

**RESEARCH ON STUDENT ASSESSMENT PROGRAMS
IN TRINIDAD AND TOBAGO:
RESULTS FROM THE NATIONAL TEST**

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Many nations conduct annual assessment of student achievement in the basic skills or curricular domains of reading, writing, mathematics and science. The programs take various forms – some being focused on accountability of schools and teachers for student performance (such as the *No Child Left Behind* initiative in the US); others having a focus on curricular reform based on the evidence generated by the assessment program (this form requires some form of national or centralized curriculum). Regardless of specific focus and format, the assessment programs have the aim of improving the quality of education as indexed by the achievement of students in the basic skills and competencies of schooling.

The National Test of Trinidad and Tobago is a relatively recent annual standardized assessment program for primary students in Standards 1 and 3 (analogous to grades 1 and 3), covering the subjects of Language Arts and Mathematics. Beginning in 2008 the test expanded its focus to include students in Standards 2 and 4 (analogous to grades 2 and 4) and its curricular coverage to Science and Social Studies. The National Test is developed and administered by the Ministry of Education (MOE) with the intent to gather information for decision-making at the school, district and national levels and to track students' progress through school.

It should be noted that in the Republic of Trinidad and Tobago the Ministry of Education through its Division of Educational Research and Evaluation (DERE) develops and administers a number of student assessment programs in addition to the National Test. The DERE develops and/or administers the National Certificate of Secondary Education (NCSE) in order to assess the academic performance of students who have completed three years of secondary schooling. In addition, the MOE administers three

major national examinations set by the regional Caribbean Examinations Council (CXC) for students at the primary and secondary levels as follows:

- The Secondary Entrance Assessment (SEA) – is used to facilitate the placement of students in secondary schools throughout Trinidad and Tobago and is comprised of three papers in *Creative Writing, Mathematics and Language Arts*
- Caribbean Secondary Education Certificate (CSEC) examinations certify the successful completion of the 5 years of secondary education (analogous to Grade 10) in a number of subjects.
- Caribbean Advanced Proficiency Examinations (CAPE) – are used to assess a student’s academic achievement at the end of each of the 6th and 7th years of secondary level education in Trinidad and Tobago (analogous to Grades 11 and 12). The CAPE leads to graduation certification and is intended for students who have completed their advanced level secondary education and wish to continue their studies at tertiary level institutions.

While these latter three examinations programs serve primarily the purposes of selection or certification, the purpose of the National Test is to improve educational quality by developing evidence for policy and curriculum decisions for the schools of the nation. Specifically the objectives of The National Test are to:

- Gather information for decision making at the school, district, and national levels
- Identify areas of the system that require further investigation
- Identify national norms
- Compare students’ performance by school and educational district
- Track student progress through school.

(Ministry of Education, 2005, p1)

It is expected that teachers along with administrators at the school and district levels will work together to interpret the results of the National Test and to devise strategies that will build upon strengths, and reduce deficiencies at the school and classroom levels.

This paper presents an overview of the findings from the preliminary analyses conducted on data generated by the National Test administration of 2006. This research was conducted by a consortium of research staff from the Ministry of Education and university researchers from the University of the West Indies in Trinidad and Tobago, and the University of Victoria in Canada.

The research consortium works to support the objectives of the National Test program by exploring the relationships between student achievement and the traits of schools, the classroom, the home, teachers and the student. The primary purpose of identifying significant correlates of student learning, and collecting and analyzing the data is to describe, predict, and ultimately influence educational processes and outcomes. The development of models of variables that serve as correlates of student learning should facilitate better and deeper understanding of student and school performance, and lead to better informed policy initiatives and educational programs. This is directly related to the Ministry of Education's strategic research directions in the area of learning outcomes, particularly in understanding and evaluating the achievement of students in the core areas of language arts, mathematics and science in relation to the contextual characteristics of schooling. The research focus of the consortium is based on the belief that a necessary step toward addressing these issues within a policy framework involves assembling, organizing and analyzing educational indicator data in ways that identify and incorporate linkages among student-based, school-based, and community-based variables. An initial challenge is to access, analyze and interpret the information in meaningful ways that will inform our understandings of schools and educational outcomes – and our initial work to meet this challenge is the focus of this paper.

The context

In the Republic of Trinidad and Tobago, there are two main categories of primary schools – public and private – located within eight educational districts. The two categories give rise to three types of primary schools. The public schools comprise the government primary schools and the denominational primary schools. In this report the government primary schools are referred to as Type 1 schools, the denominational primary schools as Type 2 schools, and the private primary schools as Type 3 schools.

The schools use the National Curriculum document and prepare their students for the National Tests and for the SEA examination at the end of Standard Five.

Formal reporting of the results of the National Test began in 2004. In 2004, the data obtained were analysed to obtain descriptive statistics, which were used to compare performances among educational districts and also to compare performance on the basis of gender. The 2004 analysis pointed to differences in performance among the educational districts with five of the eight educational districts performing below the national mean of 50.0. In addition, it was found that “in every single district, gender differences are larger in Language Arts than in Mathematics for both Standards 1 and 3” (Ministry of Education, 2004, p. iii). In 2005, the analysis was expanded to include differences among school types. In addition to the previous general trends, the findings revealed that the private primary schools consistently outperformed the public primary schools, with the denominational primary performing significantly better than the government schools.

Having obtained a general sense of what is happening at the primary levels investigated, it is evident that further investigation of student achievement in relation to school type and other significant factors is now required. The purpose of this study was, therefore, to build on and deepen the analysis done in previous years by exploring the relationships between student achievement and the traits of schools and the, the classroom, the home, teachers, and the student.

Data collection

The results of student performance on the 2006 National Test in Language Arts and Mathematics were obtained. In addition, questionnaires were administered to students, parents, teachers and school principals. These questionnaires were designed to obtain a range of background information, as well as information on a variety of factors that could impact on school performance.

The Data and Results

The data used in this study was collected from a sample (n=1 391) of Standard 3 students who completed The National Test in 2006. In addition to the achievement

measures in Language and Mathematics, response data was included from a series of questionnaires were administered to the students and their parents.

In Language there were significant differences in the mean performance of female and male students (Table 1), whereas there were no significant differences between female and male students on Mathematics. School type showed significant differences on both Language and Mathematics with Type 3 schools outperforming both Type 1 (effect sizes ≈ 1.0) and Type 2 schools (effect sizes ≈ 0.7) on both Language and Mathematics, and Type 2 schools outperforming Type 1 schools (effect sizes ≈ 0.3 on both Language and Mathematics). There were moderately strong correlations between Language and Mathematics achievement (0.77 overall) and these were relatively consistent across genders and across school types.

Table 1: Mean Results for National Test 2006 – Language and Mathematics

	n	Language Mean (SD)	Mathematics Mean (SD)	Correlation Language-Math
Total sample	1 391	26.11 (10.9)	26.39 (12.9)	0.77
Gender				
Female	696	28.54 (10.2) ^a	26.84 (12.5) ^b	0.77
Male	695	23.68 (11.0)	25.93 (13.4)	0.80
School type				
One	306	23.40 (10.9) ^c	22.48 (12.2) ^d	0.77
Two	999	26.30 (10.6)	26.87 (12.8)	0.76
Three	86	33.61 (10.5)	34.67 (12.4)	0.73

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

^b Female-Male difference on Mathematics is non-significant

^c Type differences are significant on Language – all pairs

^d Type differences are significant on Mathematics – all pairs.

To facilitate the analyses, the item responses by both students and parents to each questionnaire were subjected to principal component analysis to reduce the number of variables to a more manageable set. The resulting solutions were rotated orthogonally to generate factor scores which were then used in the subsequent regression analyses. From

the Student responses nine factors were derived from a total of 59 items accounting for 42% of variance in the student items (Table 2) and from the Parent responses nine factors were derived from a total of 49 items accounting for 51% of the variance in the parent items (Table 3). Complete item listings and factor loadings for both Student and Parent questionnaire results are tabulated in Appendix A.

The Student and Parent factors were then regressed on both Language achievement and Mathematics achievement to explore the relationships of student and home characteristics to achievement. Initially Student factors were regressed on the achievement measures separately, followed by regressions using the Parent factors – these results are reported in Appendix B (Tables A to D). However since the factors were derived from orthogonal rotation and therefore relatively non-correlated the final regressions were a combination of both Student and Parent factors (Tables 4 and 5). It should be noted that a preliminary regression was run with the Socio-Economic Index derived from the Parent responses to evaluate its influence on achievement results. Since the R^2 was relatively low – 0.038 for Language and 0.028 for Mathematics – it was decided not to condition the analyses by SEI and simply include SEI as one the predictors in the regression. It should also be noted that the mean SEI varied substantially across school type with the parents in Type 1 schools yielding a mean of 0.05, those of Type 2 schools a mean SEI of -0.11 and those in Type 3 schools a mean of 1.14. Further, the correlation between SEI and achievement measures, although low, are much higher for Type 3 schools ($r=0.28$) than for either Type 1 schools ($r=0.13$) or Type 2 schools ($r=0.15$).

The results of the regression of Student and Parent factors on Language achievement accounted for 41% of the variance in Language achievement for Standard 3 students on the National Test (Table 4). The extent to which students view themselves as competent readers (Reading Self Concept: $\beta = 0.29$) and have a positive focus towards school and reading (Reading Engagement: $\beta = 0.28$) are positively related to achievement in Language. Student perceptions of teacher encouragement, attention and expectations are

Table 2: Student Factors

Teacher Engagement

Items include: My teacher praises my effort when I work hard.
My teacher expects me to do my best all of the time
My teacher really listens to what I have to say

Reading Self-concept

Items include: I am a __ (poor/fair/good/very good) ___ reader
My friends think that I am a __ (poor/fair/good/very good) ___ reader
I read __ (a lot better than /a little bit better than/about the same/not as well as) ___
my friends

View of Reading

Items include Reading a book is something I _ (never/not very often/a few times/always) like
to do
People who read a lot are _ (very interesting/interesting/not very
interesting/boring)_.
Knowing how to read well is _ (not important/a little important/important/very
important)___.

Parent Involvement

Items include: How often does a parent or adult, living with you, wait for you at home after
school?
How often do a parent or adult living with you, make sure you are prepared for
school?
How often does a parent or adult living with you praise you for doing well at
school?

Teacher Care

Items are: My teacher cares if I don't do my work in class.
My teacher cares if I get low scores in class.

Attitude to School

Items include: I often count the minutes until the class ends.
I 'm bored in school.
I wish I did not have to go to school.

Writing at home

Items include: How often did you write in a private diary or journal outside of school?
How often did you write stories or letters for fun outside of school?
How often did you write e-mails to your friends or family?

Writing Activity

Items include: For this school year how often did you write a story?
For this year, how often did you write letter?
How often do you organize your story or letter before you write

Reading Engagement

Items include: I worry about what other children think about my reading
I would like for my teacher to read books out aloud to the class
I am glad to go back to school after vacation.

Table 3: Parent Factors

Reading Encouragement

- Items include: How often did you or someone else in your home listen to your child read aloud?
How often did you or someone else in your home encourage your child to read?
How often did you or someone else in your home encourage your child to write?

Reading Readiness

- Items include: When your child began Primary School how well could he /she read some words?
When your child began Primary School how well could he /she read sentences?
When your child began Primary School how well could he /she write some words?

Socio-Economic Index

- Items include: About how many books are there in your home?
What is the highest level of education completed by the child's father?
What kind of work does the child's father?
Compared with other families, how well off do you think your family is financially

Reading at Home

- Items include: When you are at home, how often do you read for work
When you are at home, how often do you read for enjoyment?
When you are at home, how often do you read for to get news?

School Engagement

- Items are: My child's school includes me in my child's education
My child's school cares about my child's progress in school
My child's school does a good job in helping my child become better in reading

Early Reading

- Items include: Before your child began Primary School, how often did you read a book to him or her?
Before your child began Primary School, how often did you play with alphabet toys etc. with him or her?
Before your child began Primary School, how often did you talk about things what you had read with him or her?

Parent Reading Attitude

- Items are: I read only if I have to.
I read only if I need information.
In a typical week, how much time do you usually spend reading for yourself at home?

Pre-School

- Items are: Did your child attend Pre-school?
How long was your child in pre-school?
How old was your child when he/she began Primary School?

Parent Reading Activity

- Items are: I like talking about books with other people.
I like to spend my spare time reading.
Reading is an important activity in my home.
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also positively related to higher levels of Language achievement (Teacher Engagement: $\beta = 0.19$). Further, student perceptions of teachers caring about their school performance was related to Language achievement (Teacher Cares: $\beta = 0.08$). The extent to which students perceive their parents involved with their school-related activities such as homework, school focus and preparation is positively related to Language achievement (Parent Involvement: $\beta = 0.10$). Student attitude towards attending school in general was related to Language achievement – students indicating negative attitude tended to lower levels of achievement (Attitude to School: $\beta = 0.16$). The amount of writing activities that students reported to have engaged in was related to Language achievement (Writing Activity: $\beta = 0.10$). The extent to which students reported that they liked reading and read outside of school was not related to Language achievement (View of Reading: $\beta = n.s.$), nor was the extent of student reported writing activities outside of school (Writing at Home: $\beta = n.s.$).

Table 4: Regression of Student and Parent Factors on LANGUAGE

Variable	B	SE _B	β	p
Constant	26.19	0.23	-	.000
Student factors				
Teacher engagement	2.06	0.23	0.19	.000
Reading self-concept	3.10	0.24	0.29	.000
Parent involvement	1.13	0.23	0.10	.000
Teacher cares	0.87	0.23	0.08	.000
Attitude to School	1.77	0.23	0.16	.000
Writing Activity	1.07	0.23	0.10	.000
Reading Engagement	3.00	0.24	0.28	.000
Parent factors				
Reading readiness	2.26	0.23	0.21	.000
Socio-economic index	1.41	0.23	0.13	.000
School engagement	1.03	0.23	0.10	.000
Early reading	0.60	0.23	0.06	.009
Parent reading attitude	0.78	0.23	0.07	.001
Pre-school	0.69	0.23	0.06	.003
<hr/>				
$R^2 = 0.41$				

In relation to Language achievement, six of the Parent factors had a significant relationship. The extent to which students could read and write before entry to school, as reported by parents, was related to Language achievement (Reading Readiness: $\beta = 0.21$). A related factor – the extent of reading-based activities at home before entry to primary school – was positively related to Language achievement (Early Reading: $\beta = 0.06$). And attendance in a pre-school environment was also related to achievement in Language (Pre-School: $\beta = 0.06$). The reported attitude of parents towards reading was related to the child's Language achievement (Parent Reading Attitude: $\beta = 0.07$). The parent reported levels of education, employment and financial status was related to Language achievement (Socio-Economic Index: $\beta = 0.13$). Somewhat counter intuitively, the extent to which parents reported that they or another adult in the home listened to or talked with the child about their reading, or read with the child (Reading Encouragement) did not have a significant relationship to Language achievement. The extent of reading reported by parents (Reading at Home) and the kinds of reading they did (Parent Reading Activity) were not significantly related to Language achievement of these students.

The regression of the Student and Parent factors on Mathematics achievement generated similar results (Table 5) as those from the Language analysis. Overall 31% of the variance in Mathematics achievement was accounted for by the Student and Parent factors. The significant predictors are also similar. The Student factors related to Mathematics achievement were Teacher Engagement ($\beta=0.19$), Reading self-concept ($\beta=0.20$), Parent involvement ($\beta=0.10$), Attitude to school ($\beta=0.13$), Writing activity ($\beta=0.07$), Writing at home ($\beta=0.10$), and Reading engagement ($\beta=0.28$). The Parent factors significantly related to Mathematics achievement were Reading encouragement ($\beta=0.06$), Socio-economic index ($\beta=0.11$), School engagement ($\beta=0.08$), Parent reading attitude ($\beta=0.07$), and Pre-school ($\beta=0.05$). Three differences to the Language results are the non-significance of the Parent factors of Reading readiness and Early reading, and the non-significance of the Student factor related to student perceptions of his/her Teacher caring.

Table 5: Regression of Student and Parent Factors on MATHEMATICS

Variable	B	SE _B	β	p
Constant	26.49	0.29	-	.000
Student factors				
Teacher engagement	2.50	0.30	0.19	.000
Reading self-concept	2.61	0.30	0.20	.000
Parent involvement	1.35	0.30	0.10	.000
Attitude to School	1.60	0.29	0.13	.000
Writing at Home	0.87	0.30	0.07	.003
Writing Activity	1.29	0.29	0.10	.000
Reading Engagement	3.68	0.30	0.28	.000
Parent factors				
Reading encouragement	0.68	0.26	0.06	.010
Socio-economic index	1.52	0.30	0.11	.000
School engagement	0.97	0.30	0.08	.001
Parent reading attitude	0.95	0.30	0.07	.001
Pre-school	0.67	0.30	0.05	.024

$R^2 = 0.31$

In order to further explore these results, student and parent scores were aggregated at the school level along with achievement results to generate mean scores for each school included in the analyses. It must be noted that the data set was reduced from 89 schools to a total of 56 schools – only those schools with at least 10 students in the data set were included in the analysis. The regression of student and parent factors at the school level show strong linkage to achievement with an R^2 of 0.71 for mean school achievement in Language (Table 6) and 0.62 in Mathematics (Table 7). It should be noted that at the school level the socio-economic index was not a significant predictor of school level performance in either Language or Mathematics achievement. However both students’ academic focus and writing activities in school were significantly predictive of school level achievement – as were parent reported averages of school engagement, reading readiness and reported levels of pre-school attendance.

Table 6: Regression of School Average Scores of Student and Parent Factors on LANGUAGE Achievement

Variable	B	SE _B	β	p
Constant	26.31	0.53	-	.000
Student factors				
Writing Activity	4.85	1.02	0.38	.000
Reading Engagement	5.75	1.26	0.40	.000
Parent factors				
Reading Readiness	8.91	1.96	0.40	.000
School engagement	2.89	1.45	0.16	.050
Pre-school	5.75	1.79	0.26	.002

$$R^2 = 0.71$$

Table 7: Regression of School Average Scores of Student and Parent Factors on MATHEMATICS Achievement

Variable	B	SE _B	β	p
Constant	26.43	0.74	-	.000
Student factors				
Writing Activity	4.14	1.43	0.27	.006
Reading Engagement	7.14	1.82	0.41	.000
Parent factors				
Reading readiness	6.67	2.72	0.25	.018
School engagement	4.32	2.03	0.19	.038
Early reading	6.54	2.64	0.23	.017
Pre-school	5.99	2.49	0.22	.020

$$R^2 = 0.62$$

The analyses of school-level results demonstrate strong relationships between school-mean achievement in language and mathematics and student and parent traits and perceptions. However these are trends in the data and do not pre-determine achievement status of a specific school. For example, although Type 3 schools generally outperform Types 1 and 2 schools (Table 1), the top five schools in Language achievement include two Type 3 schools, two Type 2 schools and one Type 1 school. So we find that although

there is a large effect size in regard to school type in relation to Language achievement at least one school does not conform to this trend.

Discussion

It is evident 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. These skills are fundamental to academic performance in the long term. So by knowing something about the relationships of a student's reading readiness, self-concept, academic focus and perceptions of teacher engagement we can better predict success in school. And this can lead to informed policy initiatives and instructional enhancements developed and implemented to improve student achievement and overall school performance. By knowing about relationships of parent encouragement and attention to the academic activities of their children, and parental attitudes towards reading in general, better communications of schools and parent could be developed to enhance these attitudes and activities – leading to improved achievement by the students. These results show important relationships for young students (Standard 3) who have a number of years of school engagement ahead of them. So steps taken now could show beneficial effects within the life cycle of a public school student. The results suggest that the general attention paid to schooling by students, parents and teachers is related to higher levels of achievement. Perhaps by developing school-based initiatives to raise awareness of the potential importance of academic engagement – academic focus by students, enhanced caring and encouragement by both teachers and parents – could lead to enhanced achievement by students and higher levels of school performance in language and mathematics. The enhanced focus on schooling could also lead to better perceptions of the values of education in later life and decrease the current levels of drop-out, particularly by male students in Trinidad and Tobago who have relatively high levels of dropout as reported in a recent study (George, 2006).

As noted above, the results show that a number of accessible student and parent factors do show significant relationships to achievement. These attitudes and perceptions can be influenced by the school and they count in the sense that it is plausible that enhancing say, students' reading readiness, an improvement in Language achievement

could be anticipated. Further, these student and parent factors cross over from Language to Mathematics achievement suggesting they have a general relationship to academic performance. It seems reasonable to suggest that it would be beneficial to consider ways in which students' reading readiness, reading engagement, reading self-concept, and perceptions of teacher engagement could be enhanced. Attention could also be paid to parental perceptions and actions such as parental school engagement, reading attitude and use of pre-school for their children – this could lead to improved student achievement.

It is also shown that a factor such as the socio-economic index is significantly related to achievement although family economic, educational and vocational levels are not accessible to educational policy intervention. However in future rounds of analyses we will be conducting multi-level analysis using teacher and school (principal) level perceptions, attitudes and traits to investigate traits which could modulate the effects of SEI on student achievement and identify those teachers or schools that enhance equity of achievement across students from variant socio-economic backgrounds. By identifying these teachers and schools we should be able to learn the kinds of instructional and organizational approaches that could be generalized across schools in Trinidad and Tobago.

In suggesting the need for the development of evidence-based policy and the implementation of educational programs and approaches, we are keenly aware of the need to monitor and evaluate the effects of any such developments. The current research and the results for the National Test could be used as a baseline measure of educational performance in Trinidad and Tobago. The nature and levels of future achievement, student and parental factors, and school traits could then be measured, analyzed and compared to monitor educational performance in Trinidad and Tobago schools, and to further our understandings of student achievement and school performance.

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 environment. Another initiative could focus on teacher caring and encouragement – creating professional development programs for teachers to enhance their caring and encouraging behaviours in the classroom aimed particularly at schools that have been identified as having lower levels of both student achievement and student perceptions of teacher caring and encouragement. A third initiative based on the results of this research would be aimed at parents – to encourage parental engagement in their children’s schooling and achievement.

Another research focus should be the further investigation of the substantial differences (effect sizes greater than 0.7) between the different types of schools in Trinidad and Tobago. There are certainly significant differences between school types in terms of socio-economic status as reported by parents – with the highest performing schools also having the parents with the highest level of socio-economic status – but can differential effects be reduced leading to more equitable schooling for Trinidad and Tobago’s children? Further analyses of our data have revealed specific schools with lower levels of SEI that have levels of achievement in the top 10% of the nation’s schools. In depth investigation of these schools could reveal clues about the operative characteristics of their programs and pedagogy that are related to high levels of student achievement that could be generalized across all schools. Further research into school traits such as teacher qualifications and skills, and school resources and their relationships to achievement could help identify those aspects of schooling that are related to student achievement and are accessible to policy intervention.

Many of the factors significantly related to student achievement in this study have a fair degree of commonality in that they are centred on the attention given by students and parents to what could be termed the general elements of schooling: reading engagement; student self-regard for their own abilities (View of Reading in this case); parental encouragement of student engagement with their studies; student perceptions of teacher caring and encouragement; and parental perceptions of feeling welcomed to and engaged with the school. When aggregated at the school level to yield school traits, school level performance is also strongly related. These factors could be viewed as a generalized positive academic focus – awareness and attention to schooling by students, parents and teachers. Perhaps steps could be taken that could help build positive

influence on student achievement – help students attend more closely to school-based learning activities and environmental elements, promoting teacher behaviours that are likely to be viewed by students as caring and encouraging, and have the school consciously take steps to further parental perceptions of participation.

The adoption of an evidence-based approach to policy development and curricular implementation is a positive step toward better education in Trinidad and Tobago: higher achievement, more equitable schooling, and more enhanced access and engagement by students, teachers and parents.

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Student Item Factors

FACTOR 1

Teacher Engagement

ITEM5A	0.419	My teacher encourages me to do extra work when I don't understand something?
ITEM5B	0.543	My teacher praises my effort when I work hard.
ITEM5E	0.702	My teacher expects me to do my best all of the time
ITEM5F	0.610	My teacher expects me to complete my homework every night.
ITEM5G	0.680	My teacher thinks that it is important that I do well in class
ITEM6D	0.452	I usually look forward to the class every day.
ITEM6E	0.512	I work hard to do my best in the class
ITEM7A	0.557	My teacher really listens to what I have to say
ITEM7B	0.665	My teacher helps me to improve if I am behind.
ITEM7C	0.629	My teacher notices if I have trouble learning something
ITEM7D	0.613	My teacher is willing to give extra help on schoolwork if I need it
ITEM7E	0.734	My teacher believes that I can do well in school
ITEM8A	0.387	I am glad to go back to school after vacation

FACTOR 2

Reading Self-concept

ITEM1A	-0.793	My friends think that I am a ___ reader
ITEM1B	-0.695	I read ___ my friends
ITEM1C	-0.547	When I come to a word I don't know, I can ___ figure it out
ITEM1D	-0.650	When I am reading by myself, I understand ___ I read
ITEM1E	0.836	I am a ___ reader
ITEM1G	0.480	When my teacher asks me a question about what I read, I ___ think of an answer.
ITEM1I	0.307	When I am in a group talking about stories I ___ talk about my ideas
ITEM1J	0.764	When I read out loud I am ___ reader

FACTOR 3

View of Reading

ITEM2A	0.488	Reading a book is something I ___ like to do
ITEM2B	-0.549	My best friend thinks that reading is ___.
ITEM2C	0.350	I tell my best friends about good books I read
ITEM2D	-0.565	People who read a lot are ___.
ITEM2E	-0.531	I think a Library is ___ place to spend time
ITEM2F	0.386	Knowing how to read will is ___.
ITEM2G	0.615	I think reading is ___ way to spend time
ITEM2H	0.461	When I grow up I will spend ___ of my time reading
ITEM2I	-0.341	I would like for my teacher to read books out aloud to the class
ITEM2J	-0.571	When someone gives me a book as a present I feel ___.

FACTOR 4

Parent Involvement

ITEM9A	0.422	How often does a parent or adult, living with you, wait for you at home after school?
ITEM9B	0.561	How often do a parent or adult living with you, make sure you are prepared for school?
ITEM9C	0.548	How often does a parent or adult living with you, make sure you get to school on time?
ITEM9D	0.430	How often does a parent or adult living with you, is somewhere that you can get in touch with any time you need to?

ITEM10A	0.514	How often does a parent or adult living with you help you with your homework?
ITEM10B	0.675	How often does a parent or adult living with you check to see if you have done your homework?
ITEM10C	0.565	How often does a parent or adult living with you praise you for doing well at school?
ITEM10D	0.556	How often does a parent or adult living with you encourage you to work hard at school?

FACTOR 5**Teacher Care**

ITEM5C	0.806	My teacher cares if I don't do my work in class.
ITEM5D	0.832	My teacher cares if I get low scores in class.

FACTOR 6**Attitude to School**

ITEM6A	-0.559	I often count the minutes until the class ends.
ITEM6C	-0.662	I am usually bored with what goes on in the class.
ITEM8B	-0.697	I 'm bored in school.
ITEM8D	-0.574	I wish I did not have to go to school.
ITEM8E	-0.468	I wish I could go to a different school.

FACTOR 7**Writing at home**

ITEM4A	0.496	How often did you write in a private diary or journal outside of school?
ITEM4B	0.465	How often did you write stories or letters for fun outside of school?
ITEM4C	0.692	How often did you write e-mails to your friends or family?
ITEM4D	0.704	How often do you use a computer at home to make changes to the story or letter that you are writing at home?
ITEM4E	0.347	When you write at home how often did your parent talk to you about what you were writing?

FACTOR 8**Writing Activity**

ITEM3A	0.634	For this school year how often did you write a story?
ITEM3B	0.658	For this year, how often did you write letter?
ITEM3C	0.367	How often do you organize your story or letter before you write (for example make an outline, draw a chart)?
ITEM3D	0.388	How often did you make changes to your story or letter to fix mistakes/ errors and improve it?
ITEM3E	0.405	How often did you work with other students in pairs or small groups to discuss and improve your story or letter?

FACTOR 9**Reading Engagement**

ITEM1F	-0.561	I worry about what other children think about my reading
ITEM2I	-0.389	I would like for my teacher to read books out aloud to the class.
ITEM6B	0.447	I get so interested in my work, I did not want to stop..
ITEM8A	0.422	I am glad to go back to school after vacation.

Parent Item Factors**FACTOR 1****Reading Encouragement**

ITEM7AP	0.565	How often did you or someone else in your home listen to your child read aloud?
ITEM7BP	0.476	How often did you or someone else in your home talk to your child about things we have done?
ITEM7CP	0.646	How often did you or someone else in your home talk with your child about what he/she is reading on his/her own?
ITEM7DP	0.471	How often did you or someone else in your home talk with your child about what I am reading(or what someone else in my home is reading)?
ITEM7EP	0.638	How often did you or someone else in your home discuss your child's classroom reading work with him/her?
ITEM7FP	0.226	How often did you or someone else in your home go to the library or bookstore with your child?
ITEM7GP	0.728	How often did you or someone else in your home encourage your child to read?
ITEM7HP	0.709	How often did you or someone else in your home encourage your child to write?

FACTOR 2**Reading Readiness**

ITEM6AP	0.705	When your child began Primary School how well could he /she recognise most of the letters of the alphabet?
ITEM6BP	0.810	When your child began Primary School how well could he /she read some words?
ITEM6CP	0.804	When your child began Primary School how well could he /she read sentences?
ITEM6DP	0.735	When your child began Primary School how well could he /she write letters of the alphabet?
ITEM6EP	0.783	When your child began Primary School how well could he /she write some words?

FACTOR 3**Socio-Economic Index**

ITEM12P	0.441	About how many books are there in your home?
ITEM13mP	0.644	What is the highest level of education completed by the child's father, stepfather or male guardian?
ITEM13fP	0.640	What is the highest level of education completed by the child's mother, stepmother, or female guardian?
ITEM15mP	0.532	What kind of work does the child's father, stepfather or male guardian do for their main jobs?
ITEM15fP	0.610	What kind of work does the child's mother, stepmother or female guardian do for their main jobs?
ITEM16P	-0.492	Compared with other families, how well off do you think your family is financially

FACTOR 4**Reading at Home**

ITEM10AP	0.557	When you are at home, how often do you read for work
ITEM10BP	0.553	When you are at home, how often do you read for enjoyment
ITEM10CP	0.483	When you are at home, how often do you read for to get news
ITEM10DP	0.635	When you are at home, how often do you read for my education/school
ITEM10EP	0.526	When you are at home, how often do you read for other reasons

FACTOR 5**School Engagement**

ITEM8AP	0.772	My child's school includes me in my child's education
ITEM8CP	0.848	My child's school cares about my child's progress in school
ITEM8DP	0.798	My child's school does a good job in helping my child become better in reading

FACTOR 6**Early Reading**

ITEM2AP	-0.639	Before your child began Primary School, how often did you or someone else in your home read a book to him or her?
ITEM2BP	-0.659	Before your child began Primary School, how often did you or someone else in your home tell stories to him or her?
ITEM2CP	-0.620	Before your child began Primary School, how often did you or someone else in your home sing songs with him or her?
ITEM2DP	-0.636	Before your child began Primary School, how often did you or someone else in your home play with alphabet toys etc. with him or her?
ITEM2EP	-0.515	Before your child began Primary School, how often did you or someone else in your home talk about things you had done with him or her?
ITEM2FP	-0.604	Before your child began Primary School, how often did you or someone else in your home talk about things what you had read with him or her?
ITEM2GP	-0.658	Before your child began Primary School, how often did you or someone else in your home play word games with him or her?
ITEM2HP	-0.675	Before your child began Primary School, how often did you or someone else in your home write letters or words with him or her?
ITEM2IP	-0.646	Before your child began Primary School, how often did you or someone else in your home read aloud signs and labels with him or her?

FACTOR 7**Parent Reading Attitude**

ITEM9P	-0.439	In a typical week, how much time do you usually spend reading for yourself at home, including books, magazines, newspapers and materials for work
ITEM11AP	0.778	I read only if I have to.
ITEM11DP	0.781	I read only if I need information.

FACTOR 8**Pre-School**

ITEM3P	0.628	Did your child attend Pre-school?
ITEM4P	-0.366	How long was your child in pre-school?
ITEM5P	0.749	How old was your child when he/she began Primary School?

FACTOR 9**Parent Reading Activity**

ITEM11BP	0.675	I like talking about books with other people.
ITEM11CP	0.654	I like to spend my spare time reading.
ITEM11EP	0.545	Reading is an important activity in my home.

Table A: Regression of Student Factors on LANGUAGE

Variable	B	SE _B	β	p
Constant	26.12	0.24	-	.000
Teacher engagement	2.30	0.24	0.21	.000
Reading self-concept	3.91	0.24	0.36	.000
Parent involvement	1.38	0.24	0.13	.000
Teacher cares	1.12	0.24	0.10	.000
Attitude to School	1.92	0.24	0.18	.000
Writing Activity	0.93	0.24	0.09	.000
Reading Engagement	3.51	0.24	0.32	.000

$R^2 = 0.34$

Table B: Regression of Student Factors on MATHEMATICS

Variable	B	SE _B	β	p
Constant	26.40	0.30	-	.000
Teacher engagement	2.69	0.30	0.21	.000
Reading self-concept	3.28	0.30	0.25	.000
Parent involvement	1.53	0.30	0.12	.000
Attitude to School	1.76	0.30	0.14	.000
Writing Activity	0.68	0.30	0.05	.024
Writing at Home	1.10	0.30	0.09	.000
Reading Engagement	4.22	0.30	0.33	.000

$R^2 = 0.26$

Table C: Regression of Parent Factors on LANGUAGE

Variable	B	SE _B	β	p
Constant	26.21	0.26	-	.000
Reading encouragement	0.68	0.26	0.06	.010
Reading readiness	3.44	0.26	0.32	.000
Socio-economic index	2.12	0.26	0.20	.000
Reading at home	0.53	0.26	0.05	.043
School engagement	1.29	0.26	0.12	.000
Early reading	1.39	0.26	0.13	.000
Parent reading attitude	1.47	0.26	0.14	.000
Pre-school	0.97	0.26	0.09	.000

$R^2 = 0.20$

Table D: Regression of Parent Factors on MATHEMATICS

Variable	B	SE _B	β	p
Constant	26.52	0.33	-	.000
Reading readiness	3.16	0.33	0.32	.000
Socio-economic index	2.15	0.33	0.17	.000
School engagement	1.26	0.33	0.10	.000
Early reading	1.15	0.33	0.09	.000
Parent reading attitude	1.60	0.33	0.12	.000
Pre-school	0.86	0.33	0.07	.009

$R^2 = 0.13$