	.628

*Difference significant ($p \leq 0.05$)

The analysis by school type (see Table 7) showed that the highest ratings were generally provided by students at denominational schools and the lowest came from students at private schools. Statistically significant differences in mean scores were found in responses to item 9a (*My teacher really listens to what I have to say*) between government ($M = 3.40$) and private schools ($M = 3.11$) as well as between denominational ($M = 3.45$) and private schools. Private school students scored lowest on this item and appeared to be less agreeable than the students in the other school types about their teachers' readiness to listen to what they have to say. Students from denominational schools had statistically significantly higher mean scores on items 9b ($M = 3.75$) and 9d ($M = 3.65$) than their government school counterparts ($M = 3.68$ and $M = 3.55$ respectively). Both of these items tested students' perceptions of their teachers' willingness to help.

Table 7. Mean Scores on Section 9 by School Type

School Type		item9a*	item9b#	item9c	item9d#	item9e
Gov't	Mean	3.40	3.68	3.60	3.55	3.79
	N	881	882	880	880	879
	Std. Deviation	.906	.733	.755	.819	.607
Denominational	Mean	3.45	3.75	3.59	3.65	3.83
	N	1848	1846	1842	1846	1845
	Std. Deviation	.838	.610	.753	.727	.559
Private	Mean	3.11	3.59	3.55	3.48	3.82
	N	73	73	73	73	73
	Std. Deviation	1.061	.704	.765	.835	.536

*Differences are significant for Government/Private and Denominational/Private pairs ($p \leq 0.05$)

#Difference is significant for Government/Denominational pair ($p \leq 0.05$)

In summary, both boys and girls in all school types gave high ratings to their teachers' role in encouraging them, setting high standards for them, and generally showing care and concern for their learning and well-being. While female students tended to rate their teachers more highly on these dimensions, the effect sizes were negligible. Students in denominational primary schools tended to give higher ratings than their counterparts in government and private primary schools but, again, effect sizes were negligible.

Students' Perceptions of Parental Involvement

This section focuses on *Research Question 2*: What are students' views of the nature and efficacy of parental involvement in their schooling?

- Do these vary between females and males?
- Do these vary across school types

Answers to these questions were sought through students' responses to Sections 11 and 12 on the Student Questionnaire.

Section 11 addressed the question: *What do you think about how you are supervised by your parents?* The 4-point Likert scale used here extended from the response *Never* (=1) to *All of the time* (=4). The ratings were generally high as shown in Table 8, indicating that students were strong in the belief that they were well taken care of by their parents/guardians with respect to arrangements for attending school, ease of contact during school time, and supervision after school.

Girls gave higher ratings than boys on all items in this section (Table 9). Differences in means were statistically significant for all items except item 11c, suggesting that girls felt they were more closely supervised. However, the effect sizes were all negligible (< 0.01).

Table 8. Mean Scores on Section 11 of Student Questionnaire: *What do you think about how you are supervised by your parents?*

	N	Mean	Std. Deviation
Item 11a: How often is there a parent or an adult at home when you return from school?	2800	3.54	.785
Item 11b: How often does a parent or adult living with you make sure you are prepared for school?	2797	3.78	.593
Item 11c: How often does a parent or adult living with you make sure you get to school on time?	2788	3.73	.613
Item 11d: Can you get in touch with a parent or an adult living with you any time you need to?	2794	3.49	.820

Table 9. Mean Scores on Section 11 by Sex

Sex		item11a*	item11b*	item11c	item11d*
F	Mean	3.61	3.81	3.75	3.53
	N	1365	1365	1359	1360
	Std. Deviation	.712	.538	.582	.789
M	Mean	3.47	3.74	3.71	3.46
	N	1435	1432	1429	1434
	Std. Deviation	.843	.639	.642	.847

*Difference significant ($p \leq 0.05$)

The analysis by school type revealed that students in denominational schools gave the highest ratings while those in private schools tended to give the lowest ratings. Differences in mean scores on individual items among the three pairs of school types were mostly not significant (Table 10).

Table 10. Mean Scores on Section 11 by School Type

School Type		item11a*	item11b	item11c	item11d#
Gov't	Mean	3.50	3.76	3.70	3.46
	N	880	877	875	876
	Std. Deviation	.814	.628	.642	.860
Denominational	Mean	3.56	3.79	3.74	3.52
	N	1847	1847	1840	1845
	Std. Deviation	.765	.578	.599	.793
Private	Mean	3.44	3.79	3.66	3.27
	N	73	73	73	73
	Std. Deviation	.913	.526	.606	.961

*Difference is significant for Government/Denominational pair ($p \leq 0.05$)

#Difference is significant for Denominational/Private pair ($p \leq 0.05$)

Section 12 dealt with the amount of help given to students. It addressed the question: *How much help is given to you by your parents?* The rating scale was identical to that used in Section 11. Again, here, the mean scores were high with the lowest mean score of 3.29 being recorded for item 12a: *How often does a parent or adult living with you help you with your homework?* (Table 11).

The mean score (M = 3.29) for boys and girls was identical on Item 12a (Table 12). The only item to display a significant difference in mean scores by sex (in favour of girls) was item 12c: *How often does a parent or adult living with you praise you for doing well at school?* The effect size was negligible, indicating no practical significance.

Table 11. Mean Scores on Section 12 of Student Questionnaire: *How much help is given to you by your parents?*

	N	Mean	Std. Deviation
Item 12a: How often does a parent or adult living with you help you with your homework?	2790	3.29	.862
Item 12b: How often does a parent or adult living with you check to see if you have done your homework?	2786	3.58	.775
Item 12c: How often does a parent or adult living with you praise you for doing well at school?	2788	3.54	.793
Item 12d: How often does a parent or adult living with you encourage you to work hard at school?	2794	3.85	.479

Table 12. Mean scores on Section 12 by Sex

Sex		item12a	item12b	item12c*	item12d
F	Mean	3.29	3.60	3.58	3.86
	N	1356	1358	1361	1363
	Std. Deviation	.850	.757	.755	.464
M	Mean	3.29	3.55	3.50	3.84
	N	1434	1428	1427	1431
	Std. Deviation	.873	.792	.825	.493

*Difference significant ($p \leq 0.05$)

When the analysis was done by school type, it was found that students in private schools gave the highest ratings for three of the four items here (Table 13). There was a significant difference between means for item 12a (*How often does a parent or adult living with you help you with your homework?*) for government schools (M = 3.23) and denominational schools (M = 3.32), in favour of denominational schools. This was the only item in this section on which students in private schools did not have the highest mean score – in fact, they had the lowest mean score (M = 3.22). For item 12b (*How often does a parent or adult living with you check to see if you have done your homework?*) ratings were lowest for the government schools

(M = 3.50) and highest for the private schools (M = 3.67). There was also a statistically significant difference in mean scores on this item for government schools and denominational schools (M = 3.61) as well as for government and private schools. Students from all school types gave very high ratings on item 12 d (*How often does a parent or adult living with you encourage you to work hard at school?*), suggesting that the value of a good education is promoted by all parents, regardless of the type of school attended by their child.

Table 13. Mean scores on Section 12 by School Type

School Type		item12a#	item12b*	item12c	item12d
Gov't	Mean	3.23	3.50	3.55	3.83
	N	874	876	872	873
	Std. Deviation	.925	.836	.765	.518
Denominational	Mean	3.32	3.61	3.53	3.86
	N	1843	1837	1843	1848
	Std. Deviation	.830	.749	.806	.464
Private	Mean	3.22	3.67	3.60	3.90
	N	73	73	73	73
	Std. Deviation	.854	.602	.777	.340

*Differences are significant for Government/Private and Government/Denominational pairs ($p \leq 0.05$)

#Difference is significant for Government/Denominational pair ($p \leq 0.05$)

As was the case with Research Question 1, the high ratings given suggest satisfaction on the part of students but in this case it was satisfaction with arrangements made by parents for their general well-being and for preparation for and participation in classes at school. Girls gave higher ratings than boys for their level of satisfaction with the quality of supervision provided by parents but boys and girls seemed almost equally satisfied with the level of encouragement they received from parents. Students in all school types reported that they had been encouraged to work hard to a great extent.

Exploration of Relationships between Students' Achievement and Students' Perceptions

This part of the study focused on *Research Question 3*: What relationships (if any) exist between students' scores on the Language Arts test and their perceptions/feelings about the subject, their teachers, their school, and parental involvement?

- Do these vary between females and males?
- Do these vary across school types?

Multiple regression was used to investigate the relationship between Language Arts competence and students' views of Language Arts activities, their school experiences and their parents' involvement in their schooling. The 12 questionnaire sections pertaining to these three broad areas are shown in Table 14. In the preliminary attempt to identify key variables, each of these sections of the questionnaire was regressed on Language Arts achievement as measured by the National Test, one section at a time. Table 14 shows the name of each section of the questionnaire used for this analysis, the number of items it contains, and the resulting R^2 value when it was regressed (individually) on Language Arts achievement.

Table 14. Results of Regressions to Estimate R² for Each Section of Questionnaire (Language Arts)

Questionnaire section	Number of items	R ²
1 How do you feel about reading?	9	.324
3 What do you think about reading?	7	.067
5 What do you do when you write a story or letter at school?	5	.060
6 What do you do when you write a story, a letter, or in your diary at home?	5	.029
7 Are you encouraged to do your best in class?	7	.080
8 How interested are you in learning?	5	.123
9 What do you think about the attention and concern shown to you in class?	5	.067
10 How do you feel about the school you attend?	4	.095
11 What do you think about how you are supervised by your parents?	4	.052
12 How much help is given to you by your parents?	4	.069

The data indicate that the section of the questionnaire designed to measure students' feelings about reading had the highest R² value (0.324) and thus was accounting for the largest portion of the variance in the Language Arts Achievement scores. This was followed by the section on students' interest in learning with an R² value of 0.123. The section on students' views of their school environment was next with an R² value of .095, followed by the section on students' views of the level of encouragement received to do their best in class with an R² value of .080. The students' experience writing at home contributed the least towards the variance in the Language Arts scores. These preliminary findings suggested that the best predictors might be those sections dealing with students' views of self (that is, their feelings about reading and their interest in learning) as well as their perceptions about the learning environment (that is, their perception of school and the encouragement to do their best in class).

It should be noted that only those items within a given questionnaire section with significant beta values were re-used when the regression analysis was repeated in the series of regression analyses done to arrive at the final model. Eventually, a statistically significant prediction model [F(12, 2660) = 157.559, p < .01] with an R² value of 0.415, was obtained when certain items pertaining to feelings about reading (Section 1), interest in learning (Section 8), feelings about the school (Section 10), level of encouragement to do well in class (Section 7), and writing practices in school (Section 5) were entered. This predictor model contained 12 items coming from five sections of the questionnaire (see Table 15). All of the questionnaire sections in the final model contained a reduced number of items from their original configuration and each of these newly-configured sections was renamed as described below and as shown in Table 15.

The Predictor Model (Language Arts)

Section 1: How do you feel about reading?

Of the original nine items in this section, four remained in the model:

- When I am reading by myself, I understand (*almost everything/some of what/almost none of what/none of*) what I read.
- I am a (*very good/good/fair/poor*) reader.
- I worry about what other children think about my reading (*every day/almost every day/once in a while/never*).
- Reading is (*very easy/kind of easy/kind of hard/very hard*) for me.

All of these items refer to the students' concept of self as a reader. This predictor was labelled ***Reading Self-concept***. Students with higher ratings on these items tended to have higher scores on the Language Arts test.

Section 8: How interested are you in learning?

Three of the five items in this section were retained in the model:

- I often count the minutes until the class ends (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- I am usually bored with what goes on in the class.
- I work hard to do my best in class.

These three items were collectively labelled ***Attitude to School Work***. Students who reported a high interest in school work tended to score higher in Language Arts.

Section 10: How do you feel about the school you attend?

Two items from the original four items in the section were retained:

- I am bored in school (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- I wish I could go to a different school.

These items were labelled ***Attitude to School***. Students' attitude towards attending school were related to Language Arts performance with those viewing school attendance in a positive light tending towards higher achievement levels in Language Arts.

Section 7: Are you encouraged to do your best in class?

Only two of the original seven items in this section emerged in the final model. These were collectively labelled ***Teacher Care***:

- My teacher cares if I get low scores in class (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- My teacher thinks that it is important that I do well in class.

The extent to which students perceived that their teacher cared about how they did in their school work was directly related to their performance on the Language Arts test.

Section 5: What do you do when you write a story or letter at school

Only one item from this section was retained in the model:

- How often do you work with others in pairs or small groups to discuss and improve your story or letter? (*Never/A few times/Most times/Always*).

This was labelled ***Writing Activity***. It suggested that increased frequency of working in small groups to improve writing was associated with lower levels of achievement in Language Arts.

This is a somewhat unexpected finding and further exploration of the nature of group work engaged in (or lack thereof) will be needed to comprehend this more fully.

Table 15. Regression of Student Factors on Language Arts

Questionnaire item	B	Std. Error	β	p
<i>Reading Self-concept (from Section 1)</i>				
When I am reading by myself, I understand <i>almost everything/some of what/almost none of what/none of what</i> I read	2.04	.324	.112	.000
I am a <i>very good/good/fair/poor</i> reader	2.83	.276	.203	.000
I worry about what other children think about my reading <i>every day/almost every day/once in a while/never</i>	1.70	.169	.152	.000
Reading is <i>very easy/kind of easy/kind of hard/very hard</i> for me.	3.43	.307	.224	.000
<i>Attitude to School Work (from Section 8)</i>				
I often count the minutes until the class ends (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.702	.144	.076	.000
I am usually bored with what goes on in the class.	.660	.171	.063	.000
I work hard to do my best in class.	1.47	.303	.079	.000
<i>Attitude to School (from Section 10)</i>				
I am bored in school (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.624	.182	.057	.001
I wish I could go to a different school.	1.24	.156	.125	.000
<i>Teacher Care (from Section 7)</i>				
My teacher thinks that it is important that I do well in class.	1.65	.332	.080	.000
My teacher cares if I get low scores in class (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.580	.137	.064	.000
<i>Writing Activity (from Section 5)</i>				
How often do you work with other students in pairs or small groups to discuss and improve your story or letter? (<i>Never/A few times/Most times/Always</i>)	-1.42	.179	-.119	.000

In summary, the results of the multiple regression containing all the revised sections as combined predictors showed that the best model with an R^2 value of 0.415 was obtained when

items pertaining to Reading Self-concept, Attitude to Schoolwork, Attitude to School, Teacher Care, and Writing Activity were entered.

Results by sex

Starting with the model generated above for the entire sample of 2,831 students, the multiple regression procedure was repeated but with the data disaggregated by sex. As shown in Tables 16 and 17, the predictor models obtained for females and males were quite similar to each other. They were also similar to that for the total sample (Table 15). The model for females was statistically significant [$F(12, 1296) = 72.543, p < .01$] and accounted for roughly 40% of the variance in Language Arts scores with an R^2 value of 0.402. The model for males was also significant [$F(11, 1364) = 84.012, p < .01$], with an R^2 value of 0.404. The negative beta value for the item “*I get so interested in my work I do not want to stop*” in the model for females (Table 16) may have arisen because of the double negative resulting when the item and possible responses are combined.

Table 16. Regression of Student Factors on Language Arts for Females only

Questionnaire item	B	Std. Error	β	p
Reading Self-concept				
When I am reading by myself, I understand <i>almost everything/some of what/almost none of what/none of what</i> I read	2.17	.464	.116	.000
I am a <i>very good/good/fair/poor</i> reader	3.04	.385	.215	.000
Reading is <i>very easy/kind of easy/kind of hard/very hard</i> for me.	3.14	.442	.198	.000
I worry about what other children think about my reading <i>every day/almost every day/once in a while/never</i>	1.83	.229	.176	.000
Attitude to School Work				
I often count the minutes until the class ends (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.820	.202	.091	.000
I get so interested in my work I do not want to stop.	-1.27	.264	-.109	.000
I am usually bored with what goes on in the class.	.625	.235	.062	.008
I work hard to do my best in class.	1.36	.468	.068	.004
Attitude to School				
I am bored in school (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.719	.258	.067	.005
I wish I could go to a different school.	1.09	.222	.113	.000
Teacher Care				
My teacher expects me to do my best all of the time (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.40	.477	.117	.000
Writing Activity				
How often do you work with other students in pairs or small groups to discuss and improve your story or letter? (<i>Never/A few times/Most times/Always</i>)	-1.18	.247	-.105	.000

Table 17. Regression of Student Factors on Language Arts for Males only

Questionnaire item	B	Std. Error	β	p
<i>Reading Self-concept</i>				
When I am reading by myself, I understand <i>almost everything/some of what/almost none of what/none of what</i> I read	2.15	.441	.124	.000
I am a <i>very good/good/fair/poor</i> reader	2.28	.386	.171	.000
I worry about what other children think about my reading <i>every day/almost every day/once in a while/never</i>	1.62	.244	.141	.000
Reading is <i>very easy/kind of easy/kind of hard/very hard</i> for me.	3.39	.421	.233	.000
<i>Attitude to School Work</i>				
I often count the minutes until the class ends (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.590	.201	.065	.003
I am usually bored with what goes on in the class.	.777	.242	.074	.001
I work hard to do my best in class.	1.42	.392	.083	.000
<i>Attitude to School</i>				
I am bored in school (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.708	.251	.067	.005
I wish I could go to a different school.	1.18	.214	.123	.000
<i>Teacher Care</i>				
My teacher thinks that it is important that I do well in class (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.99	.467	.096	.000
<i>Writing Activity</i>				
How often do you work with other students in pairs or small groups to discuss and improve your story or letter? (<i>Never/A few times/Most times/Always</i>)	-1.44	.255	-.120	.000

Results by school type

Finally, the analysis was done by school type. Here, the whole sample model was used as the base and the results by school type were explored. The resulting prediction models for Government and Denominational schools are shown in Tables 18 and 19 respectively.

The best predictor model for Government schools was statistically significant [F(8, 843) = 67.932, p < .01]. It consisted of only 8 questionnaire items (Table 18) and had an R² value of 0.392. This model generally mirrored the model for the total sample except that the *Teacher Care* component was not included. In other words, the performance in Language Arts of students

in Government schools was not influenced by their perception of the level of care and concern exhibited by their teachers.

Table 18. Regression of Student Factors on Language Arts for Government Schools Only

Questionnaire item	B	Std. Error	β	p
<i>Reading Self-concept</i>				
I am a <i>very good/good/fair/poor</i> reader	3.36	.513	.237	.000
I worry about what other children think about my reading <i>every day/almost every day/once in a while/never</i>	2.04	.318	.176	.000
Reading is <i>very easy/kind of easy/kind of hard/very hard</i> for me.	3.16	.556	.204	.000
<i>Attitude to school work</i>				
I often count the minutes until the class ends (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.830	.274	.085	.003
I work hard to do my best in class.	2.44	.510	.133	.000
<i>Attitude to school</i>				
I am bored in school (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.04	.336	.091	.002
I wish I could go to a different school.	1.74	.282	.178	.000
<i>Writing activity</i>				
How often do you work with other students in pairs or small groups to discuss and improve your story or letter? (<i>Never/A few times/Most times/Always</i>)	-1.66	.327	-.138	.000

Table 19 shows that the predictor model for Denominational schools was identical to that for the total sample with Reading Self-concept, Attitude to Work, Attitude to School, Teacher Care, and Writing Activity being the predictor variables. The model was statistically significant [$F(12, 1753) = 103.623, p < .01$] and accounted for approximately 42% of the variance of Language Arts achievement ($R^2 = 0.415$).

Table 19. Regression of Student Factors on Language Arts for Denominational Schools Only

Questionnaire item	B	Std. Error	β	p
Reading Self-concept				
When I am reading by myself, I understand <i>almost everything/some of what/almost none of what/none of what</i> I read	2.38	.385	.135	.000
I am a <i>very good/good/fair/poor</i> reader	2.81	.324	.209	.000
I worry about what other children think about my reading <i>every day/almost every day/once in a while/never</i>	1.41	.200	.131	.000
Reading is <i>very easy/kind of easy/kind of hard/very hard</i> for me.	3.46	.366	.231	.000
Attitude to school work				
I often count the minutes until the class ends (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.718	.170	.081	.000
I am usually bored with what goes on in the class.	.707	.201	.070	.000
I work hard to do my best in class.	1.20	.368	.064	.001
Attitude to school				
I am bored in school (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.683	.215	.065	.001
I wish I could go to a different school.	.842	.191	.086	.000
Teacher care				
My teacher thinks that it is important that I do well in class (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.08	.400	.102	.000
My teacher cares if I get low scores in class (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.578	.162	.066	.000
Writing activity				
How often do you work with other students in pairs or small groups to discuss and improve your story or letter? (<i>Never/A few times/Most times/Always</i>)	-1.17	.216	-.100	.000

The predictor model for Private schools was unstable. This is probably due to the small sample size (n = 73) for Private schools when compared with that for the Government schools (n = 895) and the Denominational schools (n = 1863).

Research Question 4: What relationships (if any) exist between students’ scores on the Mathematics test and their perceptions/feelings about the subject, their teachers, their school, and parental involvement?

- Do these vary between females and males?
- Do these vary across school types?

The multiple regression procedure that was used for *Research Question 3* was repeated for *Research Question 4*, but with the dependent variable being Mathematics achievement level on this occasion. The preliminary attempt to identify key variables generated the findings shown in Table 20. Further analytical runs (as described above for Language Arts) led to the generation of the predictor model for Mathematics which is represented in Table 21 and described following.

Table 20. Results of Regressions to Estimate R² for each Section of Questionnaire (Mathematics)

Questionnaire section	Number of items	R ²
2. How do you feel about mathematics?	8	.110
4 What do you think about mathematics?	6	.059
7. Are you encouraged to do your best in class?	7	.086
8 How interested are you in learning?	5	.099
9 What do you think about the attention and concern shown to you in class?	5	.057
10 How do you feel about the school you attend?	4	.083
11 What do you think about how you are supervised by your parents?	4	.042
12 How much help is given to you by your parents?	4	.047

Table 21. Regression of Student Factors on Mathematics

Questionnaire item	B	Std. Error	β	p
Mathematics Self-concept (from Section 2)				
My friends think that I am (<i>very good/good/fair/poor</i>) at mathematics	2.071	.291	.138	.000
Learning mathematics (<i>always/sometimes/almost never/never</i>) makes me nervous.	.934	.193	.087	.000
I (<i>always/sometimes/almost never/never</i>) memorize how to work mathematics problems.	-1.387	.380	-.072	.000
When my teacher asks me a question about a mathematics problem, I can (<i>always/sometimes/almost never/never</i>) think of an answer.	1.650	.389	.084	.000
Attitude to School Work (from Section 8)				
I often count the minutes until the last class ends. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.857	.168	.090	.000
I get so interested in my work I do not want to stop. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	-1.272	.230	-.104	.000
I am usually bored with what goes on in the class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.873	.203	.080	.000
I work hard to do my best in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.924	.369	.098	.000
Teacher Care (from Section 7)				
My teacher cares if I get low scores in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.933	.161	.100	.000
My teacher expects me to do my best all of the time. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.369	.410	.067	.001
My teacher thinks that it is important that I do well in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.598	.431	.074	.000
Attitude to School (from Section 10)				
I'm bored in school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.666	.216	.059	.002
I wish I could go to a different school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.605	.184	.158	.000
View of Mathematics (from Section 4)				
My best friends think that mathematics is (<i>lots of fun/fun/somewhat fun/not fun at all</i>).	-1.075	.251	-.078	.000
People who enjoy mathematics are (<i>very interesting/interesting/not very interesting/boring</i>).	-1.129	.303	-.071	.000
I (<i>often/sometimes/almost never/never</i>) like adding, subtracting, multiplying, and dividing even when I am at home.	.960	.309	.061	.002
I think that getting good grades in mathematics is (<i>very important/important/a little important/not important</i>).	2.067	.544	.068	.000

The Predictor Model (Mathematics)

The best model obtained was statistically significant [$F(17, 2638) = 51.656, p < .01$] and had an R^2 value of 0.250. It contained items from five sections of the questionnaire, encompassing a total of 17 items as detailed below.

Section 2: How do you feel about mathematics?

Four of the original eight Section 2 items were retained in the predictor model:

- My friends think that I am (*very good/good/fair/poor*) at mathematics
- Learning mathematics (*always/sometimes/almost never/never*) makes me nervous.
- I (*always/sometimes/almost never/never*) memorize how to work mathematics problems.
- When my teacher asks me a question about a mathematics problem, I can (*always/sometimes/almost never/never*) think of an answer.

This predictor was labelled **Mathematics Self-concept**. The item: *I (always/sometimes/almost never/never) memorize how to work mathematics problems*, had a negative beta value. This indicates that students who reported doing mathematics by memorization tended to be the lower achievers in mathematics. Students giving high ratings on the other three items tended to have higher scores on the mathematics test, suggesting that a high mathematics self-concept is linked to higher levels of mathematics achievement.

Section 8: How interested are you in learning?

Four of the original five items in this section remained in the final model:

- I often count the minutes until the last class ends. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- I get so interested in my work I do not want to stop. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- I am usually bored with what goes on in the class. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- I work hard to do my best in class. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)

These items all spoke to how students react to the learning environment at school and the predictor was labelled **Attitude to School Work**. The item, *I get so interested in my work I do not want to stop. (Disagree a lot/Disagree a little/Agree a little/Agree a lot)*, had a negative beta value associated with it. One explanation of this finding is that the combination of the negative wording in the stem and the negative wording in possible responses might have posed comprehension challenges for some students. But, taking this finding at face value, the interpretation would be that students with a high intensity of focus tend to obtain lower test scores in mathematics, or, put another way, high achievers in mathematics do not see themselves as having to spend long periods on task. For all the other items, the findings indicate that the higher achievers tended to be positive about their learning environment at school.

Section 7: Are you encouraged to do your best in class?

This predictor, **Teacher Care**, consisted of three items:

- My teacher cares if I get low scores in class. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- My teacher expects me to do my best all of the time. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- My teacher thinks that it is important that I do well in class. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)

As was the case with Language Arts, the extent to which students perceived that their teacher cared about how they did in their school work was directly related to their performance on the Mathematics test.

Section 10: How do you feel about the school you attend?

This *Attitude to School* predictor was identical to one obtained for Language Arts and contained two of the original four items in the section:

- I'm bored in school. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)
- I wish I could go to a different school. (*Disagree a lot/Disagree a little/Agree a little/Agree a lot*)

Students who had a positive view of their school tended to be the high achievers in Mathematics.

Section 4: What do you think about mathematics?

The final predictor in the model was labelled *View of Mathematics* and contained four of the original six items in the section:

- My friends think that mathematics is (*lots of fun/fun/somewhat fun/not fun at all*).
- People who enjoy mathematics are (*very interesting/interesting/not very interesting/boring*).
- I (*often/sometimes/almost never/never*) like adding, subtracting, multiplying, and dividing even when I am at home.
- I think that getting good grades in mathematics is (*very important/important/a little important/not important*).

The first two items listed above had negative beta values. This can be interpreted to mean that students who view others who enjoy Mathematics as interesting (perhaps “nerdy?”) tend to obtain lower Mathematics scores. The findings for the other two items suggest that students who tend to be engaged in Mathematics activity even when not in class and those who are motivated to pursue Mathematics tend to be the higher achievers.

Results by sex

The statistically significant predictor model for females [$F(15, 1285) = 27.760, p < .01$] was very similar to that for the total sample (see Table 22) and accounted for roughly 25% of the variance in performance in Mathematics ($R^2 = .245$). The statistically significant predictor model for males [$F(10, 1362) = 45.599, p < .01$], though also accounting for 25% of the variance ($R^2 = .251$), was somewhat different, the most striking difference being that there were no predictor items pertaining to students' views of Mathematics (see Table 23).

Table 22. Regression of Student Factors on Mathematics for Females only

Questionnaire item	B	Std. Error	β	p
Mathematics Self-concept				
My friends think that I am (<i>very good/good/fair/poor</i>) at mathematics	1.514	.404	.105	.000
Learning mathematics (<i>always/sometimes/almost never/never</i>) makes me nervous.	.906	.266	.089	.001
I (<i>always/sometimes/almost never/never</i>) memorize how to work mathematics problems.	-1.828	.525	-.097	.001
When my teacher asks me a question about a mathematics problem, I can (<i>always/sometimes/almost never/never</i>) think of an answer.	1.897	.556	.096	.001
Attitude to School Work				
I often count the minutes until the last class ends. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.706	.238	.075	.003
I get so interested in my work I do not want to stop. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	-1.796	.328	-.147	.000
I am usually bored with what goes on in the class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.873	.280	.083	.002
I work hard to do my best in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.983	.559	.092	.000
Teacher Care				
My teacher cares if I get low scores in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.042	.219	.117	.000
My teacher expects me to do my best all of the time. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.810	.576	.128	.000
Attitude to School				
I'm bored in school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.930	.309	.082	.003
I wish I could go to a different school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.446	.266	.142	.000
View of Mathematics				
My best friends think that mathematics is (<i>lots of fun/fun/somewhat fun/not fun at all</i>).	-1.247	.354	-.092	.000
People who enjoy mathematics are (<i>very interesting/interesting/not very interesting/boring</i>).	-1.238	.415	-.081	.003
I think that getting good grades in mathematics is (<i>very important/important/a little important/not important</i>).	3.302	.802	.105	.000

Table 23: Regression of Student Factors on Mathematics for Males only

Questionnaire item	B	Std. Error	β	p
Mathematics Self-concept				
My friends think that I am (<i>very good/good/fair/poor</i>) at mathematics	2.918	.405	.189	.000
Learning mathematics (<i>always/sometimes/almost never/never</i>) makes me nervous.	1.119	.279	.099	.000
When my teacher asks me a question about a mathematics problem, I can (<i>always/sometimes/almost never/never</i>) think of an answer.	2.182	.499	.111	.000
Attitude to School Work				
I often count the minutes until the last class ends. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.095	.237	.113	.000
I get so interested in my work I do not want to stop. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	-.930	.305	-.075	.002
I am usually bored with what goes on in the class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.106	.279	.099	.000
I work hard to do my best in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.507	.477	.136	.000
Teacher Care				
My teacher cares if I get low scores in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.940	.232	.097	.000
My teacher thinks that it is important that I do well in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.473	.563	.112	.000
Attitude to School				
I wish I could go to a different school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.695	.248	.167	.000

Results by school type

Table 24 shows the predictor model for denominational schools which turned out to be very similar to the one for the total sample and contained 17 predictor items. This model was statistically significant [$F(17, 1731) = 35.322, p < .01$] and explained 25.8% of the variance. The model for government schools was statistically significant [$F(8, 852) = 28.265, p < .01$] but was quite different and only contained eight items (Table 25). It explained 21.0% of the variance in Mathematics achievement. As was the case with the Language Arts analysis the predictor model for private schools was unstable.

Table 24. Regression of Student Factors on Mathematics for Denominational Schools only

Questionnaire item	B	Std. Error	β	p
Mathematics Self-concept				
My friends think that I am (<i>very good/good/fair/poor</i>) at mathematics	2.100	.341	.146	.000
Learning mathematics (<i>always/sometimes/almost never/never</i>) makes me nervous.	.705	.230	.068	.002
I (<i>always/sometimes/almost never/never</i>) memorize how to work mathematics problems.	-1.097	.452	-.058	.015
When my teacher asks me a question about a mathematics problem, I can (<i>always/sometimes/almost never/never</i>) think of an answer.	2.005	.463	.105	.000
Attitude to School Work				
I often count the minutes until the last class ends. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.612	.199	.067	.002
I get so interested in my work I do not want to stop. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	-1.147	.274	-.097	.000
I am usually bored with what goes on in the class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.902	.239	.086	.000
I work hard to do my best in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.060	.445	.106	.000
Teacher Care				
My teacher cares if I get low scores in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.830	.191	.092	.000
My teacher expects me to do my best all of the time. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.572	.509	.075	.002
My teacher thinks that it is important that I do well in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	2.066	.522	.095	.000
Attitude to School				
I'm bored in school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.815	.255	.075	.001
I wish I could go to a different school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.291	.225	.127	.000
View of Mathematics				
My best friends think that mathematics is (<i>lots of fun/fun/somewhat fun/not fun at all</i>).	-1.133	.300	-.084	.000
People who enjoy mathematics are (<i>very interesting/interesting/not very interesting/boring</i>).	-.950	.362	-.061	.009
I (<i>often/sometimes/almost never/never</i>) like adding, subtracting, multiplying, and dividing even when I am at home.	.915	.374	.058	.015
I think that getting good grades in mathematics is (<i>very important/important/..... /not important</i>).	2.662	.635	.092	.000

Table 25: Regression of Student Factors on Mathematics for Government Schools only

Questionnaire item	B	Std. Error	β	p
Mathematics Self-concept				
My friends think that I am (<i>very good/good/fair/poor</i>) at mathematics	2.470	.539	.155	.000
Learning mathematics (<i>always/sometimes/almost never/never</i>) makes me nervous	1.314	.357	.117	.000
I (<i>always/sometimes/almost never/never</i>) memorize how to work mathematics problems.	-2.195	.638	-.113	.001
Attitude to School Work				
I often count the minutes until the last class ends. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.403	.310	.140	.000
I work hard to do my best in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	3.277	.590	.172	.000
Teacher Care				
My teacher cares if I get low scores in class. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	.955	.298	.098	.001
Attitude to School				
I wish I could go to a different school. (<i>Disagree a lot/Disagree a little/Agree a little/Agree a lot</i>)	1.883	.313	.189	.000
View of Mathematics				
My best friends think that mathematics is (<i>lots of fun/fun/somewhat fun/not fun at all</i>).	-1.428	.437	-.101	.001

Summary and Discussion

This study explored the performance of students on the Language Arts and Mathematics components of the 2009 National Test. Independent t-tests compared the means of the 1,453 male and 1,378 female students and determined that there was a difference in gender achievement. Analyses also showed a difference in student achievement based on the type of school attended.

Girls outperformed boys in the Language Arts test, just as they had done in the 2006 test (Anderson et al., 2009), and just as they had done in the pre-2006 period (George, 2006). Girls also outperformed the boys in mathematics in the 2009 test, unlike the situation with the 2006 test where there was no statistically significant difference between male and female performance in this subject. This superior performance by female students in core subjects at the elementary school level is a phenomenon that has been reported in several other countries as well (Kush & Watkins, 1996). This trend in Language Arts apparently continues to the secondary level where the PISA assessment (OECD, 2014) also highlighted the higher performance of girls versus boys in reading. However, girls had a lower performance in mathematics on this assessment.

Students in this study valued the contribution made by their teachers in setting high standards for them and generally guiding them through the teaching/learning process. This agrees with the literature exemplified by Klinger et al. (2009) that suggests that students tend to be more engaged in school and have improved academic performance when their teachers have high expectations for them. Although female students gave higher ratings, the effect sizes were negligible. Students in denominational schools tended to give the highest ratings for the extent to which the teacher showed that he/she cared. In many denominational schools, there is an overt religious stance which might impact positively on teacher-student relationships. Nonetheless, it should be noted that high ratings were given by students in all school types for teachers' demonstration of care.

A high level of satisfaction with their parents' provision for their well-being and their schooling was also expressed by students. Though girls reported a higher level of supervision by parents than boys, the effect size was negligible and there was no statistical difference among school types on this measure. Both boys and girls gave high ratings for the level of encouragement they received from their parents. The one area where some variation was noted was in the checking of homework by parents. Statistically significant differences were observed among school types with the lowest ratings in government schools and the highest in private schools but effect sizes were all low. Overall, these findings suggest that students value the support given to them by both their teachers and their parents.

The study also conducted multiple regression analyses to investigate the relationships (if any) between students' scores on the Language Arts and Mathematics tests and their perceptions/feelings about the subject, their teachers, their school, and parental involvement. The results indicate that achievement in Language Arts is positively related to the extent to which students see themselves as competent readers, have a positive attitude towards school and school work, and perceive their teachers as caring about their performance in school work. These findings are similar to those generated in the 2009 study by Anderson et al. However, parental involvement, as understood by the children, did not contribute towards student achievement in Language Arts. This would at first appear to be contrary to what was found in the study by Anderson et al. and also what is found extensively in the literature, that is, that parental involvement in children's education is important (see for example, Fan & Chen, 2001; Jeynes, 2011; Machen, Wilson & Notar, 2005). It should be noted, though, that in the study by Anderson

et al., the construct of parental involvement was more extensively derived as it included data from the Parents' Questionnaire, which was not done in the present study.

The regression analyses indicated that the predictors for Mathematics achievement were similar to those described above for Language Arts. However, there was a fifth predictor in the model for mathematics – students' view of mathematics. Students who tended to be engaged in mathematics activity, even outside of school, and who were motivated to do the subject tended to be the higher achievers in the subject.

With respect to gender, the study shows that the predictors for Language Arts achievement are similar for males and females which, in turn, are similar to those obtained for the total sample. For Mathematics, however, whereas the predictor model for females mirrored that for the total sample, there were atypical results for males, with no predictor items in the Teacher Care category. The analysis by school type seems to have been negatively impacted by the small sample size for Private schools but the results for Denominational schools mirrored that for the total sample.

Overall, there was a greater contribution of the predictors to Language Arts achievement than to Mathematics achievement which might suggest that there are other factors contributing towards Mathematics achievement than what was studied here. Nonetheless, these findings give some clues, similar to those generated in the study by Anderson et al., about the ways in which student achievement in Language Arts and Mathematics at this early stage of their career may be enhanced. In this regard, part of the discussion from that study is worth repeating here:

Some initial steps that could be taken based on our results include the development of initiatives that would target the manner in which students view their schooling environment, since these perceptions are consistently related to achievement. It would be worthwhile to investigate the extent to which these relationships are directional, in the sense that enhanced perceptions result in enhanced achievement as opposed to the conjecture that students with higher levels of achievement tend to develop more positive perceptions of themselves and their school. (Anderson et al., 2009, pp. 114-115)

The role of the teacher in providing the necessary support and encouragement for students as they engage in their studies at this level is one which should be actively encouraged and even enhanced through appropriately structured professional development activities.

One issue that could be addressed by future research is the relationship of early achievement at the Standard 3 level to completion of secondary school. In an earlier study, George (2006) showed that males had a substantially higher non-graduation rate than females. If early (Standard 3) achievement and attitudes are predictive of drop-out, then perhaps some early intervention could be developed and applied to stem such occurrences.

The Trinidad and Tobago education context is characterised by vestiges from the colonial education system from which it emerged, with its strong emphasis on the results of standardised tests. This study has thrown up results similar to those of Anderson et al. (2009) which suggest that policy makers need to consider planning for the development of students' level of satisfaction with their school environment and also teachers' ability to be supportive of and encouraging to their students as possible means of enhancing student performance, at least at the Standard 3 level. To this end, it may be useful to give more consideration than is typically given to the affective aspect of students' development and also to the affective aspects of the professional preparation of teachers.

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APPENDIX



Ministry of Education
Division of Educational Research and Evaluation

STUDENT QUESTIONNAIRE

NATIONAL TEST SURVEY **2010**

School Name: _____

Student Name: _____

SECTION A



(i) Please tick if the following adult(s) are members of your ho

- mother
- father
- aunt
- uncle
- grandmother
- grandfather
- other(s), please write _____

(ii) Please write your full address on the lines below.

INSTRUCTIONS FOR SECTION B

TO BE READ BY THE TEACHER

In this booklet, you will find questions about you and what you think. There is no right or wrong answer. I will read each sentence twice. Do not mark your answer until I tell you to. The first time I read the sentences, I want you to think about the best answer for you. The second time, I want you to choose the answer you think is nearest to the truth. Let us take a few minutes to practice the kinds of questions you will answer in this booklet.

Example 1

Tick one circle.

Playing sports is _____ for me.

- very easy
- kind of easy
- kind of hard
- very hard

Example 2

Tick one circle.

Tell how much you agree with these statements.

- | | Agree
a lot | Agree
a little | Disagree
a little | Disagree
a lot |
|--|------------------------|----------------------------------|------------------------------|---------------------------|
| (a) Watching movies is fun----- | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (b) I like eating ice cream----- | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (c) I do not like waking up early----- | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |

1

How do you feel about reading?

a. My friends think that I am a _____ reader.

- very good
- good
- fair
- poor

b. I read _____ my friends.

- a lot better than
- a little better than
- about the same as
- not as well as

c. When I come to a word I don't know, I can _____ figure it out.

- always
- sometimes
- almost never
- never

d. When I am reading by myself, I understand _____ I read.

- almost everything
 - some of what
 - almost none of what
 - none of what
-

e. I am a _____ reader.

- very good
 - good
 - fair
 - poor
-

f. I worry about what other children think about my reading _____.

- every day
 - almost every day
 - once in a while
 - never
-

g. When my teacher asks me a question about what I read, I can _____ think of an answer.

- always
 - sometimes
 - almost never
 - never
-

h. Reading is _____ for me.

- very easy
- kind of easy
- kind of hard
- very hard

i. When I read out loud I am a _____ reader.

- very good
- good
- fair
- poor

2

How do you feel about mathematics?

a. My friends think that I am _____ at mathematics.

- very good
- good
- fair
- poor

b. I am _____ my friends at mathematics.

- a lot better than
- a little better than
- about the same as
- not as good as

c. Learning mathematics _____ makes me feel nervous.

- always
- sometimes
- almost never
- never

d. I am _____ able to work out mathematics problems without difficulty.

- always
- sometimes
- almost never
- never

e. Explaining my answer to a mathematics problem is _____ for me.

- very easy
- kind of easy
- kind of hard
- very hard

f. I _____ memorize how to work mathematics problems.

- always
- sometimes
- almost never
- never

g. When my teacher asks me a question about a mathematics problem, I can _____ think of an answer.

- always
- sometimes
- almost never
- never

h. Mathematics is _____ for me.

- very easy
- kind of easy
- kind of hard
- very hard

3

What do you think about reading?

a. Reading a book is something I _____ like to do.

- often
- sometimes
- almost never
- never

b. My best friends think that reading is _____.

- lots of fun
- fun
- a little fun
- not fun at all

c. People who read a lot are _____ .

- very interesting
- interesting
- not very interesting
- boring

d. I think a Library is _____ place to spend time.

- a very interesting
- an interesting
- a not very interesting
- a boring

e. I think reading is _____ way to spend time.

- a very interesting
- an interesting
- a not very interesting
- a boring

f. When I grow up I will spend _____ of my time reading.

- a lot
- some
- very little
- none

g. When someone gives me a book as a present I feel _____.

- very happy
- happy
- unhappy
- very unhappy

4

What do you think about mathematics?

a. Mathematics is something I _____ like to do.

- often
- sometimes
- almost never
- never

b. My best friends think that mathematics is _____.

- lots of fun
- fun
- somewhat fun
- not fun at all

c. People who enjoy mathematics are _____.

- very interesting
- interesting
- not very interesting
- boring

d. I _____ like adding, subtracting, multiplying, and dividing even when I am at home.

- often
 - sometimes
 - almost never
 - never
-

e. I think that mathematics is _____ in everyday life.

- very important
 - important
 - a little important
 - not important
-

f. I think that getting good grades in mathematics is _____.

- very important
- important
- a little important
- not important

5

What do you do when you write a story or letter at school?

a. For this school year how often did you write a story?

Never Once or twice a month Once or twice a week Almost each day

b. For this year, how often did you write letters?

c. When you write a story or letter at school, how often does your teacher remind you to make a plan for your story or letter before you begin to write it (for example make an outline, draw a chart)?

Never A few times Most times Always

d. How often does your teacher give you a second chance to make changes to your story or letter to fix mistakes/errors and to improve on it ?

e. How often did you work with other students in pairs or small groups to discuss and improve your story or letter?

6

What do you do when you write a story, a letter, or in your diary at home?

- Never Once or twice a month Once or twice a week Almost every day
- a.** How often do you write in a private diary at home?
- b.** How often do you write stories or letters for fun at home?
- c.** How often do you write e-mails to your friends or family?

- Never A few times Most times Always
- d.** How often do you use a computer to make changes to the story or letter that you are writing at home?
- e.** When you write at home, how often do you ask an adult for help with what you are writing?

7

Are you encouraged to do your best in your class?

a. My teacher encourages me to do extra work when I don't understand something.

Disagree a lot Disagree a little Agree a little Agree a lot

b. My teacher praises my effort when I work hard.

c. My teacher cares if I don't do my work in class.

d. My teacher cares if I get low scores in class.

e. My teacher expects me to do my best all of the time.

f. My teacher expects me to complete my homework every night.

g. My teacher thinks that it is important that I do well in class.

8

How interested are you in learning?

	Disagree a lot	Disagree a little	Agree a little	Agree a lot
a. I often count the minutes until the class ends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. I get so interested in my work, I do not want to stop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. I am usually bored with what goes on in the class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. I usually look forward to class every day.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. I work hard to do my best in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9

What do you think about the attention and concern shown toward you in class?

- | | Disagree
a lot | Disagree
a little | Agree
a little | Agree
a lot |
|---|-----------------------|-----------------------|-----------------------|-----------------------|
| a. My teacher really listens to what I have to say. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| b. My teacher helps me to improve if I am behind. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| c. My teacher notices if I have trouble learning something. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| d. My teacher is willing to give extra help on schoolwork, if I need it. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| e. My teacher believes that I can do well in school. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

10.

How do you feel about the school you attend?

Disagree a lot Disagree a little Agree a little Agree a lot

a. I'm bored in school.

b. I usually look forward to school.

c. I wish I did not have to go to school.

d. I wish I could go to a different school.

11

What do you think about how you are supervised by your parents?



Never Once in
 a while Most of
 the time All of
 the time

a. How often is there a parent or an adult at home when you return from school.

b. How often does a parent or adult living with you, make sure you are prepared for school?

c. How often does a parent or adult living with you, make sure you get to school on time?

d. Can you get in touch with a parent, or an adult living with you, any time you need to?



12

How much help is given to you by your parents?

a. How often does a parent or adult living with you help you with your homework?

Never Once in a while Most of the times All the time

b. How often does a parent or adult living with you check to see if you have done your homework?

c. How often does a parent or adult living with you praise you for doing well at school?

d. How often does a parent or adult living with you encourage you to work hard at school?

