Solomon Islands Consultancy

Solomon Islands Standardised Tests of Achievement – (SISTA)

English and Mathematics

Year 4 and Year 6

Report 1- MAIN STUDY 2013

December 2013

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ATTACHMENTS

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Acronyms

AusAID	Australian Agency for International Development
ACER	Australian Council for Educational Research
CDU	MEHRD Curriculum Development Unit
DFAT	Department of Foreign Affairs and Trade
Conquest	ACER Item analysis software
IRT	Item Response Theory
ICC	Item Characteristic Curve
MEHRD	Ministry of Education and Human Resource Development
NAPLAN	National Assessment Program Literacy and Numeracy (Australia)
NESU	National Examinations and Years Unit
RUMM	Rasch Unidimensional Measurement Model (Andrich) – analysis software
SINU	Solomon Islands National University
SPBEA	Secretariat to the Pacific Board of Educational Assessment
SISTA	Solomon Islands Standardised Tests of Achievement
USP	University of the South Pacific

Contract Scope

The key Goals and Inputs of contract 69172 were articulated in Schedule 1 of the Scope of Services.

The heads of the contract have been identified below as a reference and checklist for compliance with the assignment as described in the detail of the following report.

Goals

1.3   To enable NESU/MEHRD to disseminate the results of the SISTA tests to stakeholders through item analysis on the Solomon Islands Standardised Test of Achievement (SISTA) at year 4 and 6.

Outputs

   a. Provide NESU with advice on sampling, development of data entry templates, preparation of report templates and descriptors for student reports
   b. Technical psychometric analysis of SISTA 2013 data
   c. Preparation of stakeholder reports, facilitation of in-country capacity building workshops and presentation of report to MEHRD on the analysis of year 4 and year 6 Literacy and Numeracy SISTA 2013
   d. NESU expects that the appropriate software if needed to be used for the data entry will be provided with and as a part of the services to be provided by the psychometrician
   e. Assist to build NESU staff's capacity to conduct item analysis from SISTA data for the purposes of identifying pupil's learning difficulties in the subjects they are tested; make relevant sections of MEHRD aware of pupils' learning difficulties and recommend strategies and interventions to improve the teaching and learning processes in order to improve student's learning achievements particularly in the lower Years (1 – 4) of primary schooling ;provide feedback on what students can and cannot do in literacy and numeracy expected outcomes to Education Authorities, schools and individual students and parents.

Inputs

2.4   Under the supervision of the Director of the national Examination and Standards Unit, the specialist will provide the following inputs:

   a. Data entry and analysis of student test papers from Year 4 and Year 6 SISTA (Literacy and Numeracy) test sample in the application of Rasch Modelling and other psychometric techniques.
   b. Facilitate training workshops in marking, entry of data and use of applicable psychometric techniques in National Assessments
   c. Provide on the job training to NESU staff during the assignment where necessary
   d. Advise and assist the management of data at NESU
   e. Facilitate development (new) and review (existing) of item descriptors of the existing Year 4 and Year 6 Assessment instruments (Literacy and Numeracy) through consultations with NESU and Literacy and Numeracy panel members.

INTRODUCTION

The SISTA program is a key monitoring tool of the Solomon Islands Ministry of Education and Human Resource Development and has the capacity to serve multiple functions to a wide range of educational stakeholders.

An imperative of the SISTA program is that it provides the Minister and his policy makers with valid summaries regarding the health of the system and reliable measures of how well students are achieving the intended curriculum of the Ministry. A significant improvement of this analysis of the Year 4 and Year 6 SISTA tests is the development of a single Standards Referenced Scale that enables measures of growth between Year 4 and Year 6 and estimates of improvement in achievement over time to be provided.

Although the results provide summative information of key policy makers to inform data driven interventions and strategies this element of the assessments is only a single use of the data.

The SISTA results contain a wealth of data about how well students have responded to items that are indicators of curriculum attainment, and the stakeholders who are most vitally interested in this level of information are principals, teachers, students and parents who can review the information and formulate pupil level strategies most appropriate to their particular circumstances.

For the first time these analyses of the SISTA data provide reports for participating schools, classroom teachers and students that can be used to inform the current learning levels and to develop learning strategies to improve individual student achievement.

BACKGROUND

The implementation of the 2013 SISTA assessment is the culmination of three years' work that commenced with a review of the Year 4 SISTA tests and the data from the 2010 implementation of the assessments. This review identified a number of areas in which the instruments might be improved to provide a better estimate of student ability and more diagnostic information regarding what students have and have not achieved in the targeted Year level.

The modification of the previous SISTA instruments has been a transitional process so that a direct link between the 2013 test and results can be observed and at school level with previous assessments and there is not a major difference in the nature and structure of the tests that may be disruptive to the assessment process.

The face validity of the 2013 SISTA tests has been maintained through a number of processes including;

      a. Direct item level linking of items to curriculum outcomes;
      b. Review by curriculum experts to ensure items are within the scope and sequence of the target population's learning experiences;
      c. A field trial of the Year 4 instruments to review the psychometric and technical features of the individual items and the tests as a whole;
      d. Engagement of members of NESU, SINU and CDU in reviewing items and modifying them as appropriate to make them technically and editorially robust.

These panels have endorsed the instruments as fair and valid test of the implemented curriculum in Years 4 and 6 and that the content and relative difficulty of the items provide a reasonable reflection of the achievement of the target outcomes for each Year level test.

EXECUTIVE SUMMARY

Key Findings

Key Finding 1

- The achieved sample was representative of the national demographic and provides a reliable model for the estimation of national and provincial results**.**

Key Finding 2

- The test constructs align well with the Standard 4 and Standard 6 curriculum outcomes of Year 4 and Year 6. The review processes to ensure items are appropriate and in accord with the scope and sequence documents provide evidence of the face validity of the SISTA 1 and SISTA 2 test instruments.

Key Finding 3

- The reliability statistic (Cronbach α) of each test is in the good to strong range with the exception of the English Reading strand of Year 6.

Key Finding 4

- The tests have scaled well and the embedded common items have functioned sufficiently consistently to enable comparisons between Year 4 and Year 6 performances to be estimated.

- The English Literacy scales have been developed using the sub-strands of Reading and Language which have performed unidimensionally and consistently at each Year level.

- Writing has been analysed separately as it functions quite differently to the other English sub domains

- The Writing results are relatively poor compared to those of Reading, Language and Mathematics

Key Finding 5

- The SISTA 1 tests in English and Mathematics have been well targeted to the sample populations and have generated a good distribution of item difficulties that cater to a wide range of student abilities.

- There are some 'gaps' in the range of item difficulties in the SISTA 2 tests.

Table ES1 -Summary of percentages within Standards Levels by subject and year level

Year 4	Critical Level %	Below Expected level – emerging %	At Expected Level %	At or Above expected standard %
English Literacy	7.6	26.0	33.0	66.4
Reading	14.8	21.4	30.0	63.8
Language	9.4	25.9	32.3	64.6
Writing	39.6	28.1	12.5	32.3
Mathematics	9.5	23.8	39.6	66.7

Year 6	Critical Level %	Below Expected level – emerging %	At Expected Level %	At or Above expected standard %
English Literacy	9.3	28.4	34.5	62.3
Reading	10.8	23.8	24.9	65.4
Language	9.4	28.4	36.9	62.2
Writing	26.2	14.7	22.2	59.1
Mathematics	3.3	10.1	26.5	86.6

Key Finding 6

- The performance of the items of each test, and of the common items designed to measure the growth between Year 4 and Year 6 have functioned adequately and enabled Literacy and Mathematics scales to be developed and Standards relative to curriculum outcomes to be described.

Key Finding 7

- The summary results by Level are generally consistent with those produced by other assessments including previous SISTA assessments and the PILNA pilot.

- The observed improvements in overall performances may be attributed to:
  a. Better tests and improved alignment of the tests with the target population; and
  b. In the case of English Literacy the disaggregation of the Writing scale from the other strands of English.

Table ES2 Rasch test statistics – English estimates of mean student ability

Year	Domain	N	Minimum Score	Maximum Score	Mean	Std. Deviation	Growth
Year 4	English	2843	168.3	631.7	399.6	58.3	
Year 6	English	2949	255.8	626.9	445.0	52.7	45.4
Year 4	Reading	2843	208.7	588.2	401.2	69.6	
Year 6	Reading	2949	243.4	645.5	449.6	61.7	47.6
Year 4	Language	2843	196.8	605.8	398.1	59.0	
Year 6	Language	2949	256.6	626.6	443.0	56.7	44.9
Year 4	Writing	2843	145.0	650.0	281.7	95.0	
Year 6	Writing	2949	145.0	650.0	384.2	101.1	102.5

Table ES3 Rasch test statistics – Mathematics estimates of mean student ability

Year	Domain	N	Minimum Score	Maximum Score	Mean	Std. Deviation	Growth
Year 4	Mathematics	2863	173.0	634.8	393.5	52.0	
Year 6	Mathematics	2858	241.0	712.8	485.8	57.8	92.3

Key Finding 8

- The Writing results of Year 4 are very poor and although there is significant improvement between Year 4 and Year 6 the results of Year 6 are still well below the expected level.

- The Year 6 sample was functioning, on average in Writing, at a level that could be reasonably expected Year 4 students.

Key Finding 9

- There is significant growth in performance between Year 4 and Year 6 in Mathematics

Key Finding 10

- The difference between the mean performances of boys and girls in Literacy is marginal with girls slightly out-performing boys.

- In Writing girls significantly out-perform boys at both Year 4 and Year 6.

- In Mathematics there is no significant difference between the performance of boys and girls.

Key Finding 11

- There are significant differences between the mean performances of the students in rural schools compared to those in urban schools especially in the Literacy strands with urban students out-performing the rural students.

- Although still significant, and in favour of the urban students, the difference is not as great in Mathematics

Key Finding 12

- In the English literacy and Writing domains students of non government schools significantly out-perform the students of government schools.

- In Mathematics the differences between non government school students and government school students is not significant.

Key Finding 13

- Although the overall performance of the students from the schools sampled in the Honiara province is significantly better than the means results of the other provinces at each Year leve, the growth observed between Year 4 and Year 6 is significantly less in Honiara province than in each of the other provinces.

Key Finding 14

- As observed in the Reading strand the relative growth between Year 4 and Year 6 students is less in the Honiara province than each of the other provinces.

Key Finding 15

- There is significant improvement in Writing in each province between the mean performances of Year 4 and the Year 6 students.

Key Finding 16

- The improvement in the mean Mathematics performance of students between Year 4 and Year 6 is consistent across all provinces

Key Finding 17

- Year 4 students are developing skills in English Reading but have significant challenges in the skills associated with constructing and writing responses compared to those required in recognising a correct answer in a multiple choice item format.

Key Finding 18

- There are weaknesses in English language acquisition at Year 4 level relative to the expected outcomes articulated in the curriculum.

Key Finding 19

- The types of weaknesses observed in Year 4 Language are also present in Year 6.

Key Finding 20

- The item statistics indicate that by Year 6 most students tend to have control over the basic functions of addition and subtraction and its application to money when expressed in the traditional text book algorism format.

- In each of the common items that relate to basic operations there is evidence of significant improvement by Year 6 compared to Year 4 in the mean performances of students.

Key Finding 21

- The weaknesses in Fractions observed in Year 4 are still challenges in Year 6 Mathematics. Word problems are challenging for Year 6 students.

The Appendices to this report provide detailed information about the manner in which each of the SISTA items have performed including the manner in which they have performed in each province. This information can inform province level initiatives to improve student learning outcomes.

Included within the outputs of this consultancy are individual school and individual class reports that report the manner in which student s have performed in the assessments. This level of information can inform school specific initiatives to improve student learning outcomes.

RECOMMENDATIONS

Curriculum
Recommendation 1

- *That the development of writing skills be noted as a weakness at the national level and that strategies be developed by all contributors to students and teacher learning to improve student outcomes in the written form of English.*

Recommendation 2

- *That in Year 4 ONLY the concept of Fractions and its application to Money be included in the curriculum AND that more time be devoted in the scope and sequence programs to the mastery of the sub-strands components of Money.*

Teaching and Learning
Recommendation 3

- *That the pedagogy of teaching of writing as a subject be prioritised in teacher training AND that the use of criterion referenced assessment of writing be supported in teaching programs*

Professional Development
Recommendation 4

- *That the resources of USP, SINU, MEHRD Curriculum Unit and NESU be used to prepare Reading resources with associated assessment items to provide resources to assist teachers in the teaching and assessment of student Reading skills.*

Recommendation 5

- *That samples of student works from the 2013 SISTA assessment be annotated and provided to schools as samples of various standards of student writing and the use of the SISTA writing rubric as a tool to assist teaching and learning.*

Recommendation 6

- *That workshops be scheduled with key school level personnel, principals and curriculum leaders, in the manner in which the school level data from the SISTA analysis can be used to inform the dplanning of school development programs and individual class level interventions.*

Analysis and Psychometrics
Recommendation 7

- *That the Year 6 SISTA English paper include another reading passage targeting the weaker ability students AND that the majority of the items assessing the comprehension of these students in this passage are of multiple choice format.*

Recommendation 8

- *That, in the event that the SISTA X forms are used for future national sample assessments, the items locations detailed in Appendices 3 and 4 are used (anchored) to assess student abilities in the assessment using IRT methodologies.*

Recommendation 9

- *That, in the event that the SISTA Y forms are used for future national sample assessments, the test forms be revised to match the construct of the SISTA X forms, AND common items between the SISTA X and SISTA Y forms are included so that the Form Y results can be calibrated on the 2013 SISTA scale.*

Recommendation 10

- *That a review of the Year 6 Mathematics SISTA 2 X paper be conducted with a view to increase the number of slightly easier items and reduce the number of more difficult items in an attempt to better target the tests to the students and therefore maximise the information regarding their overall ability.*

TARGET/SAMPLE

Sample Frame

The sample frame for the 2013 SISTA assessments was provided by MEHRD from the central database. NESU excluded less than 5% of schools that were in accessible and ACER excluded a further 2% of schools with populations less than 5 students as these were considered inefficient numbers of cases for logistical/result benefit purposes.

Selection

The sample frame was explicitly stratified by Province and a senate strategy of 20 schools per stratum applied. In the cases of Rennell & Bellona Province all schools were sampled due to the small number of schools in the province, and in Temotu Province every second school was chosen following sorting by student population size (MOS). The sample was drawn using a two stage probability proportional to size methodology in which the first stage was school and the second stage students within school.

To assist in logistical resources the same selection of schools was applied to Year 6 as had been systematically selected for Year 4.

Overall the achieved samples by student of Year 4 and Year 6 were 80.7% and 89.7% respectively with 2862 Year 4 students and 2858 Year 6 students participating in the sample program. Tables 1 and 2 summarise the participation by Province, school and geo-location.

Table 1 Year 4 Achieved sample by Province, school and Geo-location

S4 Sample by Province	Location				
Province	Urban	Semi - Urban	Semi - Rural	Rural	Total
Central Islands	1	1	1	18	21
Choiseul	1			21	22
Guadalcanal	1	1		19	21
Honiara	18			2	20
Isabel	1			16	17
Makira & Ulawa				23	23
Malaita	1	1		19	21
Rennell & Bellona	1			6	7
Temotu	1			16	17
Western	1			24	25
Grand Total	**26**	**3**	**1**	**164**	**194**

Table 2 Year 6 Achieved sample by Province, school and Geo-location

S6 Achieved Sample by School	Location				
Province	Urban	Semi - Urban	Semi - Rural	Rural	Grand Total
Central Islands	1	1	1	17	20
Choiseul	1			20	21
Guadalcanal	2	1		19	22
Honiara	18			2	20
Isabel	1			19	20
Makira & Ulawa				20	20
Malaita	1	1	1	19	22
Rennell & Bellona	1			5	6
Temotu	1			13	14
Western	1			27	28
Grand Total	**27**	**3**	**2**	**161**	**193**

Key Finding 1

The achieved sample was representative of the national demographic and provides a reliable model for the estimation of national and provincial results.

ADMINISTRATION/MARKING/DATA ENTRY

School Administration

Test materials were delivered on time and the assessment delivered in schools on schedule. There were no reports of abnormalities in the implementation of the assessments that participated in the program.

It is notable in the information of Appendix 1 and Appendix 2 that there was some variation in the achieved sample compared to the intended sample. This may be a function of the currency of the enrolment data. One aspect of the program that is not controlled is the school level participation of students. The variation in participation may reflect some school based selection of students that may bias the results if there are cases in which principals have 'selected' only more able students to participate in the assessments.

Marking and data entry

Marking was performed under the direction of NESU with all items being hand marked and the student responses being annotated with scored of zero or one (0/1) to facilitate the entry by the data operators. Unfortunately the score '9' which had been reserved for 'non responses' to record the items that students were unable to attempt was not implemented in the first instance. This was resolved in subsequent data entry so that estimates of "non attempts" could be produced at item level.

Writing was marked by a team of specialised markers in the application of the rubric that had been developed and refined during the field trial conducted in March 2013.

TEST STRUCTURE

English – Reading, Language and Writing

The English tests at both Year 4 and Year 6 were grounded in the English syllabus documents with items matched to curriculum outcomes as appropriate to each Year level and taking account of the scope and sequence of the teaching program relative to the timing of the SISITA assessments in October 2013. Table 3 details the test constructs of the English papers for Year 4 and Year 6.

Table 3 – Test Constructs – English

Domain	Item types	Year 4		Year 6	
		Items	Points	Items	Points
Reading	Multiple Choice	10	13	8	8
	Constructed response	4	6	6	10
	READING SCALE		19		18
Language	Multiple Choice	12	12	6	6
	Constructed response	3	10	9	14
	LANGUAGE SCALE		22		20
TOTAL pts	LITERACY SCALE		41		38
Writing	Constructed response	8 criteria	30	8 criteria	30

Mathematics

The Mathematics tests at both Year 4 and Year 6 were matched exactly to the Mathematics syllabus documents with items matched to specific outcomes and the overall test divided into sub-strands that match the syllabus definitions and sub-strand order.

The scope and sequence of the intended curriculum as defined in the syllabus was considered in the determination of which items were appropriate to be assessed in the SISTA assessments delivered in October 2013. Table 4 provides detail of the Mathematics test constructs by Year level.

Table 4 – Test Constructs – Mathematics

Strand	Year 4		Year 6	
	Sub Strand	Items	Sub Strand	Items
Number	Number	7	Number	13
	Addition	6		
	Subtraction	6		
	Multiplication	4		
	Division	5		
Fractions	Fractions	4	Fractions	22
Geometry	Shapes	11	Shapes and Space	4
	Angles	2		
	Location	3		
Measurement	Measurement	6	Measurement	1
	Graphs	3	Graphs	8
	Time	4	Time Zones	1
Money	Money	7	Money	8
Word Problems			Word Problems	13
TOTAL pts		**68**		**70**

Key Finding 2

The test constructs align well with the Standard 4 and Standard 6 curriculum outcomes of Year 4 and Year 6. The review processes to ensure items are appropriate and in accord with the scope and sequence documents provide evidence of the face validity of the SISTA 1 and SISTA 2 test instruments.

TRADITIONAL STATISTICS

The analyses showed that the English tests at both Year 4 and Year 6 were relatively well targeted to each of the Year 4 and Year 6 student populations. The English tests were separately analysed as and English Literacy test and a Writing assessment as research in other large scale monitoring programs (e.g. NAPLAN) shows that these domains function quite differently at both individual student and

cohort levels. The English Literacy domain was then disaggregated to analyse Reading and language independently to investigate similarities and/or differences in performance in each and any inter-relationships that exist between the two sub-domains.

Table 5 provides a summary of the traditional raw score statistic of the English tests and disaggregates the overall English Literacy tests into the sub-strands of Reading, Language and Writing.

The reliability coefficients (Cronbach's α) in the English tests are in the good to strong range with the exception of the Year 6 Reading sub-strand.

Table 5 – Traditional test Statistics – English

Year	Domain	N	Reliability (Cronbach) α	Minimum Score	Maximum Score	Mean	Std. Deviation
Year 4	English	2843	0.89	0	40	19.8/41	8.1
Year 6	English	2949	0.86	1	36	17.3/38	6.7
Year 4	Reading	2843	0.84	0	18	9.4/19	4.3
Year 6	Reading	2949	0.73	0	17	7.0/18	3.1
Year 4	Language	2843	0.80	0	24	10.4/22	4.5
Year 6	Language	2949	0.80	0	20	10.2/20	4.3
Year 4	Writing	2843	0.96	0	30	7.3/30	5.7
Year 6	Writing	2949	0.96	0	30	13.7/30	6.5

Table 6 provides the traditional statistics for Mathematics for each of the Year 4 and Year 6 tests. Both tests display strong reliability statistics (>.90) and show that there is a wide range of scores achieved by students in each Year level.

Table 6 – Traditional test Statistics – Mathematics

Year	Domain	N	Reliability (Cronbach) α	Minimum Score	Maximum Score	Mean	Std. Deviation
Year 4	Mathematics	2863	0.92	1	67	32.7/68	11.8
Year 6	Mathematics	2858	0.93	1	69	37.6/70	13.0

Key Finding 3

The reliability statistic (Cronbach α) of each test is in the good to strong range with the exception of the English Reading strand of Year 6.

ITEM RESPONSE THEORY (RASCH) ANALYSIS AND SCALE DEVELOPMENT

Scale Development

A major aim of the implementation and analysis of the SISTA program in 2013 was to develop a measurement scale against which student performances could be compared over time, and reliable comparisons of growth between and across years to be able to be made.

A fundamental requirement of measurement is that there is an independent tool that does not change over time. For length we have a metre rule, for temperature we have thermometers calibrated in degrees Centigrade and for volume we have litres. These are defined and do not change irrespective of (in the case on length) whether we are measuring a piece of cloth or the height of a person.

In education it is more challenging to create a measurement tool because we cannot observe ability or intelligence (same as we cannot see temperature) but we can find indicators of skills and ability by the manner in which student respond to questions and tests.

 In 2013 the responses from all participating students in the SISTA tests have been used to provide the baseline data and create the SISTA measurement scales for each domain.

These scales have been developed using methodologies that are used in a large number of countries and internationally acknowledged programs like PISA, TIMSS, PIRLS and NAPLAN. Three scales have been produces: one for English Literacy (Reading and Language), one for Writing and one for Mathematics. He Literacy scale has been disaggregated into Reading and language.

Each scale extends over both Year 4 and Year 6 – there is only one measurement scale for each subject and students are compared to that scale for the subject independent of which Year level they are currently completing. This method acknowledges that in any class there is often a wide range of ability with some students struggling well below the expected Year level, many operating in the expected ranges and some students functioning well above the current Year level expectations. Research indicates that in lower secondary schools it is not uncommon for a class to have students covering five years of student ability.

The methodologies used in the analysis and scale development include the application of Item Response Theory using Rasch (1960) measurement techniques and the implementation of common items (Equating) in Year4 and Year 6 tests to estimate the amount of growth shown by the improved performance of Year 6 in the items.

All tests were analysed using the Item Response Theory (IRT) software Conquest.

In order to give meaning to the scales the Rasch indices have been converted to scaled scores.

The linear equation used to construct the numerical scaled scores is:

Scaled Score = Rasch Logit value*50 + 400

The application of this equation results in the items of Year 4 having a mean location of 400 scaled score points and a standard deviation of 50 scaled score points.

Given the well targeted tests in Literacy and Numeracy at Year 4 the results for the measurement of the students' abilities on the same scale is provided in Tables 7 and Table 8 below.

The application of the common item methodology (items that are present in both Year 4 and Year 6 tests to measure the amount of growth observed in the data (see appendix)) have enabled estimates of mean the performance of Year 6 on the common scale to be prepared. These are presented in Table 7 and table 8.

Table 7 – Rasch test statistics – English estimates of mean student ability

Year	Domain	N	Minimum Score	Maximum Score	Mean	Std. Deviation	Growth
Year 4	English	2843	168.3	631.7	399.6	58.3	
Year 6	English	2949	255.8	626.9	445.0	52.7	45.4
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Table 8 – Rasch test statistics – Mathematics estimates of mean student ability

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Year 6	Mathematics	2858	241.0	712.8	485.8	57.8	92.3

Given that the standard deviation is defined as 50 scaled score points the growth observed between Year 4 and Year 6 in the Literacy strands is relatively consistent at about one standard deviation. Experience in other programs of this type (Australian state based programs and NAPLAN) would suggest this is about the expected range of growth observed between two adjacent target cohorts (eg Grade 3 to Grade 6 OR Grade 4 to Grade 6).

The growth observed in Mathematics and Writing is about twice the expected range being around 92 scaled and 102 score points respectively.

 This would suggest that in Mathematics there is significant improvement in the base skills being taught in Year 4 Mathematics and this is a positive indicator in regards to student understanding of core Mathematics skills upon which to build higher level understandings.

The more than expected increase in the mean scores in Writing between Year 4 and Year 6 may simply reflect the very low base in Year 4 mean results.

It is observed in Table 6 that the mean of Year 4 students (281.7) is both well below the expected result of about 400 as shown in the other Literacy strands. Although there is evidence of significant improvement in Writing between Year 4 and Year 6, the mean scaled score of the Year 6 sample is 384.2 which is around the expected value of a Year 4 student cohort. In considering the observed growth it should be considered in the light to the general under-achievement in this strand of English learning.

Key Finding 4

The tests have scaled well and the embedded common items have functioned sufficiently consistently to enable comparisons between Year 4 and Year 6 performances to be estimated.

The English Literacy scales have been developed using the sub-strands of Reading and Language which have performed unidimensionally and consistently at each Year level.

Writing has been analysed separately as it functions quite differently to the other English sub domains

The Writing results are relatively poor compared to those of Reading, Language and Mathematics

Key Finding 5

The SISTA 1 tests in English and Mathematics have been well targeted to the sample populations and have generated a good distribution of item difficulties that cater to a wide range of student abilities.

There are some 'gaps' in the range of item difficulties in the SISTA 2 tests.

Key Finding 6

The performance of the items of each test, and of the common items designed to measure the growth between Year 4 and Year 6 have functioned adequately and enabled Literacy and Mathematics scales to be developed and Standards relative to curriculum outcomes to be described,

English Tests – Rasch Analyses

Appendices 3 and 4 provide summaries of the Rasch statistics provided by these analyses.

Figures 1 and 2 are the item-person maps that show the relative targeting of the items relative to the sample populations for each year level.

Figure 1 shows a good distribution of items across the full range of difficulties and a relatively normal distribution of student abilities. There is good alignment between the items assessing Year 4 literacy skills with the range of abilities demonstrated by the sample.

Figure 1 English Year 4 – item person map

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                              xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|9  19  31  33  36 |
                                xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|1  21  34          |
                            xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx| |               |
    400      0 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|7  17 |
                         xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|22  25          |
                          xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|11 |
                       xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|13  23 |
                      xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|16  30          |
                          xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|20 |
                            xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx| |
    350     -1   xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx|38  39 |
                               xxxxxxxxxxxxxxxxx|3  40 |
                             xxxxxxxxxxxxxxxxxxxxxx|2  5  6 |
                             xxxxxxxxxxxxxxxxxxxxx|8                        |
                                xxxxxxxxxxxxxxx|4 |
                                  xxxxxxx| |
                               xxxxxxxxxxx|29 |
    300     -2               xxxxxx| |
                                 xxx|                              |
                                 xxx| |
                                  xx|24 |
                                 xxx|                              |
                                  x| |
                                  x| |
    250     -3                    x|                              |
                                   | |
                                  x|                              |
                                   |                              |
                                   |                              |
                                   |                              |
            -4                     |                              |
                                   |                              |
                                   |                              |
         ================================================================================
                                                    Each 'x' represents 4.1 cases
```

Figure 2 English Year 6 – item person map

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-------------------------------------------------------------------------------
                                              |                                 |
                                              |                                 |
                                              |                                 |
                                              |                                 |
   3                                          |                                 |
                                              |                                 |
                                              |                                 |
                                            X |11  15                           |
                                            X |                                 |
                                            X |16                               |
   2                                      XXX |                                 |
                                         XXXX |13                               |
                                       XXXXXX |                                 |
                                      XXXXXXXX|                                 |
                                       XXXXXX |12  14                           |
                                     XXXXXXXX |23                               |
                                    XXXXXXXXXX|                                 |
                            XXXXXXXXXXXXXXXXXX|7  10                            |
   1                        XXXXXXXXXXXXXXXXXX|30                               |
                          XXXXXXXXXXXXXXXXXXXX|9  18  32                        |
                     XXXXXXXXXXXXXXXXXXXXXXXXX|17  31  38                       |
                         XXXXXXXXXXXXXXXXXXXXX|                                 |
                       XXXXXXXXXXXXXXXXXXXXXXX|                                 |
                      XXXXXXXXXXXXXXXXXXXXXXXX|8  33                            |
                   XXXXXXXXXXXXXXXXXXXXXXXXXXX|24                               |
   0              XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                 |
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                 |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                 |
               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|37                               |
                XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|20  36                           |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|21                               |
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|5  25                            |
               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|34                               |
  -1            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|6  19  29                        |
               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|27  28  35                       |
                           XXXXXXXXXXXXXXXXXXX|3                                |
                           XXXXXXXXXXXXXXXXXXX|26                               |
                       XXXXXXXXXXXXXXXXXXXXXXX|22                               |
                            XXXXXXXXXXXXXXXXXX|                                 |
                              XXXXXXXXXX      |                                 |
                           XXXXXXXXXXXX       |                                 |
  -2                        XXXXXXX           |                                 |
                             XXXX             |                                 |
                             XXX              |                                 |
                             XXX              |                                 |
                             XXX              |2  4                             |
                              X               |1                                |
                              X               |                                 |
  -3                          X               |                                 |
                                              |                                 |
                              X               |                                 |
                                              |                                 |
                                              |                                 |
                                              |                                 |
                                              |                                 |
  -4                                          |                                 |
                                              |                                 |
===============================================================================
Each 'X' represents 4.0 cases
```

Figure 2 shows the item-person map for Year 6 English. Although the distribution of items has a reasonable range it is a little biased to the more difficult end of the range and consequently the test overall is a little too hard for the target population. This can be seen graphically by the relative position of the distribution of student abilities which can be seen to marginally below the expected scale mean of zero (0).

   The distribution of items also displays a gap around the -2 area which suggests that there are few items catering to the proportion of students who are relatively weak and this test does not allow good discrimination or information to be gleaned about these students.

Mathematics Tests – Rasch analyses

Figure 3 shows the distribution of item difficulties and the distribution of student abilities for Year 4 mathematics on a Year 4 scale. Generally the test is well targeted to the sample population with a wide range of item difficulties covering the full range of student abilities.

There is a small gap in items in the lower end of the scale, however the student distribution is relatively normal and centred very close to zero, as was the intention of the test construct developed with the NESU panels.

Figure 3 Mathematics Year 4 – item person map

```
   ------------------------------------------------------------------------------
                                                       | |
                                                       |30 |
                                                       | |
                                                     X| |
                                                       | |
                                                       |57 |
 550      3                                           | |
                                                       | |
                                                     X| |
                                                    XX| |
                                                     X| |
                                                     X|                          |
                                                   XXX|54 |
                                                    XX| |
 500      2 XXXX|42  55                               |
                                                 XXXXXX|32 |
                                                  XXXX| |
                                                 XXXXXX|65  67                   |
                                               XXXXXXX|64 |
                                            XXXXXXXXXXX|34  56  66 |
                                           XXXXXXXXXXXXX|7  23 |
 450      1 XXXXXXXXXXXXXXXXXX|18  53  58  59 |
                            XXXXXXXXXXXXXXXXXXXXXXXXXXX|31  40  68               |
                              XXXXXXXXXXXXXXXXXXXXXXXX|36  39  41 |
                              XXXXXXXXXXXXXXXXXXXXXXX|15  17 |
                            XXXXXXXXXXXXXXXXXXXXXXXXX|22  44                      |
                         XXXXXXXXXXXXXXXXXXXXXXXXXXX|20  63 |
                       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|6  19  61 |
                     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|29  46 |
 400      0 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|43  48 |
                       XXXXXXXXXXXXXXXXXXXXXXXXXXXX|                              |
                         XXXXXXXXXXXXXXXXXXXXXXXXXX|4 |
                       XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|13  28  52  60 |
                     XXXXXXXXXXXXXXXXXXXXXXXXXXX|                                 |
                       XXXXXXXXXXXXXXXXXXXXXXXXXXX|10  12  27  51 |
                         XXXXXXXXXXXXXXXXXXXXXXX|35  45 |
 350     -1              XXXXXXXXXXXXXXXXXXXXXXXX|2  11  50  62                   |
                          XXXXXXXXXXXXXXXX|1  5  21  26  47 |
                           XXXXXXXXXXXXX|3 |
                        XXXXXXXXXXXXXXXXX|25                                      |
                           XXXXXXXXXXXX|9 |
                           XXXXXXXXXX|38 |
                           XXXXXXXXX|37  49 |
                            XXXXX|16  24  33 |
 300     -2                 XXXXX| |
                            XXXX| |
                            XXX| |
                            XXX| |
                            XX|14 |
                            XX| |
                             X| |
 250     -3                  X|8 |
                             X| |
                                                       | |
                                                       | |
                                                       | |                       |
                                                       | |
                                                       | |                       |
                                                       | |
                                                       | |
     -4                                                |                          |
   ==============================================================================
   Each 'X' represents 4.4 cases
```
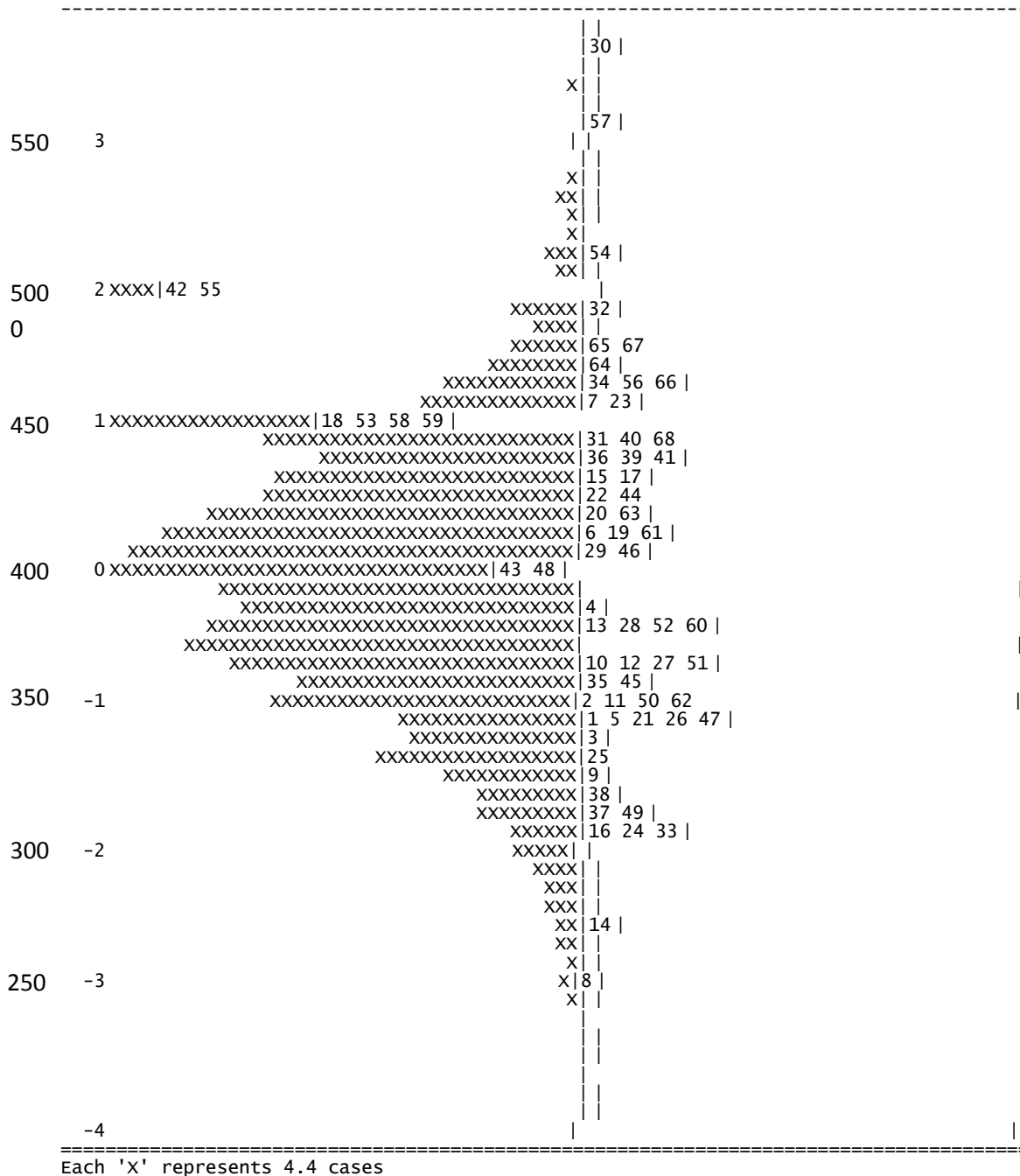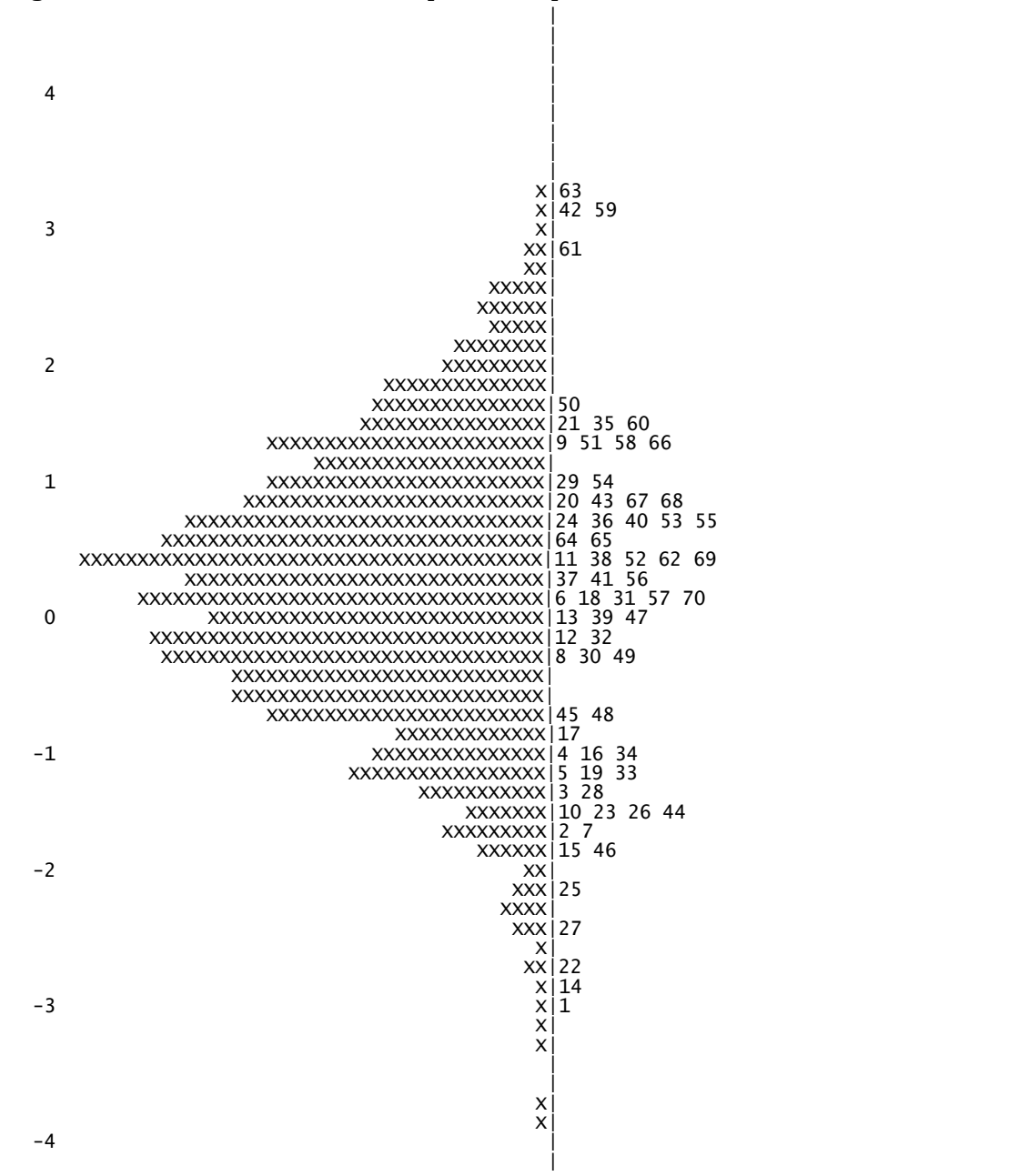
Figure 4 Mathematics Year 6 – item person map

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                                            |                                  |
                                            |                                  |
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   4                                        |                                  |
                                            |                                  |
                                            |                                  |
                                            |                                  |
                                          X |63                                |
                                          X |42 59                             |
   3                                      X |                                  |
                                         XX |61                                |
                                         XX |                                  |
                                       XXXX |                                  |
                                      XXXXX |                                  |
                                       XXXX |                                  |
                                    XXXXXXX |                                  |
   2                               XXXXXXXX |                                  |
                                XXXXXXXXXXX |                                  |
                               XXXXXXXXXXXX |50                                |
                              XXXXXXXXXXXXX |21 35 60                          |
                       XXXXXXXXXXXXXXXXXXXX |9 51 58 66                        |
                          XXXXXXXXXXXXXXXXX |                                  |
   1                   XXXXXXXXXXXXXXXXXXXX |29 54                             |
                     XXXXXXXXXXXXXXXXXXXXXX |20 43 67 68                       |
                   XXXXXXXXXXXXXXXXXXXXXXXX |24 36 40 53 55                    |
                  XXXXXXXXXXXXXXXXXXXXXXXXX |64 65                             |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |11 38 52 62 69                    |
                 XXXXXXXXXXXXXXXXXXXXXXXXXX |37 41 56                          |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |6 18 31 57 70                     |
   0              XXXXXXXXXXXXXXXXXXXXXXXXX |13 39 47                          |
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXX |12 32                             |
             XXXXXXXXXXXXXXXXXXXXXXXXXXXXX |8 30 49                           |
                 XXXXXXXXXXXXXXXXXXXXXXXX |                                   |
                XXXXXXXXXXXXXXXXXXXXXXX |                                      |
              XXXXXXXXXXXXXXXXXXXXXXXXX |45 48                                |
                    XXXXXXXXXXXXX |17                                         |
  -1             XXXXXXXXXXXXXXX |4 16 34                                     |
                XXXXXXXXXXXXXXX |5 19 33                                      |
                   XXXXXXXXXXX |3 28                                         |
                       XXXXXX |10 23 26 44                                   |
                   XXXXXXXXX |2 7                                            |
                      XXXXX |15 46                                           |
  -2                     XX |                                                |
                        XXX |25                                              |
                       XXXX |                                                |
                        XXX |27                                              |
                          X |                                                |
                         XX |22                                              |
                          X |14                                              |
  -3                       X |1                                              |
                           X |                                               |
                           X |                                               |
                             |                                               |
                             |                                               |
                           X |                                               |
                           X |                                               |
  -4                         |                                               |
=========================================================================================
Each 'X' represents 4.6 cases
```

Figure 4 shows the item and person ability distributions for Year 6 Mathematics.

The distribution of items covers a wide range of difficulties although there is a dearth of items around the 2 to 3 logit range of difficulty.

The distribution of student abilities is relatively normal and displays the typical 'long tail' of students that have not mastered the basics of Years 3 to Year 5 curriculum and are falling behind in Year 6 Mathematics.

Overall although the mean of the abilities distribution is marginally above zero, the test is relatively well targeted to the sample population of the SISTA 2 tests.

STANDARDS REFERENCED FRAMEWORK

Literacy

For the purpose of this report Literacy has been defined as the combination of Reading and Language.

Research in multiple programs, including NAPLAN, has shown that there are significant differences in the performance of students in Reading and Language compared to Writing. Hence in these programs Writing has been analysed and reported as a separate scale to Literacy – the aggregation of Reading and Language.

The tables below provide information regarding the performance of each Year on each domain.

As discussed earlier, one of the main outcomes of the 2013 SISTA program was to develop a single measurement scale (like a metre rule) against which to compare student performance and progress. This scale (like the metre rule) is a single tool used over time to measure all students against.

At Year 4 the Expected Level of achievement is defined as Level 3.

Students at Level 2 are emerging, or developing, toward the expected level, Students at Level 1 or Level 0 are at the critical level. At Year 4 Students at Level 4 demonstrate mastery of the Year 4 outcomes and those at Level 5 indicate that they are performing above the expect level for Year 4.

At Year 6 we expect to see educational improvement in student performance compared to Year 4

At Year 6 the Expected Level of achievement is defined as Level 4 on the SISTA scale.

At Year 6 students at Level 3 are emerging, or developing, toward the expected level of Year 6 (because Level 3 is the expected achievement of Year 4 students on the common scale), whilst students at Level 2, or 1 or Level 0 are at the critical level. At Year 6 Students at Level 5 demonstrate mastery of the Year 6 outcomes and those at Level 6 indicate that they are performing above the expect level for Year 6.

Figure 5 below provides information about the 7 levels identified for Year 4 (L0 to L6) and shows that range of scaled scores achieved by students that have been included in a particular Level. The table also provides a description of the skills that are typically demonstrated by students at each level and an estimate of the percentage of students who are performing an each level. The area heavily shaded, bolded region of the table, is the Expected Level of achievement for the Year level, whilst the lighter shading identifies the students who are developing toward the expected level.

In English Literacy Figure 5 shows that 7.6% of the sample population are at the critical levels of 0 or 1, 26% are at level 2 with skills developing toward the expected level for Year 4, 33% are at the expected level of Year 3 and 66.4% of student are either AT or ABOVE the expected level of achievement expected for Year 4 students.

Figure 6 is displayed in the same format as Figure 5. It shows that 9.3% of students are performing in the critical regions (L0, L1 or L2) for Year 6 students in English literacy. Because we have a single common scale, Year 6 students who are displaying L2 skills are performing below the expected level for Year 4 which is an unacceptable outcome for a Year 6 student..

Figure 6 shows that 28.4% of Year 6 students are developing toward the Year 6 expected standard and that 34.5% of students are AT the expected level, with 62.3% of students AT or ABOVE the expected level for Year 6 in English Literacy.

The table below summarises the proportions of students in various the levels of achievement described below

Table 9 – Summary of percentages within Standards Levels by subject and year level

Year 4	Critical Level %	Below Expected level – emerging %	At Expected Level %	At or Above expected standard %
English Literacy	7.6	26.0	33.0	66.4
Reading	14.8	21.4	30.0	63.8
Language	9.4	25.9	32.3	64.6
Writing	39.6	28.1	12.5	32.3
Mathematics	9.5	23.8	39.6	66.7

Year 6	Critical Level %	Below Expected level – emerging %	At Expected Level %	At or Above expected standard %
English Literacy	9.3	28.4	34.5	62.3
Reading	10.8	23.8	24.9	65.4
Language	9.4	28.4	36.9	62.2
Writing	26.2	14.7	22.2	59.1
Mathematics	3.3	10.1	26.5	86.6

Key Finding 7

The summary results by Level are generally consistent with those produced by other assessments including previous SISTA assessments and the PILNA pilot.

The improvements in overall performances can be attributed to:

1. **Better tests and improved alignment of the tests with the target population; and**
2. **In the case of English Literacy the disaggregation of the Writing scale from the other strands of English.**

Figure 5 SISTA 1 Literacy 2013 Year 4

Level	Score				Percent Cumulative
6	574 TO 525	65	2.3	Students at this level are able to interpret information in texts and construct a written response to indicate their comprehension of meaning. They demonstrate developing skills in inferring meaning in texts and being able to construct a written response.	100.0
5	524 TO 475	259	9.1	Students at this level are able to interpret information in texts and construct a written response to indicate their comprehension of meaning. They display mastery of cloze passages and control over comparative forms of words with irregular forms (good, better, best).	97.7
4	474 TO 425	626	22.0	Students at this level are able to find multiple pieces of information in a text and construct a simple written response. They are able to identify synonyms of less common words. Typically they have developing skills in completing cloze passages and the identification of the correct structure of simple sentences. They have the capacity to construct a simple sentence using a small number of defined words.	88.6
3	424 TO 375	938	33.0	**Students in this level are able to retrieve information from texts and construct a simple one or two word response and order the events described in a text. They are able to identify synonyms for common words and interpret simple information from texts. They demonstrate control over tense in sentences, the correct use of articles and pronouns. They have some control over comparative forms of words (tall, taller, tallest) and have emerging skills in the selection of the correct words in a cloze passage.**	66.6
2	374 TO 325	739	26.0	Students in this level are able to retrieve literal information from texts and interpret simple relationships between characters in the text. They level can identify the spelling of some more complex, uncommon words and show developing mastery of the punctuation of sentences. They have also indicated developing control of appropriate pronouns.	33.6
1	324 TO 275	178	6.3	Students at this level are able to find literal information in a text by word matching. They have not yet mastered any skills in interpreting information in texts. They can identify a common personal pronoun and identify the correct spelling of common words.	7.6
0	Up to 274	38	1.3	Insufficient information to define skills achieved.	1.3
Total		2843	100.0		

Figure 6 SISTA 2 Literacy 2013 Year 6

Level	Score Range	Frequency	Percent	Standards Descriptors	Cumulative Percent
6	574 TO 525	227	7.7	Students at this level are able to interpret information in texts and construct a written response to indicate their comprehension of meaning. They demonstrate developing skills in inferring meaning in texts and being able to construct a written response.	100.0
5	524 TO 475	595	20.2	Students at this level are able to display emerging ability to interpret information in texts and construct a written response to indicate their comprehension of meaning. They level display mastery of cloze passages and control over comparative forms of words with irregular forms (good, better, best). They also demonstrate an understanding of correct sentence structure.	92.3
4	**474 TO 425**	**1016**	**34.5**	**Students at this level are able to find multiple pieces of information in a text and construct a simple written response. They are able to identify synonyms of less common words. In Language they have developing skills in completing cloze passages and the identification of the correct structure of simple sentences. They are demonstrating the correct use of adjectives and adverbs to provide richer descriptions of things and events.**	**72.1**
3	424 TO 375	838	28.4	Students in this level are able to retrieve information from texts and construct a simple one or two word response and order the events described in a text. They are able to identify synonyms for common words and interpret simple information from texts. Hey demonstrate control over tense in sentences, the correct use of articles and pronouns. They have some control over comparative forms of words (tall, taller, tallest) and have emerging skills in the selection of the correct words in a cloze passage.	37.7
2	374 TO 325	244	8.3	Students in this level are able to retrieve literal information from texts and interpret simple relationships between characters in the text. Typically they can identify the spelling of some more complex, uncommon words and show developing mastery of the punctuation of sentences. They have also indicated developing control of appropriate pronouns.	9.3
1	324 TO 275	27	.9	Students at this level are able to find literal information in a text by word matching. They have not yet mastered any skills in interpreting information in texts but they can identify a common personal pronoun and identify the correct spelling of common words.	1.0
0	Up to 274	2	.1	Insufficient information to define skills achieved.	.1
Total		2843	100.0		

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Figure 7 SISTA 1 Reading 2013 Year 4

Level	Score Range	Frequency	Percent	Standards Descriptors	Cumulative Percent
6	574 TO 525	131	4.6	Students at this level are able to interpret information in texts and construct a written response to indicate their comprehension of meaning. They demonstrate developing skills in inferring meaning in texts and being able to construct a written response.	100.0
5	524 TO 475	331	11.6	Students at this level are able to interpret information in texts and construct a written response to indicate their comprehension of meaning.	95.4
4	474 TO 425	498	17.5	Students at this level are able to find multiple pieces of information in a text and construct a simple written response. They are able to identify synonyms of less common words.	83.7
3	424 TO 375	853	30.0	Students in this level are able to retrieve information from texts and construct a simple one or two word response and order the events described in a text. They are able to identify synonyms for common words and interpret simple information from texts.	66.2
2	374 TO 325	608	21.4	Students in this level are able to retrieve literal information from texts and interpret simple relationships between characters in the text.	36.2
1	324 TO 275	372	13.1	Students at this level are able to find literal information in a text by word matching. They have not yet mastered any skills in interpreting information in texts.	14.8
0	Up to 274	50	1.8	Insufficient information to define skills achieved.	1.8
Total	2843		100.0		

At Year 4 in English Reading, 63.8% of students are functioning AT or ABOVE the expected standard of a Year 4 student.

Figure 8 SISTA 1 Language 2013 Year 4

Level	Score Range	Frequency	Percent	Standards Descriptors	Cumulative Percent
6	574 TO 525	64	2.3		100.0
5	524 TO 475	203	7.1	Students at this level display mastery of cloze passages and control over comparative forms of words with irregular forms (good, better, best).	97.7
4	474 TO 425	651	22.9	Students at this level have developing skills in completing cloze passages and the identification of the correct structure of simple sentences. They have the capacity to construct a simple sentence using a small number of defined words.	90.6
3	**424 TO 375**	919	32.3	Students at this level demonstrate control over tense in sentences, the correct use of articles and pronouns. They have some control over comparative forms of words (tall, taller, tallest) and have emerging skills in the selection of the correct words in a cloze passage.	67.7
2	374 TO 325	737	25.9	Students at this level can identify the spelling of some more complex, uncommon words and show developing mastery of the punctuation of sentences. They have also indicated developing control of appropriate pronouns.	35.4
1	324 TO 275	231	8.1	Students at this level can identify a common personal pronoun and identify the correct spelling of common words.	9.4
0	Up to 274	37	1.3	Insufficient information to define skills achieved.	1.3
Total	2842		100.0		

At Year 4 in English Language, 64.6% of students are functioning AT or ABOVE the expected standard of a Year 4 student.

Figure 9 SISTA 2 Reading 2013 Year 6

Level	Score Range	Frequency	Percent	Standards Descriptors	Cumulative Percent
6	574 TO 525	279	9.5	Students at this level are able to interpret information in texts and construct a written response to indicate their comprehension of meaning. They demonstrate developing skills in inferring meaning in texts and being able to construct a written response.	100.0
5	524 TO 475	914	31.0	Students at this level are able to display emerging ability to interpret information in texts and construct a written response to indicate their comprehension of meaning.	90.5
4	474 TO 425	735	24.9	Students at this level are able to find multiple pieces of information in a text and construct a simple written response. They are able to identify synonyms of less common words.	59.5
3	**424 TO 375**	702	23.8	Students in this level are able to retrieve information from texts and construct a simple one or two word response and order the events described in a text. They are able to identify synonyms for common words and interpret simple information from texts.	34.6
2	374 TO 325	260	8.8	Students in this level are able to retrieve literal information from texts and interpret simple relationships between characters in the text.	10.8
1	324 TO 275	45	1.5	Students at this level are able to find literal information in a text by word matching. They have not yet mastered any skills in interpreting information in texts.	2.0
0	Up to 274	14	.5	Insufficient information to define skills achieved.	.5
Total		2949	100.0		

At Year 6 in English Reading, 65.4% of students are functioning AT or ABOVE the expected standard of a Year 6 student.

Figure 10 SISTA 2 Language 2013 Year 6

Level	Score Range	Frequency	Percent	Standards Descriptors	Cumulative Percent
6	Above 525	229	7.8	Students at this level display mastery of cloze	100.0
5	524 TO 475	517	17.5	passages and control over comparative forms of words with irregular forms (good, better, best). They also demonstrate an understanding of correct sentence structure.	92.2
4	474 TO 425	1087	36.9	Students at this level have developing skills in completing cloze passages and the identification of the correct structure of simple sentences. They are demonstrating the correct use of adjectives and adverbs to provide richer descriptions of things and events.	74.7
3	**424 TO 375**	838	28.4	Students at this level demonstrate control over tense in sentences, the correct use of articles and pronouns. They have some control over comparative forms of words (tall, taller, tallest) and have emerging skills in the selection of the correct words in a cloze passage.	37.8
2	374 TO 325	258	8.7	Students at this level can identify the spelling of some more complex, uncommon words and show developing mastery of the punctuation of sentences. They have also indicated developing control of appropriate pronouns.	9.4
1	324 TO 275	14	.5	Students at this level can identify a common personal pronoun and identify the correct spelling of common words.	.7
0	Up to 274	6	.2	Insufficient information to define skills achieved.	.2
Total	2949		100.0		

At Year 6 in English Language, 62.2% of students are functioning AT or ABOVE the expected standard of a Year 6 student.

Writing

Figure 11 Writing Standards by Year 4

Year	Level	Frequency	Percent	Standard Statement	Cumulative Percent
	7	52	1.8	Effective use is made of the prompt. Character, setting and plot are well developed and may show complexity. Good use of detail for effect. Events are logically ordered, with a clear structure that shows development of ideas. Includes beginning and end. All features adequately represented Effective use of cohesive devices to link complex or compound sentences Word choice is precise and descriptive. Language is rich. There is a good variety of simple and complex sentence structures. Errors are scarce and do not affect meaning. Syntax, inflection, case and tense are correct. There are occasional omissions and errors in sentence demarcation. Spelling mistakes are scarce and don't affect meaning.	100.0
	6	60	2.1	Effective use is made of the prompt. Character, setting and plot are developed: Detail used to define character. Details establish setting. Events are described with some detail. Events are generally logically sequenced. Heading, and development of writing conventions, - intro, body and conclusion. Some basic cohesive devices are used. Simple sentences mainly used Word choice is adequate and appropriate, but lacks depth or meaningfulness. Sentences may vary in length but are generally simple in structure. Mainly correct syntax, inflection, case and tense. Omissions or errors in punctuation have some impact on meaning. Spelling mistakes are scarce and don't affect meaning.	98.2
	5	170	6.0	Effective use is made of the prompt. Character, setting and plot are developed: Detail used to define character. Details establish setting. Events are described with some detail. There is some evidence of sequencing. Heading, some evidence of control of features – introduction, body, conclusion. Some basic cohesive devices are used. Simple sentences mainly used Vocabulary is generally adequate to convey the intended meaning, but is simple. Sentences are short and simple. Some grammatical errors that complicate the meaning. Significant omissions or errors in punctuation have a major impact on meaning. Spelling mistakes are scarce and don't affect meaning.	96.1
	4	281	9.9	Ideas are partially relevant to the prompt. Ideas are not fully developed: Individual characters are referred to. Setting is referred to. Simple events are referred to. There is some evidence of sequencing. Some basic cohesive devices are used. SImple sentences mainly used Vocabulary is generally adequate to convey the intended meaning, but is simple. Sentences are short and simple. Some grammatical errors that complicate the meaning. Significant omissions or errors in punctuation have a major impact on meaning. There are a few spelling mistakes. Some of them affect the meaning.	90.1

	3	354	12.5	Ideas are partially relevant to the prompt. Ideas are not fully developed: Individual characters are referred to. Setting is referred to. Simple events are referred to. There is some evidence of sequencing. Sentences are disjointed. Only very simple sentences used Vocabulary is generally adequate to convey the intended meaning, but is simple. Sentences reflect incomplete thoughts. Grammatical errors are frequent and complicate meaning. Scarcity in punctuation. There are a few spelling mistakes. Some of them affect the meaning.	80.2
	2	800	28.1	Ideas are partially relevant to the prompt. Some evidence of character, setting or plot but ideas are undeveloped, e.g., merely describe the holiday. Events are not logically sequenced. No heading, introduction body etc not evident. Sentences are disjointed. Only very simple sentences used Immature vocabulary. Some words are overused. Sentences reflect incomplete thoughts. Grammatical errors are frequent and complicate meaning. Scarcity in punctuation. Frequent spelling errors that affect meaning.	67.7
	1	480	16.9	Some evidence of character, setting or plot but ideas are undeveloped, e.g., merely describe the holiday. Events are not logically sequenced. No heading, introduction body etc not evident. Immature vocabulary. Some words are overused. Sentences reflect incomplete thoughts. Grammatical errors are frequent and complicate meaning. Scarcity in punctuation. Frequent spelling errors that affect meaning.	39.6
	0	646	22.7	Insufficient student work provided to assess ability in Writing.	22.7
	Total	2843	100.0	100.0	

At Year 4 in Writing, 32.3% of students are functioning AT or ABOVE the expected standard of a Year 4 student.

Figure 12 Writing Standards by Year 6

Year	Level	Frequency	Percent	Standard Statement	Cumulative Percent
6	7	371	12.6	Effective use is made of the prompt. Character, setting and plot are well developed and may show complexity. Good use of detail for effect. Events are logically ordered, with a clear structure that shows development of ideas. Includes beginning and end. All features adequately represented Effective use of cohesive devices to link complex or compound sentences Word choice is precise and descriptive. Language is rich. There is a good variety of simple and complex sentence structures. Errors are scarce and do not affect meaning. Syntax, inflection, case and tense are correct. There are occasional omissions and errors in sentence demarcation. Spelling mistakes are scarce and don't affect meaning.	100.0
	6	321	10.9	Effective use is made of the prompt. Character, setting and plot are developed: Detail used to define character. Details establish setting. Events are described with some detail. Events are generally logically sequenced. Heading, and development of writing conventions, - intro, body and conclusion. Some basic cohesive devices are used. Simple sentences mainly used Word choice is adequate and appropriate, but lacks depth or meaningfulness. Sentences may vary in length but are generally simple in structure. Mainly correct syntax, inflection, case and tense. Omissions or errors in punctuation have some impact on meaning. Spelling mistakes are scarce and don't affect meaning.	87.4
	5	396	13.4	Effective use is made of the prompt. Character, setting and plot are developed: Detail used to define character. Details establish setting. Events are described with some detail. There is some evidence of sequencing. Heading, some evidence of control of features – introduction, body, conclusion. Some basic cohesive devices are used. Simple sentences mainly used Vocabulary is generally adequate to convey the intended meaning, but is simple. Sentences are short and simple. Some grammatical errors that complicate the meaning. Significant omissions or errors in punctuation have a major impact on meaning. Spelling mistakes are scarce and don't affect meaning.	76.5
	4	656	22.2	Ideas are partially relevant to the prompt. Ideas are not fully developed: Individual characters are referred to. Setting is referred to. Simple events are referred to. There is some evidence of sequencing. Some basic cohesive devices are used. Simple sentences mainly used Vocabulary is generally adequate to convey the intended meaning, but is simple. Sentences are short and simple. Some grammatical errors that complicate the meaning. Significant omissions or errors in punctuation have a major impact on meaning. There are a few spelling mistakes. Some of them affect the meaning.	63.1
	3	433	14.7	Ideas are partially relevant to the prompt. Ideas are not fully developed: Individual characters are referred to. Setting is referred to. Simple events are referred to. There is some evidence of sequencing. Sentences are disjointed. Only very simple sentences used Vocabulary is generally adequate to convey the intended meaning, but is simple. Sentences reflect incomplete thoughts. Grammatical errors are frequent and complicate meaning. Scarcity in punctuation. There are a few spelling mistakes. Some of them affect the meaning.	40.9

	2	564	19.1	Ideas are partially relevant to the prompt. Some evidence of character, setting or plot but ideas are undeveloped, e.g., merely describe the holiday. Events are not logically sequenced. No heading, introduction body etc not evident. Sentences are disjointed. Only very simple sentences used Immature vocabulary. Some words are overused. Sentences reflect incomplete thoughts. Grammatical errors are frequent and complicate meaning. Scarcity in punctuation. Frequent spelling errors that affect meaning.	26.2
	1	103	3.5	Some evidence of character, setting or plot but ideas are undeveloped, e.g., merely describe the holiday. Events are not logically sequenced. No heading, introduction body etc not evident. Immature vocabulary. Some words are overused. Sentences reflect incomplete thoughts. Grammatical errors are frequent and complicate meaning. Scarcity in punctuation. Frequent spelling errors that affect meaning.	7.1
	0	105	3.6	Insufficient student work provided to assess ability in Writing.	3.6
	Total	2843	100.0	100.0	

At Year 6 in Writing, 59.1% of students are functioning AT or ABOVE the expected standard of a Year 6 student.

Key Finding 8

The Writing results of Year 4 are very poor and although there is significant improvement between Year 4 and Year 6 the results of Year 6 are still well below the expected level.

On average the Year 6 sample was functioning in Writing at a level that could be reasonably expected of Year 4 students.

Mathematics

Figure 13 SISTA 1 Mathematics Year 4 2013

Level	Score Range	Frequency	Percent	Year Statement	Cumulative
6	574 TO 525	64	1.0	Students at this level display understanding of fractions and their respective order when expressed as numbers or in units of length, mass or money.	100.0
5	524 TO 475	203	3.9	Students at this level are demonstrating control over operations involving money, and emerging understanding of the relative order of fractions. They display a developing understanding of area and perimeter in the measurement strand.	99.0
4	474 TO 425	651	22.2	Students at this level show an understanding of reading time on an analogue clock face, and a developing understanding of operations involving money and the units of measurement. They display control over the identification of common 2D shapes and 3D objects and the properties of those figures. They have mastered addition and subtraction involving trading.	95.1
3	424 TO 375	919	39.6	Students at this level are demonstrating emerging skills in multiplication and developing skills in addition and subtraction involving trading. They are able to find information in a timetable and solve a simple word problem involving addition and/or subtraction. They are able to identify points on a grid using the correct conventions of co-ordinates.	72.9
2	374 TO 325	737	23.8	Students at this level are able to complete a tally table and construct vertical and horizontal bar charts. They have developing mastery of place value in whole numbers and are able to order whole numbers from high to low. They can identify common 2D shapes by name. They display competence in Addition and Subtraction algorisms.	33.3
1	324 TO 275	231	7.8	Students at this level can perform simple addition and subtraction without trading. They can identify common regular 2D shapes and complete very simple tally charts.	9.5
0	Up to 274	37	1.7	Students at this level demonstrate low mathematical skills involving simple addition and subtraction.	1.7
Total		2842	100.0		

At Year 4 in Mathematics, 66.7% of students are functioning AT or ABOVE the expected standard of a Year 4 student.

Key Finding 9

There is significant growth in performance between Year 4 and Year 6 in Mathematics.

Figure 14 SISTA 2 Mathematics Year 6 2013

Level	Score Range	Frequency	Percent	Standards Descriptors	Cumulative Percent
7	Above 575	176	6.2	Students at this level are displaying developing skills in interpreting information in word problems using the a range of operations and use of units, fractions and ratios. They have developing skills in the calculations and implementation of percentages.	100.0
6	574 TO 525	520	18.2	Students at this level display understanding of fractions and their respective order when expressed as numbers or in units of length, mass or money. They are developing skills in calculating simple percentages using information from a word problem.	93.8
5	524 TO 475	1023	35.8	Students at this level are demonstrating control over operations involving money, and emerging understanding of the relative order of fractions. They display a developing understanding of area and perimeter in the measurement strand. They display an understanding of the properties of 2D shapes and 3D objects and are able to round values to the nearest 10th. They display emerging control over operations involving fractions in various forms, decimal, common fractions and percentages and converting between various forms.	75.6
4	474 TO 425	756	26.5	Students at this level show an understanding of operations involving money and the units of measurement. They display control over the identification of common 2D shapes and 3D objects and the properties of those figures. They have mastered addition and subtraction involving trading and are showing emerging skills in simple operations involving fractions.	39.9
3	424 TO 375	290	10.1	Students at this level are demonstrating emerging skills in multiplication and developing skills in addition and subtraction involving trading. They are able to find information in a timetable and solve a simple word problem involving addition and/or subtraction.	13.4
2	374 TO 325	72	2.5	Students at this level display developing skills in simple mathematical operations and skills including addition, subtraction and reading information from graphs. They have some control over operations involving money.	3.3
1	324 TO 275	17	.6	Students at this level can perform simple addition and subtraction without trading. They can identify common regular 2D shapes and complete very simple tally charts.	.7
0	Up to 274	4	.1	Students at this level demonstrate low mathematical skills involving simple addition and subtraction.	.1
Total	2858		100.0		

At Year 6 in Mathematics, 86.6% of students are functioning AT or ABOVE the expected standard of a Year 6 student.

SUMMARY PERFORMANCE and MEASURES of GROWTH

Tables 10 and 11 show the relative performance of Boys and Girls in the overall English scale and each of the subscales of Reading and Language.

At Year 4 the girls marginally out-perform the boys in each scale but by Year 6 the gap between them has decreased. Because of the size of the samples the differences are statistically significant. However when we consider the relative size of the differences at Year 3 it is about .3 of a standard deviation which is a significant effect size, but by Year 6 the difference is only about .1 of a standard deviation which is less significant.

Table 10 – Year 4 Literacy Descriptive Statistics by Gender

Gender	Strand	N	Minimum	Maximum	Mean	Std Error	Std. Deviation
Boys	Scaled Score English	1447	168	590	391.9	1.5	57.0
	Scaled Score Reading	1447	209	588	392.6	1.8	69.6
	Scaled Score Language	1447	197	606	391.6	1.5	57.5
Girls	Scaled Score English	1394	238	632	407.6	1.6	58.6
	Scaled Score Reading	1394	209	588	410.2	1.8	68.5
	Scaled Score Language	1393	197	606	405.0	1.6	59.7

Table 11 – Year 6 Literacy Statistics by Gender

Gender	Strand	N	Minimum	Maximum	Mean	Std Error	Std. Deviation
Boys	Scaled Score English	1448	256	627	441.3	1.4	52.2
	Scaled Score Reading	1448	243	646	446.5	1.6	62.2
	Scaled Score Language	1448	257	627	438.8	1.5	55.8
Girls	Scaled Score English	1499	256	627	448.6	1.4	52.9
	Scaled Score Reading	1499	243	646	452.6	1.6	61.1
	Scaled Score Language	1499	257	627	447.2	1.5	57.3

Table 12 shows the comparisons of performances by the sample in Writing by each Year level and by gender.

The table shows that Girls significantly out-perform Boys at both Year levels and that there is a large improvement in performance between the Year 6 cohort and the Year 4 students.

Table 12 – Year 4 and Year 6 Writing Statistics by Gender

Year	Gender	Writing	N	Minimum	Maximum	Mean	Std. Deviation
Year 4	Boys	Writing Scaled Score	1447	145	607	264.8	91.0
	Girls	Writing Scaled Score	1394	145	650	299.1	95.9
Year 6	Boys	Writing Scaled Score	1448	145	650	370.4	100.1
	Girls	Writing Scaled Score	1499	145	650	397.7	100.3

Table 13 below provides a summary of the Mathematics results by Year level and gender.

The table shows that there is no significant difference between Boys and Girls at either Year level although the mean score of the Boys is marginally higher than that of the Girls at Year 6. The growth between the Year 4 performance and the Year 6 performance of each Year is shown in the difference column (Δ). It shows relatively consistent increases between the genders.

Table 13 – Year 4 and Year 6 Mathematics Statistics by Gender

Mathematics		Year 4			Year 6			
Gender	Mathematics	N	Mean	Std. Deviation	N	Mean	Std. Deviation	Δ
Boys	Scaled Score	1458	393.1	51.3	1412	488.8	56.2	51.6
Girls	Scaled Score	1405	393.9	52.8	1445	482.9	59.2	45.6

Key Finding 10

The difference between the mean performances of Boys and Girls in Literacy is marginal with girls slightly out-performing boys.

In Writing Girls significantly out-perform boys at both Year 4 and Year 6.

In Mathematics there is no significant difference between the performance of Boys and Girls

The tables 14 through 16 show the relative performances of the samples by location.
The sample was disaggregated into four main groups, Rural, Semi-Rural, Semi-Urban and Urban. Unfortunately the achieved response sample for the Semi-Rural and Semi-Urban are very small and these results should be considered with caution.

Table 14 shows that Urban students significantly out-perform the Rural students by almost a full standard deviation (50 scaled score points) at each Year level in each of the overall English literacy scales and each sub-scale. It is notable that in each of the non-Urban groups students tend to perform better in Reading than in Language. This is not the case in the urban sample.

Table 14– Year 4 and Year 6 English Statistics by Location

English Literacy summary		Year 4			Year 6			
Location	Domain	N	Mean	Std. Deviation	N	Mean	Std. Deviation	Δ
Rural	Reading	2273	390.1	64.4	2248	441.6	60.3	51.6
	Language	2272	388.1	54.7	2248	433.8	51.9	45.6
Semi-Rural	Reading	16	407.7	36.0	31	430.3	67.5	22.6
	Language	16	381.6	24.9	31	409.2	59.2	27.6
Semi-Urban	Reading	92	439.4	58.0	93	453.3	60.1	14.0
	Language	92	413.0	48.4	93	445.8	44.3	32.8
Urban	Reading	462	448.4	74.6	577	480.9	56.9	32.5
	Language	462	445.0	58.7	577	480.5	60.4	35.4

Writing has been score using a rubric that concentrates on the components of writing using rating of student development in eight criteria; Relevance, Narrative Features, text Organisation, Cohesion, Vocabulary, Grammar, Punctuation and Spelling.

As noted earlier in the report the overall mean performance in Writing is relatively poor relative to the performances of students in Reading, Language and Mathematics. Table 12 shows the relative results of the sample by location.

It is very notable that the mean result of the urban students is significantly better than each of the other groups and in particular the rural cohort. At Year 4 the difference between Urban and Rural is 68 scaled score points and at Year 6 the difference is almost 100 scaled score points.

Table 15 – Year 4 and Year 6 Writing Statistics by Location

Writing summary			Year 4			Year 6		
Location	Domain	N	Mean	Std. Deviation	N	Mean	Std. Deviation	Δ
Rural	Writing Scaled Score	2353	272.0	94.1	2248	365.5	90.4	93.5
Semi-Rural	Writing Scaled Score	16	232.7	30.0	32	372.1	144.6	139.4
Semi-Urban	Writing Scaled Score	92	294.8	62.0	92	336.0	55.3	41.3
Urban	Writing Scaled Score	382	340.1	87.0	577	465.2	102.5	125.1

Table 13 shows the Mathematics result by location. As observed in the previous subjects the Urban students consistently out-perform the other groups but not by such a large amount.

Table 16 – Year 4 and Year 6 Mathematics Statistics by Location

Mathematics summary			Year 4			Year 6		
Location	Domain	N	Mean	Std.			Deviation Std.	Δ
Rural	Mathematics	2264	389.1	52.0	2233	481.5	56.9	92.3
Semi-Rural	Mathematics	16	389.5	46.2	31	458.1	63.4	68.6
Semi-Urban	Mathematics	92	403.5	40.3	93	494.0	59.8	90.4
Urban	Mathematics	490	411.7	50.3	501	505.2	56.4	93.5

Key Finding 11

There are significant differences between the mean performances of the students in rural schools compared to those in urban schools especially in the Literacy strands with urban students out-performing the rural students.

Although still significant, and in favour of the urban students, the difference is not as great in Mathematics

Tables 17 through 19 provide summaries of the performance of students by governing authority. The term 'Government' is used to relate to the provincially administered schools and "Non-Govt" refer to the schools administered by church authorities or other bodies.

Some care should be taken in the interpretation of these data due to the differences in the sample sizes.

In Reading it is noticeable that the students of non-government schools have significantly out-performed the student in the government schools at Year 4. However the improvement in the mean result between Year 4 and Year 6 is better in government school students than those in the non-government schools and consequently the difference in mean performance is not as great in Year 6.

Table 17– Year 4 and Year 6 English Statistics by Authority

English Literacy summary		Year 4			Year 6			
Authority	Domain	N	Mean	Std. Deviation	N	Mean	Std. Deviation	Δ
Government	Reading	2002	392.1	65.0	2284	447.1	61.1	55.0
	Language	2002	390.2	54.2	2284	438.6	53.9	48.4
Non Govt	Reading	665	423.3	75.0	665	458.2	62.9	34.9
	Language	665	417.1	65.1	665	458.3	63.1	41.2

Table 18– Year 4 and Year 6 Writing Statistics by Authority

English Literacy summary		Year 4			Year 6			
Authority	Domain	N	Mean	Std. Deviation	N	Mean	Std. Deviation	Δ
Government	Writing	2239	276.9	90.7	2284	379.7	97.6	102.8
Non Govt	Writing	604	299.4	107.7	665	399.5	111.1	100.1

Table 19– Year 4 and Year 6 Mathematics Statistics by Authority

English Literacy summary		Year 4			Year 6			
Authority	Domain	N	Mean	Std. Deviation	N	Mean	Std. Deviation	Δ
Government	Mathematics	1951	391.8	51.1	2209	485.2	56.7	93.4
Non Govt	Mathematics	912	396.9	53.7	649	488.0	61.4	91.1

Key Finding 12

In the English literacy and Writing domains students of non government schools significantly out-perform the students of government schools.

In Mathematics the difference in mean performance between non government school students and government school students is not significant.

Table 20– Year 4 Summary mean scaled scored by subject and province

Mean Scaled Score	Literacy and Writing					Mathematics	
	N	Literacy	Reading	Lang	Writing	N	Maths
Central Islands	364	383.8	382.6	384.8	239.8	310	380.4
Choiseul	295	386.4	387.0	385.8	268.5	294	384.1
Guadalcanal	230	397.7	406.0	391.4	260.6	256	390.4
Honiara	380	460.3	463.8	457.0	368.8	424	412.7
Isabel	296	390.4	388.1	392.0	282.9	280	406.5
Makira & Ulawa	313	390.2	390.4	390.5	290.4	312	386.0
Malaita	367	398.5	402.5	394.7	272.0	365	399.0
Rennell & Bellona	34	380.5	375.6	383.6	222.7	34	378.0
Temotu	231	388.3	382.9	392.5	276.9	229	392.5
Western	333	388.6	395.4	383.0	264.9	358	384.6

Table 21– Year 6 Summary mean scaled scored by subject and province

Mean Scaled Score	Literacy and Writing					Mathematics	
Province	N	Literacy	Reading	Lang	Writing	N	Maths
Central Islands	259	431.6	447.1	421.7	323.3	249	463.4
Choiseul	304	432.2	435.8	431.4	330.7	274	488.2
Guadalcanal	353	441.7	437.7	445.2	366.9	340	483.6
Honiara	418	485.2	487.9	485.5	492.9	364	513.5
Isabel	329	438.6	445.0	435.2	388.8	348	497.8
Makira & Ulawa	264	443.7	452.8	437.4	377.1	263	483.9
Malaita	359	444.3	449.4	441.9	388.5	352	488.2
Rennell & Bellona	37	445.3	465.1	432.7	313.9	37	475.6
Temotu	181	443.3	450.8	438.9	434.1	182	491.4
Western	445	433.1	433.6	434.3	350.4	449	464.5

Table 22 - Year 4 Literacy Summary of Standards Levels by Province

Province	Critical %	Emerging %	At %	At or Above %
Central Islands	10.4	33.5	33.2	56.0
Choiseul	9.5	28.8	36.9	61.7
Guadalcanal	3.9	25.7	43.0	70.4
Honiara	1.1	5.5	17.9	93.4
Isabel	7.1	31.1	35.8	61.8
Makira & Ulawa	9.6	26.5	35.5	63.9
Malaita	9.3	22.9	34.9	67.8
Rennell & Bellona	8.8	41.2	29.4	50.0
Temotu	6.5	32.9	36.8	60.6
Western	10.2	30.9	30.3	58.9

Table 23 - Year 6 Literacy Summary of Standards Levels by Province

Province	Critical %	Emerging %	At %	At or Above %
Central Islands	17.0	29.7	31.3	53.3
Choiseul	9.2	36.2	36.8	54.6
Guadalcanal	8.5	30.3	38.2	61.2
Honiara	2.9	10.0	29.4	87.1
Isabel	6.4	33.7	41.6	59.9
Makira & Ulawa	11.0	28.8	29.5	60.2
Malaita	8.9	27.6	35.4	63.5
Rennell & Bellona	0.0	32.4	48.6	67.6
Temotu	9.4	30.4	33.1	60.2
Western	13.5	33.5	32.6	53.0

Table 24 - Year 4 Writing Summary of Standards Levels by Province

Province	Critical %	Emerging %	At %	At tor Above %
Central Islands	83.2	13.7	2.5	3.0
Choiseul	80.3	13.2	4.7	6.4
Guadalcanal	89.1	4.3	5.7	6.5
Honiara	42.9	11.1	18.2	46.1
Isabel	67.2	12.2	15.9	20.6
Makira & Ulawa	70.9	12.8	11.8	16.3
Malaita	82.0	10.6	6.3	7.4
Rennell & Bellona	88.2	2.9	8.8	8.8
Temotu	58.0	10.4	22.9	31.6
Western	79.0	7.2	9.3	13.8

Table 25 - Year 6 Writing Summary of Standards Levels by Province

Province	Critical %	Emerging %	At %	At or Above %
Central Islands	77.2	13.5	5.4	9.3
Choiseul	72.0	21.7	5.3	6.3
Guadalcanal	56.4	23.2	7.1	20.4
Honiara	11.0	10.0	14.8	78.9
Isabel	40.4	32.2	10.0	27.4
Makira & Ulawa	44.7	32.6	15.2	22.7
Malaita	43.5	21.2	12.8	35.4
Rennell & Bellona	86.5	13.5	0.0	0.0
Temotu	27.6	12.7	11.0	59.7
Western	54.4	29.0	9.9	16.6

Table 27 - Year 4 Mathematics Summary of Standards Levels by Province

Province	Critical %	Emerging %	At %	At or Above %
Central Islands	15.5	28.1	36.5	56.5
Choiseul	11.6	23.5	45.6	65.0
Guadalcanal	8.6	25.8	42.6	65.6
Honiara	3.1	18.4	40.1	78.5
Isabel	6.1	20.7	38.6	73.2
Makira & Ulawa	10.9	26.6	40.4	62.5
Malaita	6.8	22.5	39.2	70.7
Rennell & Bellona	11.8	32.4	44.1	55.9
Temotu	7.9	24.5	45.0	67.7
Western	15.6	25.4	31.6	58.9

Table 28- Year 6 Mathematics Summary of Standards Levels by Province

Province	Critical %	Emerging %	At %	At or Above %
Central Islands	8.4	17.3	30.1	74.3
Choiseul	2.2	11.3	25.9	86.5
Guadalcanal	4.1	9.4	27.1	86.5
Honiara	1.4	1.6	18.1	97.0
Isabel	1.1	7.5	23.3	91.4
Makira & Ulawa	4.6	8.4	26.2	87.1
Malaita	2.0	8.5	29.5	89.5
Rennell & Bellona	0.0	10.8	32.4	89.2
Temotu	1.1	9.3	24.2	89.6
Western	4.9	17.6	31.6	77.5

COMPARISONS OF RESULTS BY GENDER, AUTHORITY, AND PROVINCE

In the following section the results of each subject have been presented in a "Box and Whisker" graphical format to show the relative distributions of the performances as well as the summative mean results.

The representation of the graphs is explained below.
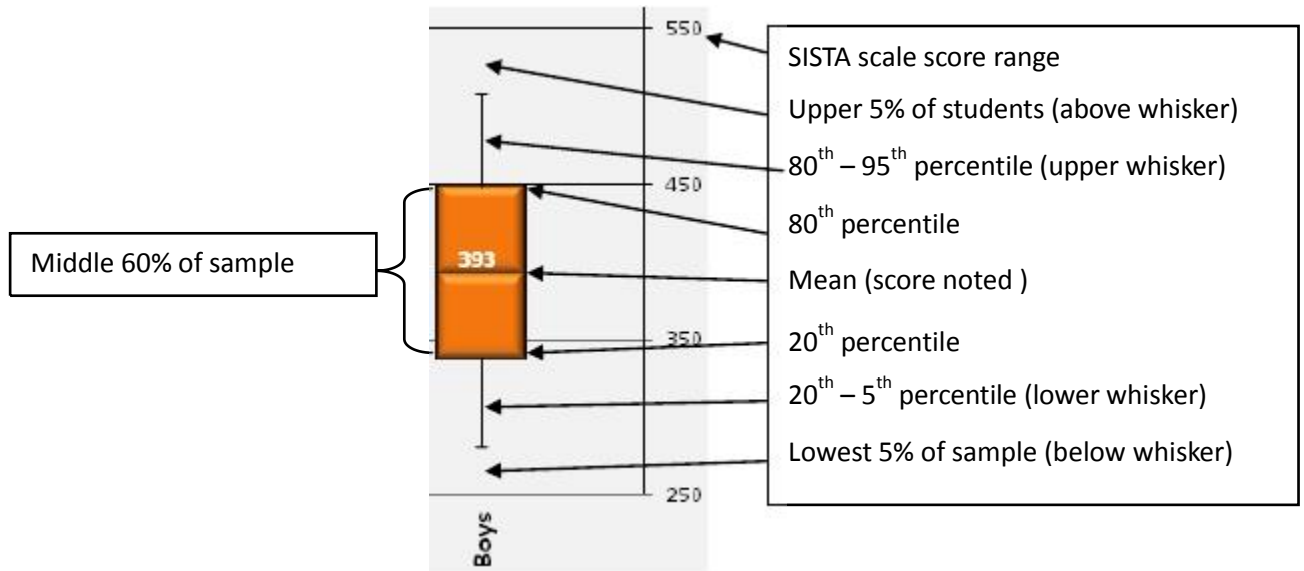
Given that the sample sizes of the tests for Year 4 and Year 6 each approach 3000 students, statistical tests for significance will always show 'significant" differences between groups with relatively small differences in the observed means.

The issue is whether the difference is educationally different in terms of educational outcomes..

The comments relating to each of the box and whisker reports below, attempt to identify 'education outcomes' type of difference.

Figure 16 SISTA Literacy Scaled Score distributions by Year level and Gender 2013
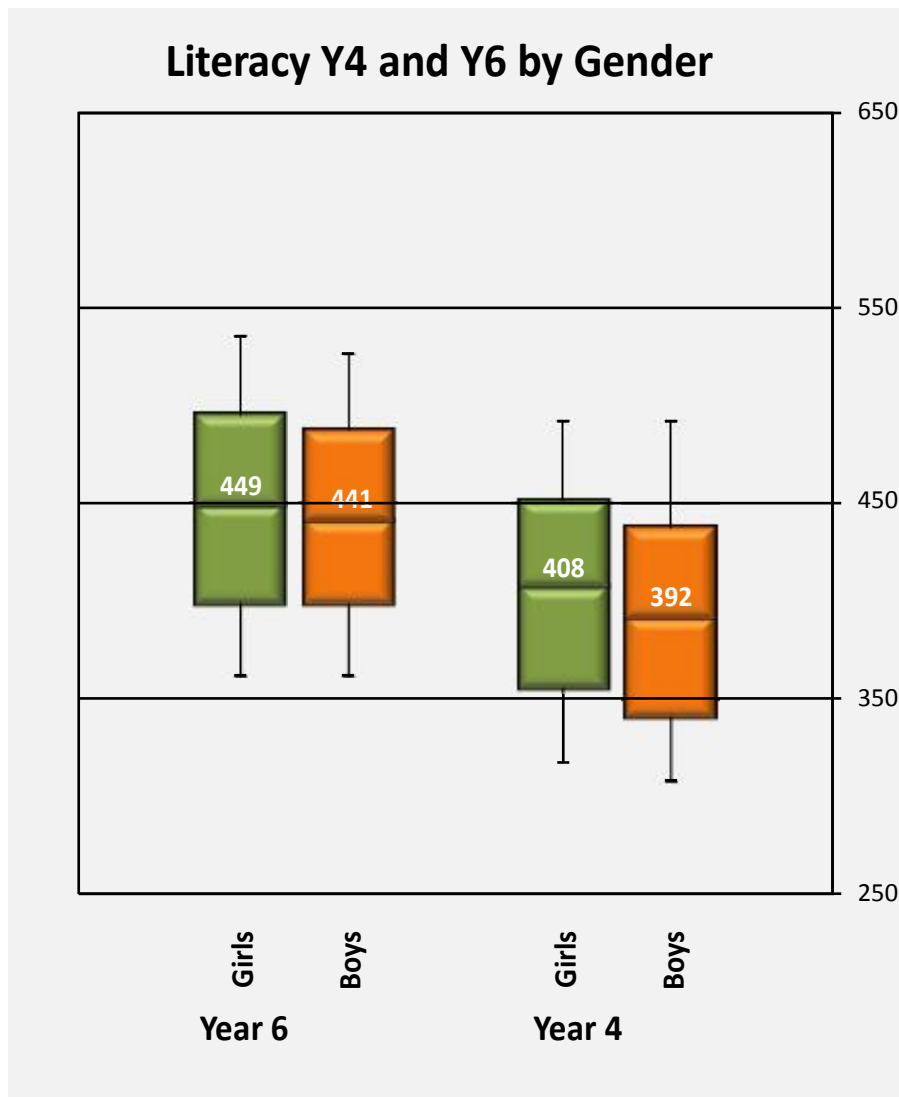
At Year 4 the mean performance of the girls is marginally better than that of the sample of boys with the difference of 16 scaled score points representing an effect size of about 0.3 of a standard deviation.

By Year 6 this difference has reduced by a factor of a half, although the girls still tend to out-perform the boys.

Figure 17 SISTA Literacy Scaled Score distributions by Year level and Authority

Literacy Y4 and Y6 by Authority
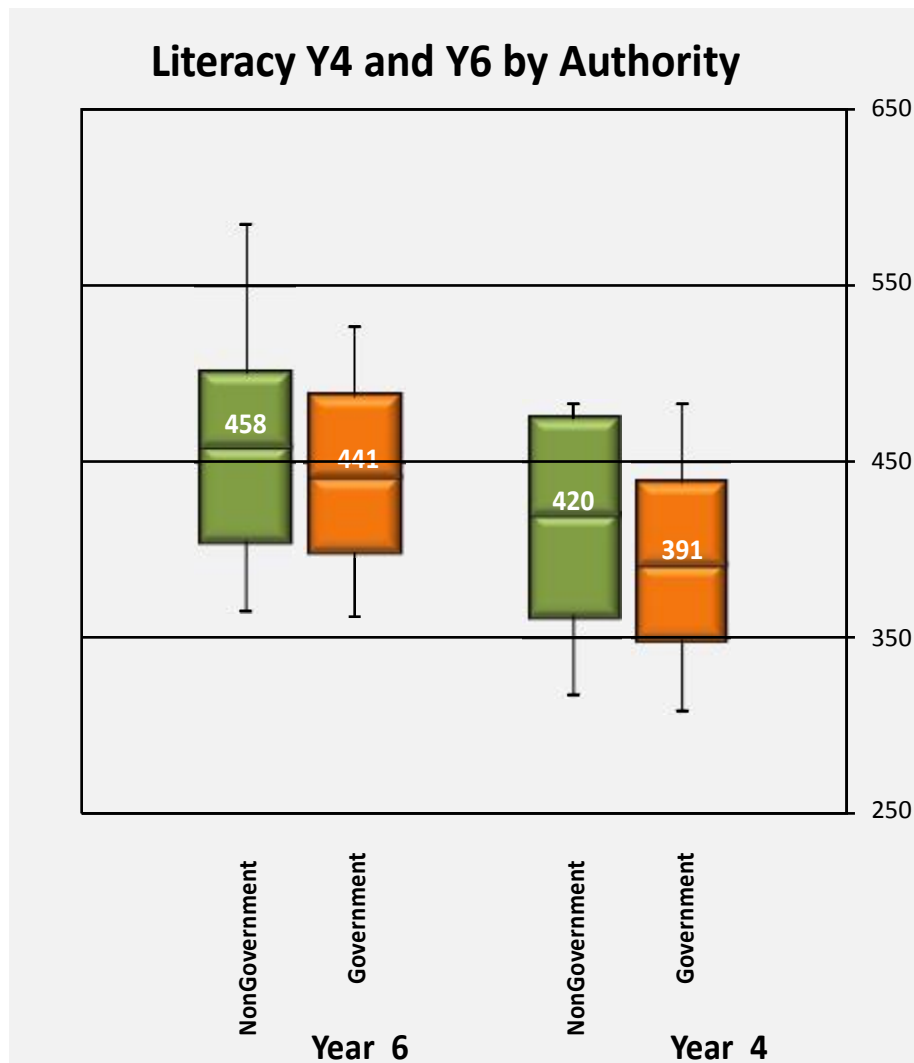
There is a notable difference between the mean performance of the students of the government (provincial) school and the non-government (church authority) students at Year 4 with the difference of 29 scaled score points.

By Year 6 this difference has been reduced to just 17 points. This is still a significant difference but the size of the gaps is reduced.

Anecdotally it has been suggested that these differences in performances, and the relative improvement by Year 6may be in part due to the dominance of untrained teachers in government schools in the early years who are replaced by trained teachers in the upper primary schools.

Figure 18 SISTA Reading Scaled Score distributions by Gender 2013
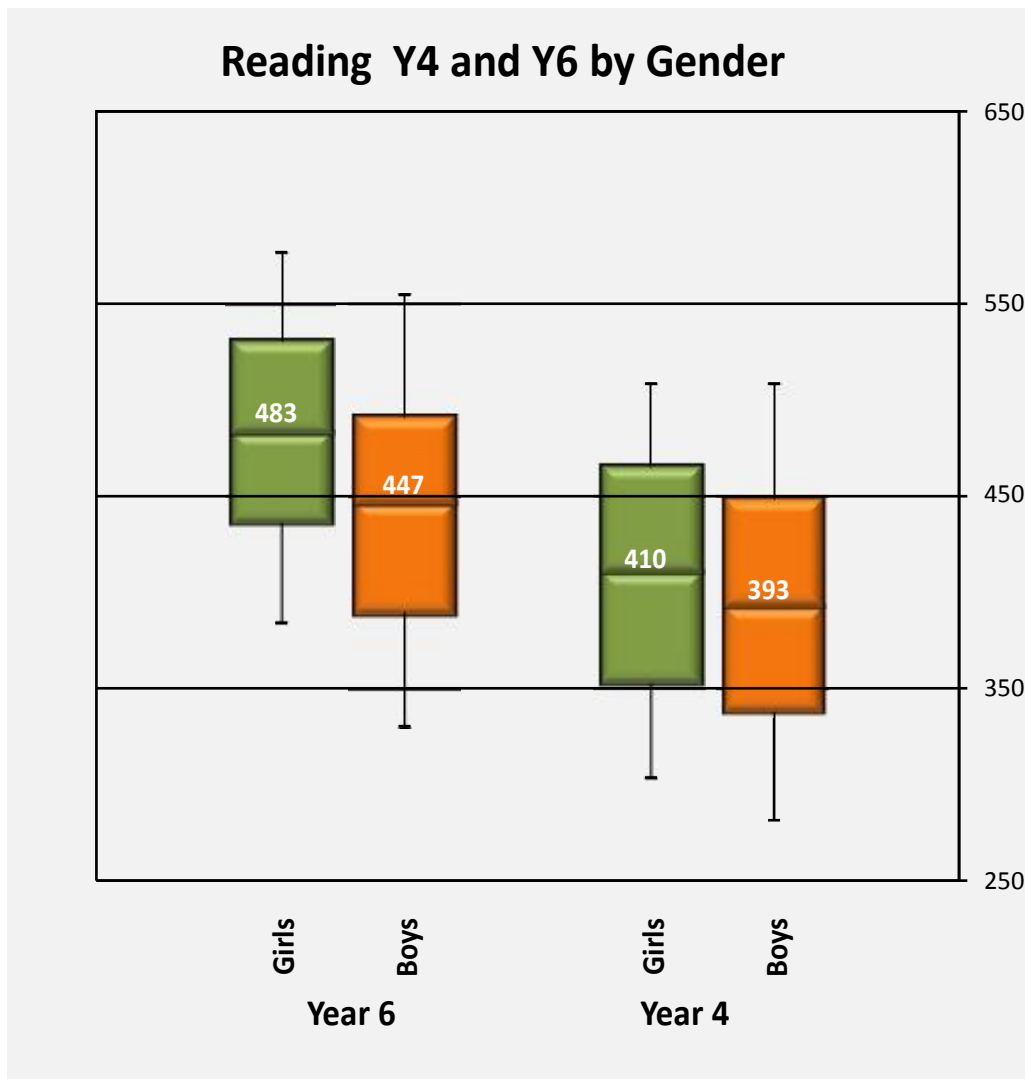

Figure 18 shows a distribution of results very similar to that observed in the overall Literacy distributions displayed in Figure 16 at Year 4 level. However it is noticeable that the growth in the girls mean score at Year 6 is 73 scaled score points compared to the boys mean improvement of 54 points.

Experience in projects of this type indicates that improvement of about one standard deviation (50 scaled score points in this case) is about normal between Year 4 and Year 6. The boys' growth is in the range expected. The girls are doing a little better than expected.
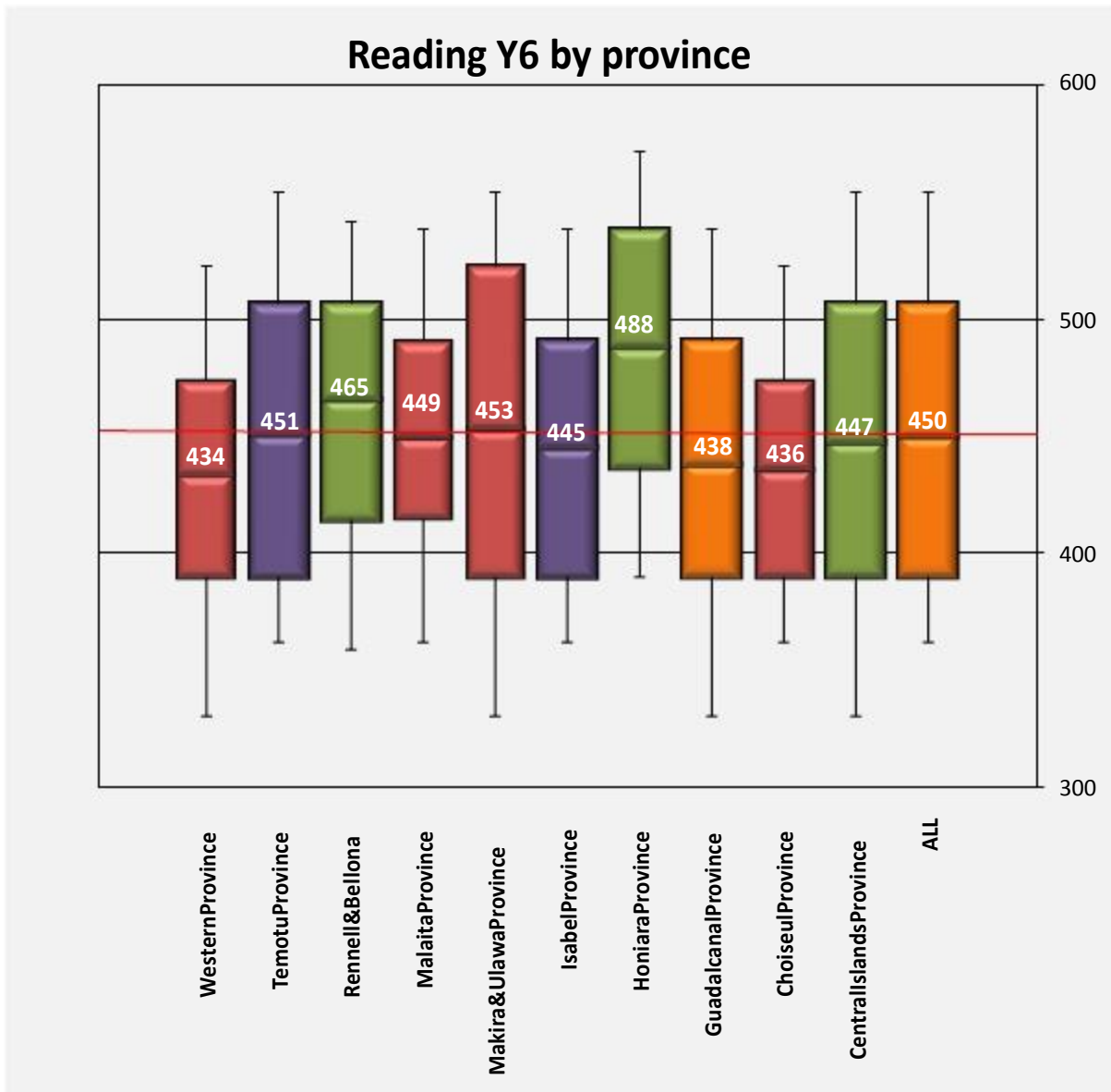
Figure 19 SISTA 1 Reading Scaled Score distributions by Province 2013
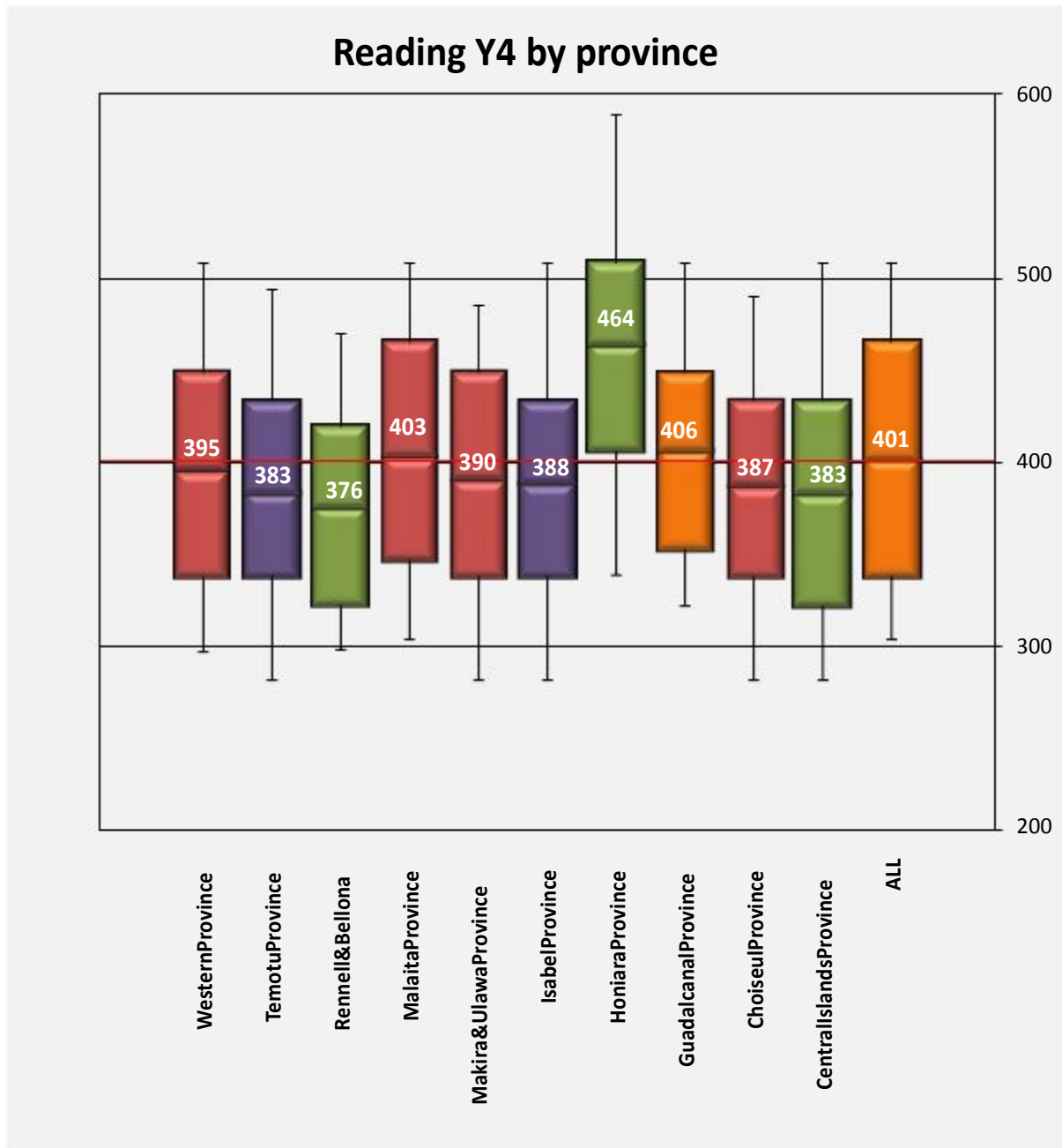
Figures 19 and 20 below provide an overview of the sample results in Reading at Year 4 and Year 6 by province. It is notable that at Year 4 the mean performance of the students of the Honiara province is over 60 scaled score points above the average of the sample (401). On the whole the other provinces are relatively similar in overall performances.

At Year 6 the students of Honiara are still above the average of the sample but now by only 38 points. This may support the contention that there is a better quality of teaching taking place in the provinces in the upper primary school years.

Figure 20 SISTA 2 Reading Scaled Score distributions by Province 2013

Reading Y6 by province

Western Province: 434
Temotu Province: 451
Rennell & Bellona: 465
Malaita Province: 449
Makira & Ulawa Province: 453
Isabel Province: 445
Honiara Province: 488
Guadalcanal Province: 438
Choiseul Province: 436
Central Islands Province: 447
ALL: 450

Key Finding 13

Although the overall performance of the students from the Honiara sample schools is significantly better than the means results of the other provinces at each Year level the growth observed between Year 4 and Year 6 is significantly less in Honiara province than in each of the other provinces.

Figure 21 SISTA Language Scaled Score distributions by Gender 2013

Y4 and Y6 Language by Gender

	650
	550
	450
	350
	250

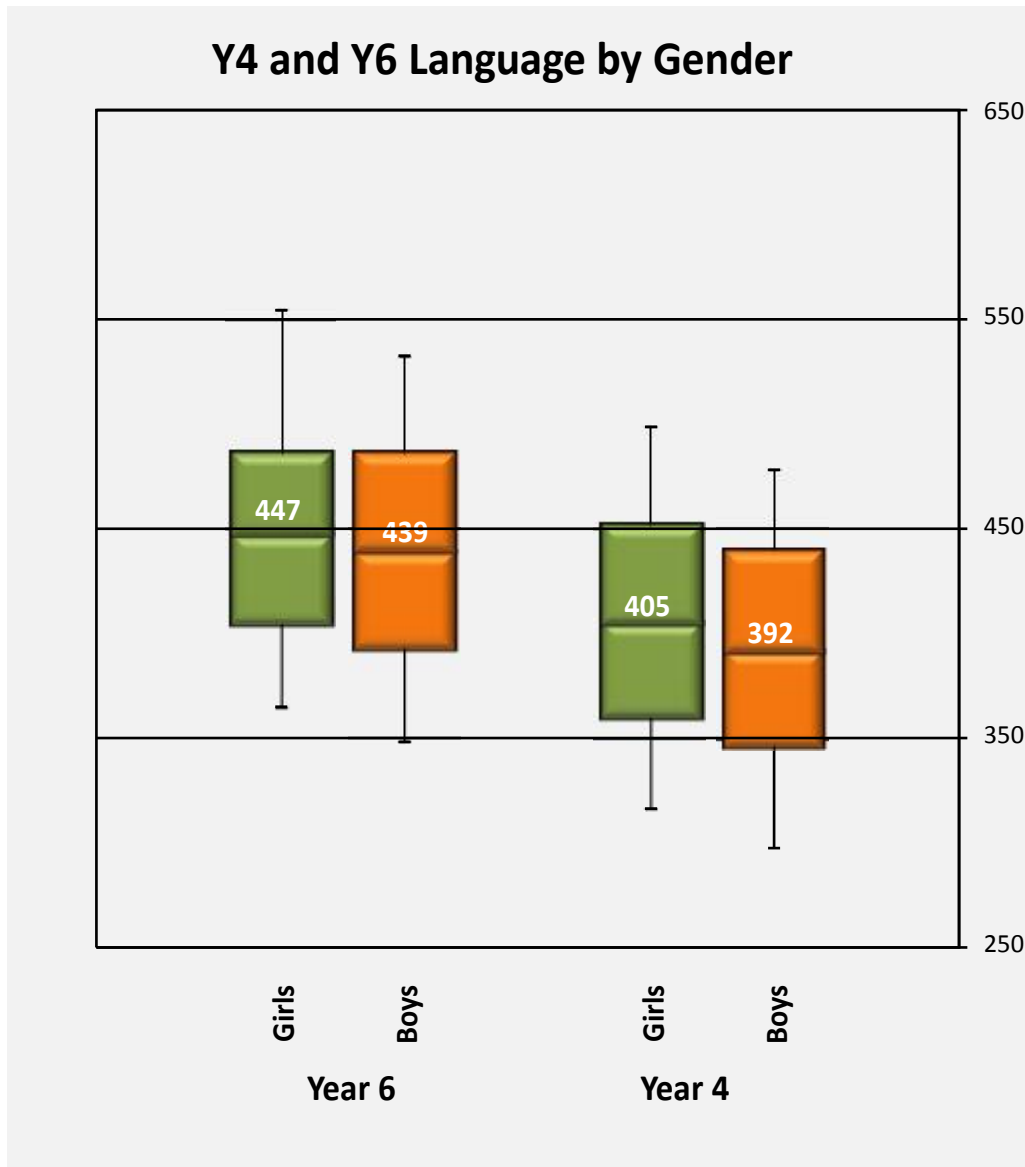447 439 405 392

Girls Boys Girls Boys
Year 6 Year 4

Figure 21 shows the performance of boys and girls in the Language sub strand of the English Literacy tests. When the mean results of this sub strand are compared against the Reading results it can be seen that the scores are very similar at Year 4 level but a little depressed at Year 6 level.

This may be an indicator that the language skills, involving in particular grammar and vocabulary, are not evolving as quickly as the Reading skills.

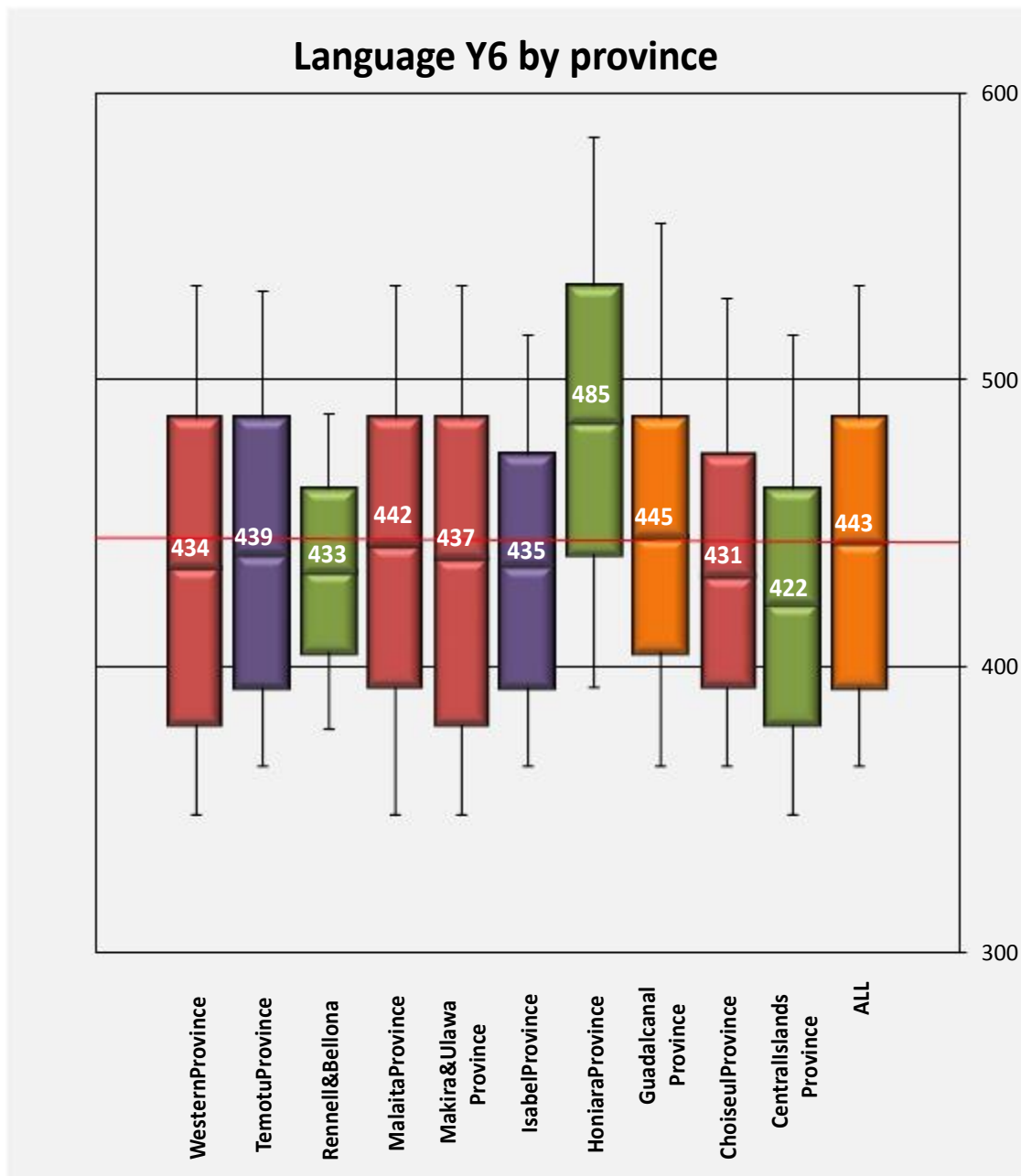**Figure 22 SISTA 1 Language Scaled Score distributions by Province 2013**
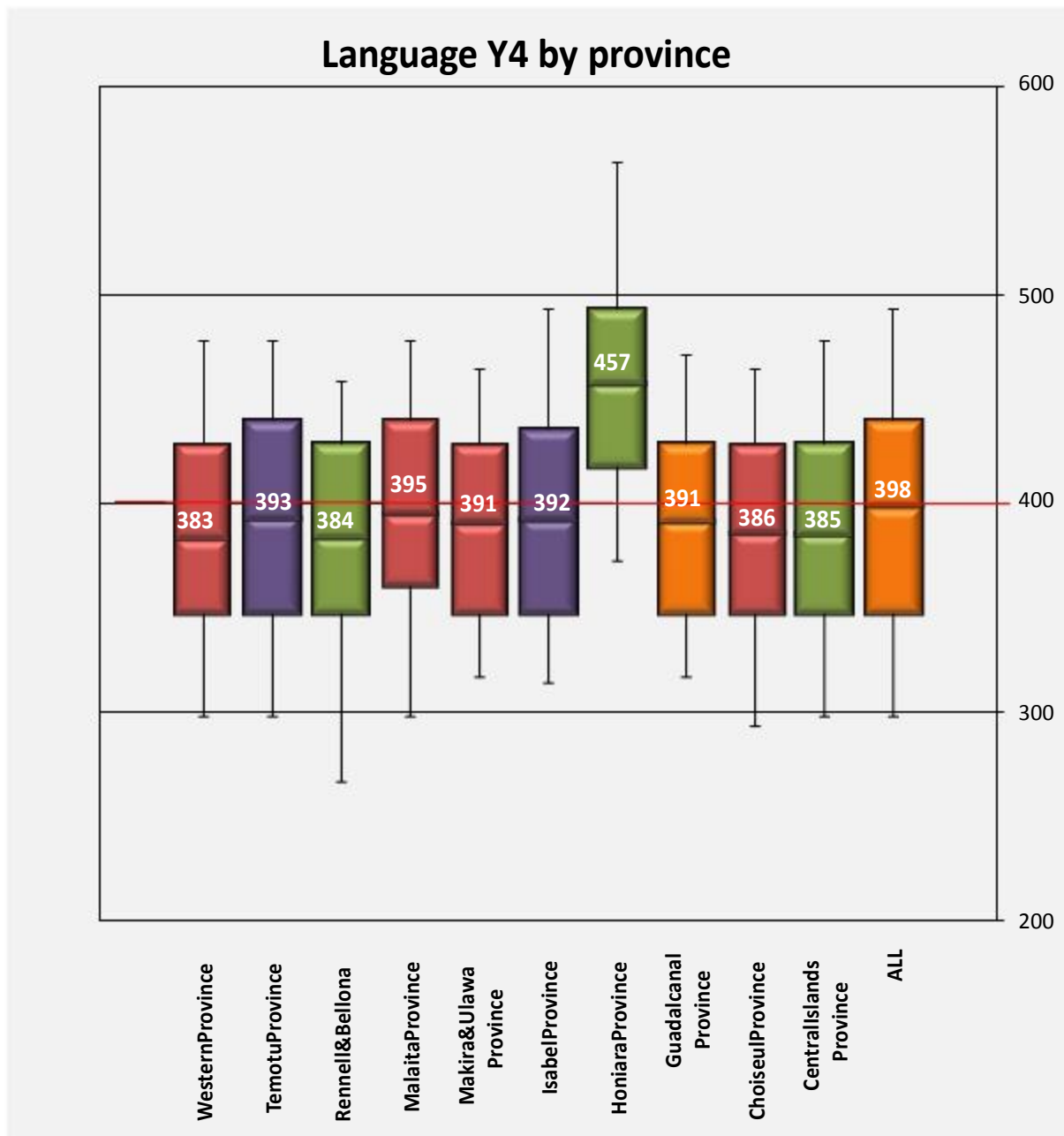
Figures 22 and 23 display the Language strand results by province and Year level.

At Year 4 level the students in the Honiara province are almost 60 scale score points above the mean of the whole sample. By Year 6 the advantage in te mean performance of the Honiara students, although still considerably above the other provinces, has reduced to jus 40 scaled score points above the overall mean.

This is similar to the result observed in Reading.

Figure 23 SISTA 2 Language Scaled Score distributions by Province 2013

Language Y6 by province

Key Finding 14

As observed in the Reading strand the relative growth between Year 4 and Year 6 students in the Language strand is generally less in the Honiara province than each of the other provinces.

Figure 24 SISTA Writing Scaled Score distributions by Gender 2013

Y4 and Y6 Writing by Gender
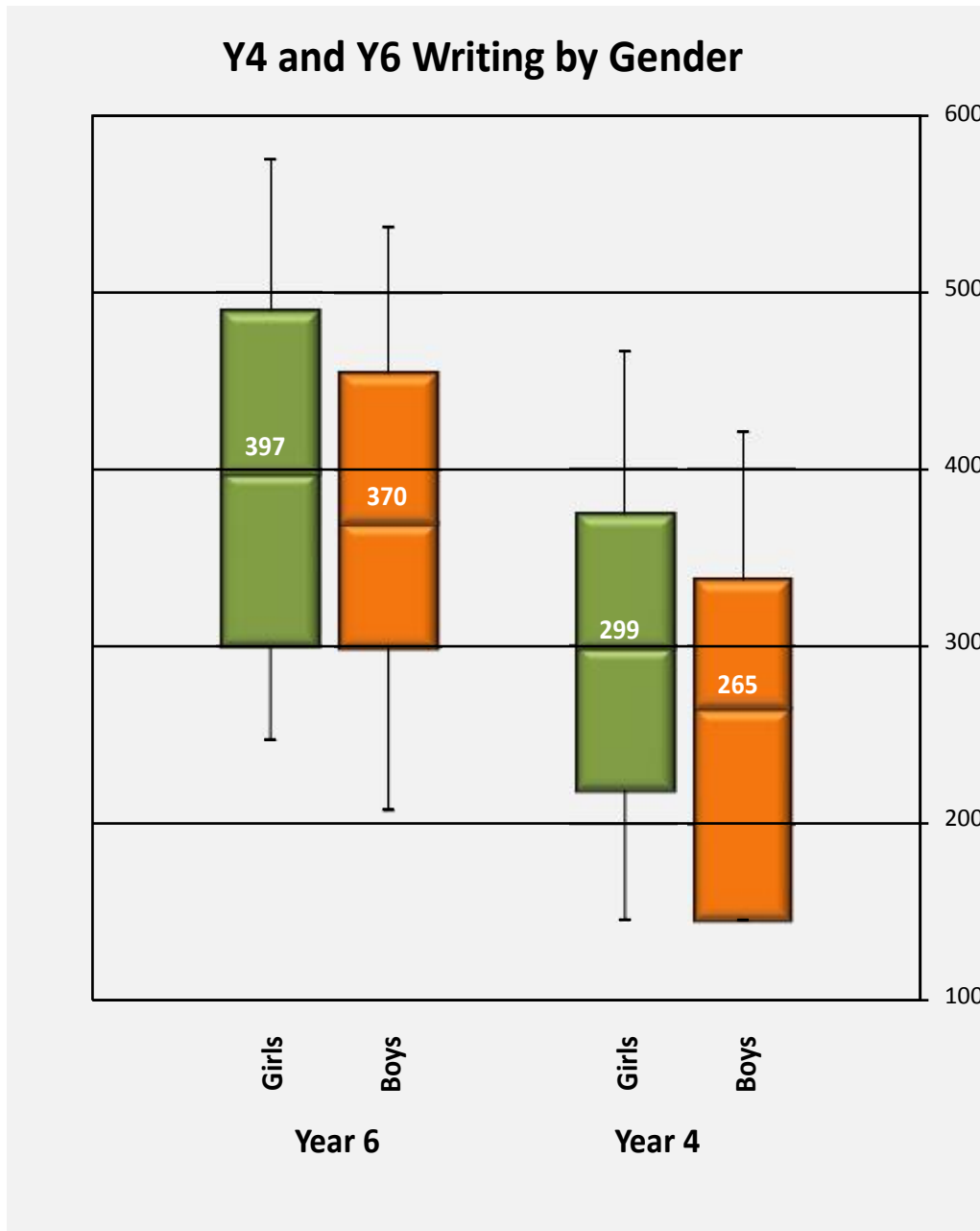
At both Year 4 and Year 6 the results in Writing are weak. Girls significantly out-perform boys but the mean result of the Year 6 girls is about the range that is normally expected of Year 4 students (viz Reading and Language).

As observed earlier Writing is an area that requires significant development in pedagogy and student learning and the weakness in Writing has a considerable impact in the assessment of Reading in its current format.

Figure 25 SISTA Writing Scaled Score distributions by Authority

Y4 and Y6 Writing by Authority
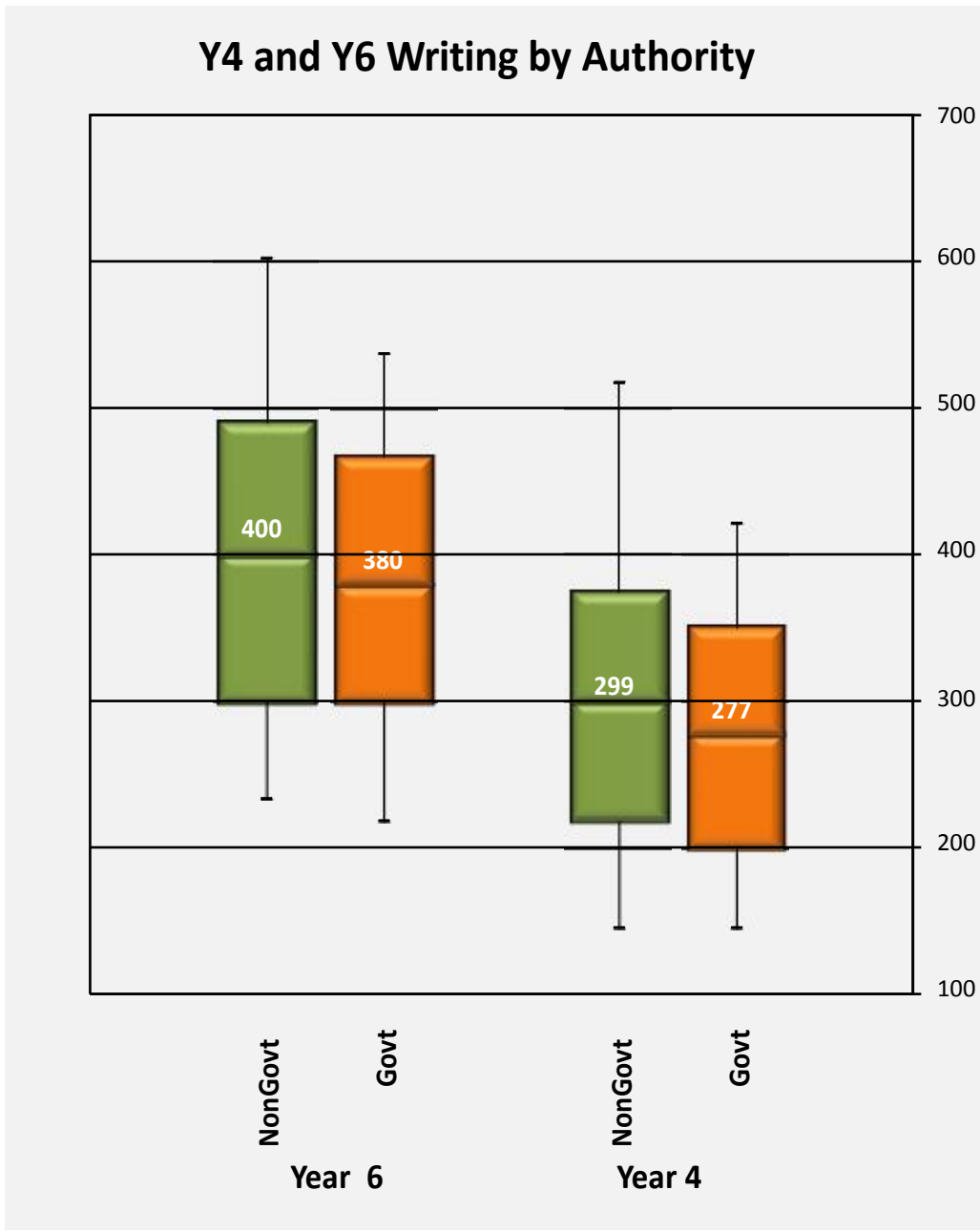
Figure 26 SISTA 1 Writing Scaled Score distributions by Province 2013

Writing Y4 by Province
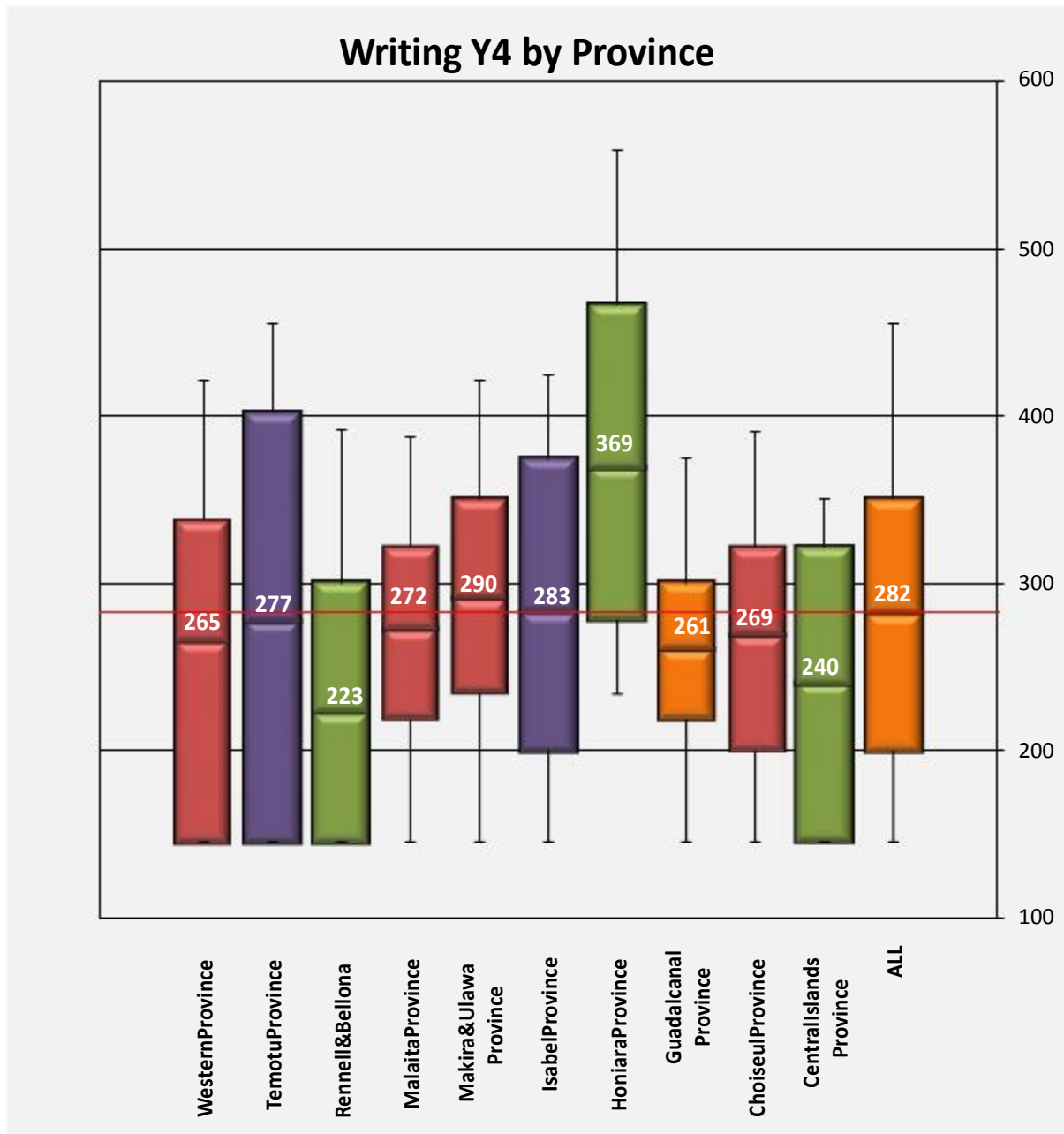
The lack of 'whisker' in the bottom distributions of several provinces at Year 4 level reflects the fact that there are up to 20% of students in the province who scored zero for the Writing assessment.

Figure 27 SISTA 2 Writing Scaled Score distributions by Province 2013
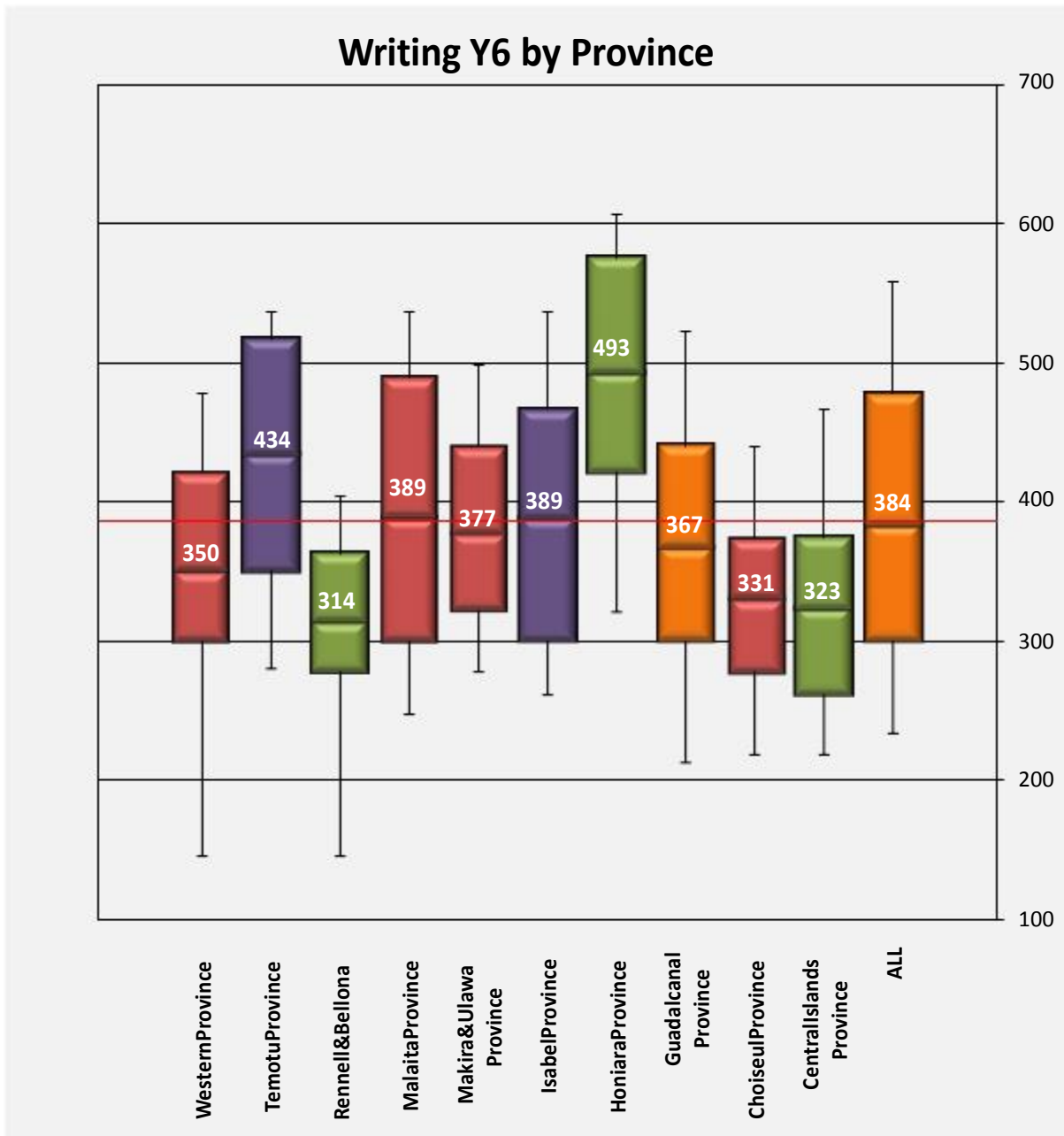
Key Finding 15

There is significant improvement in Writing in each province between the mean performances of Year 4 and the Year 6 students.

Figure 28 SISTA Mathematics Scaled Score distributions by Gender 2013
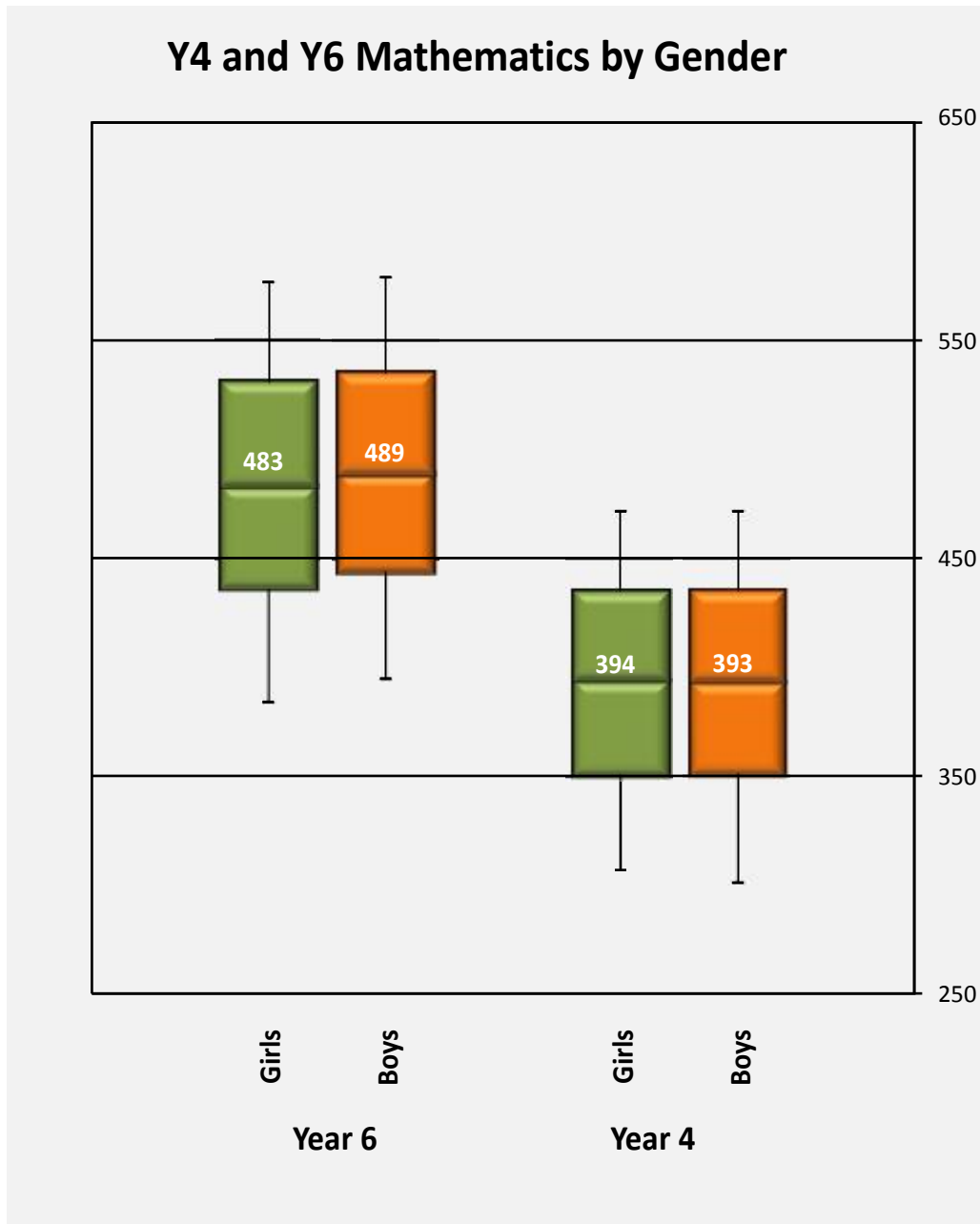
Figure 29 SISTA 1 Mathematics Scaled Score distributions by Province 2013

Mathematics Y4 by Province
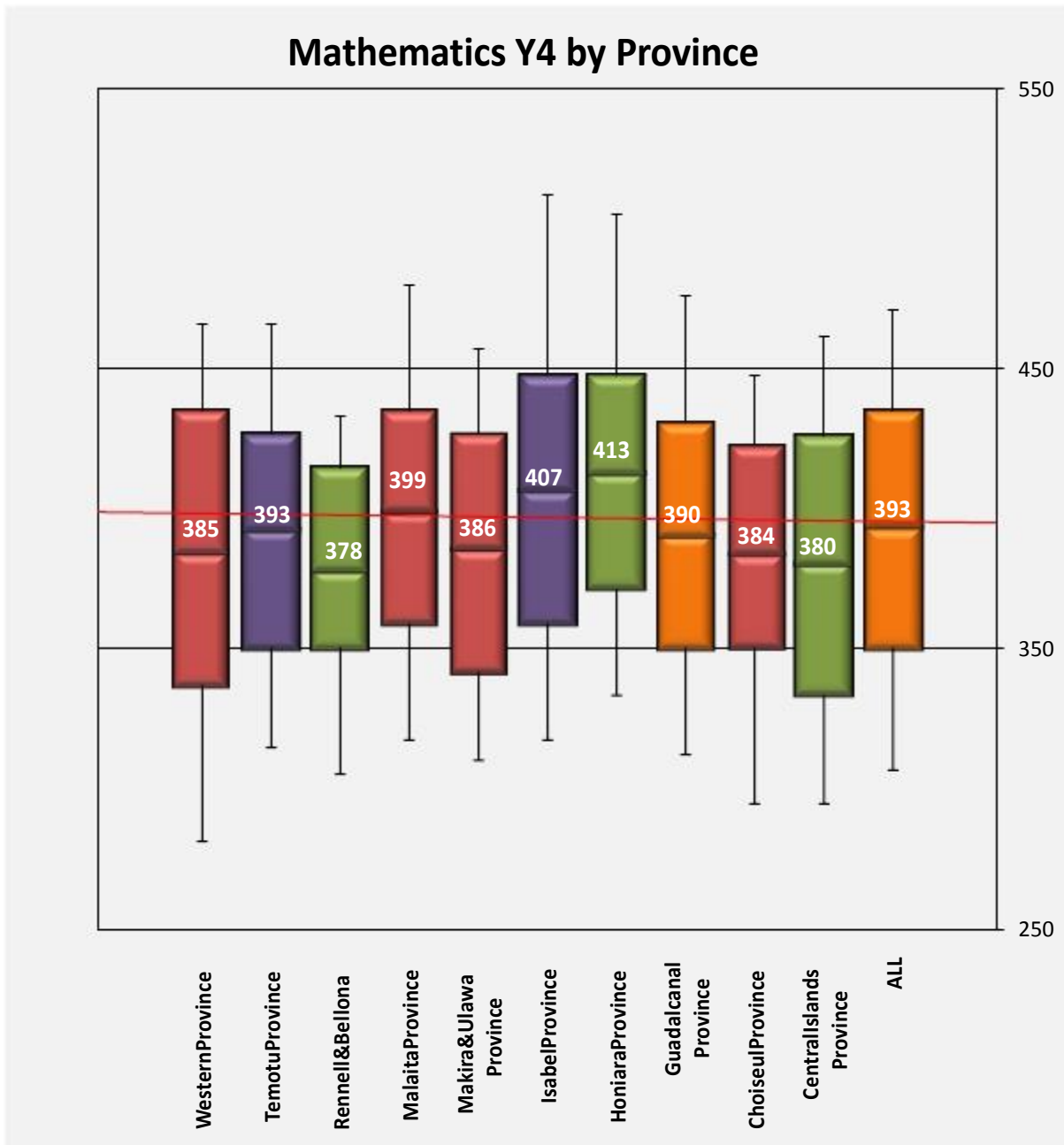
Figure 30 SISTA 2 Mathematics Scaled Score distributions by Province 2013

Mathematics Y6 by Province
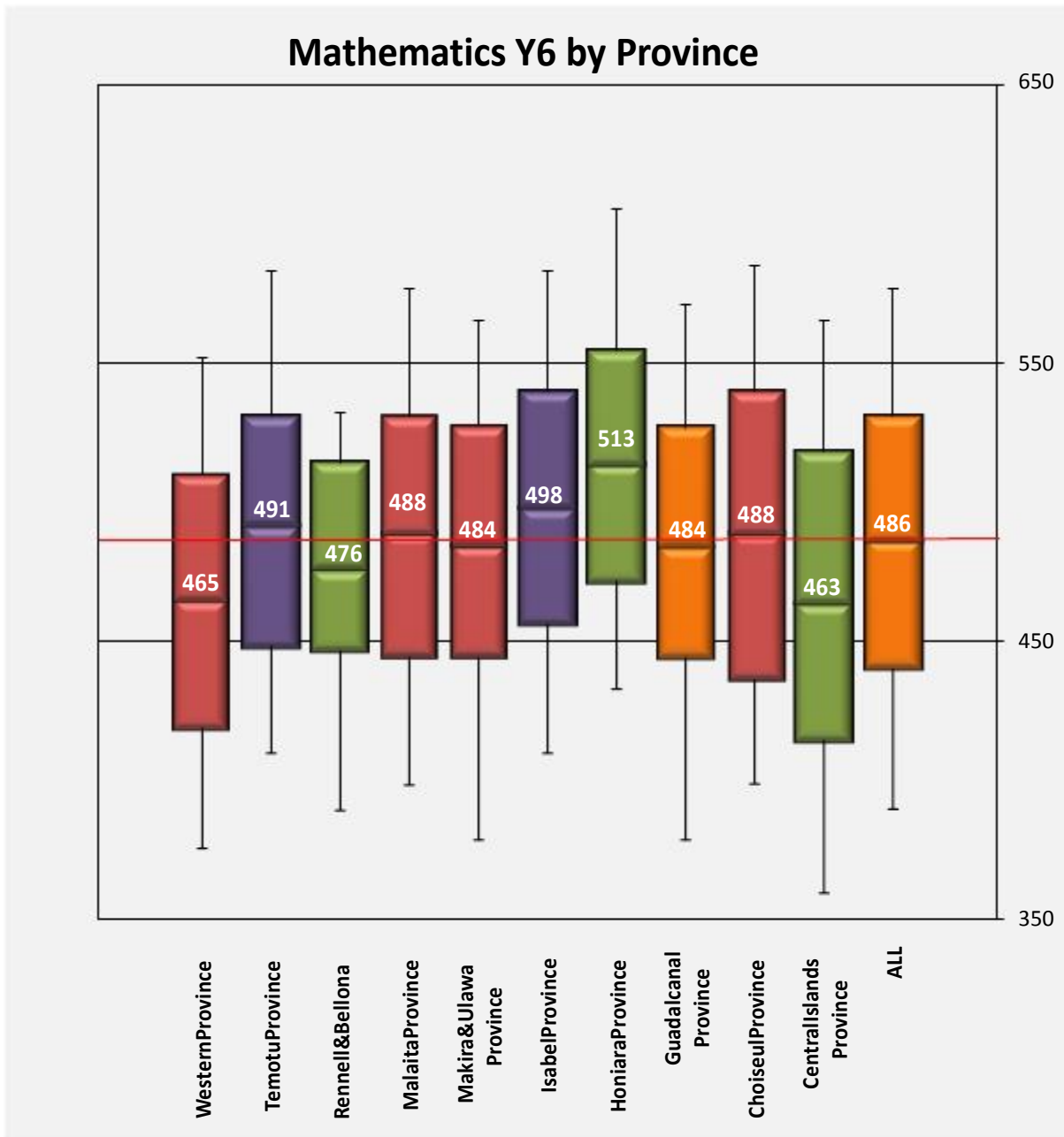
Figure 31 SISTA 2 Mathematics Scaled Score distributions by Authority

Mathematics Y4 and Y6 by Authority
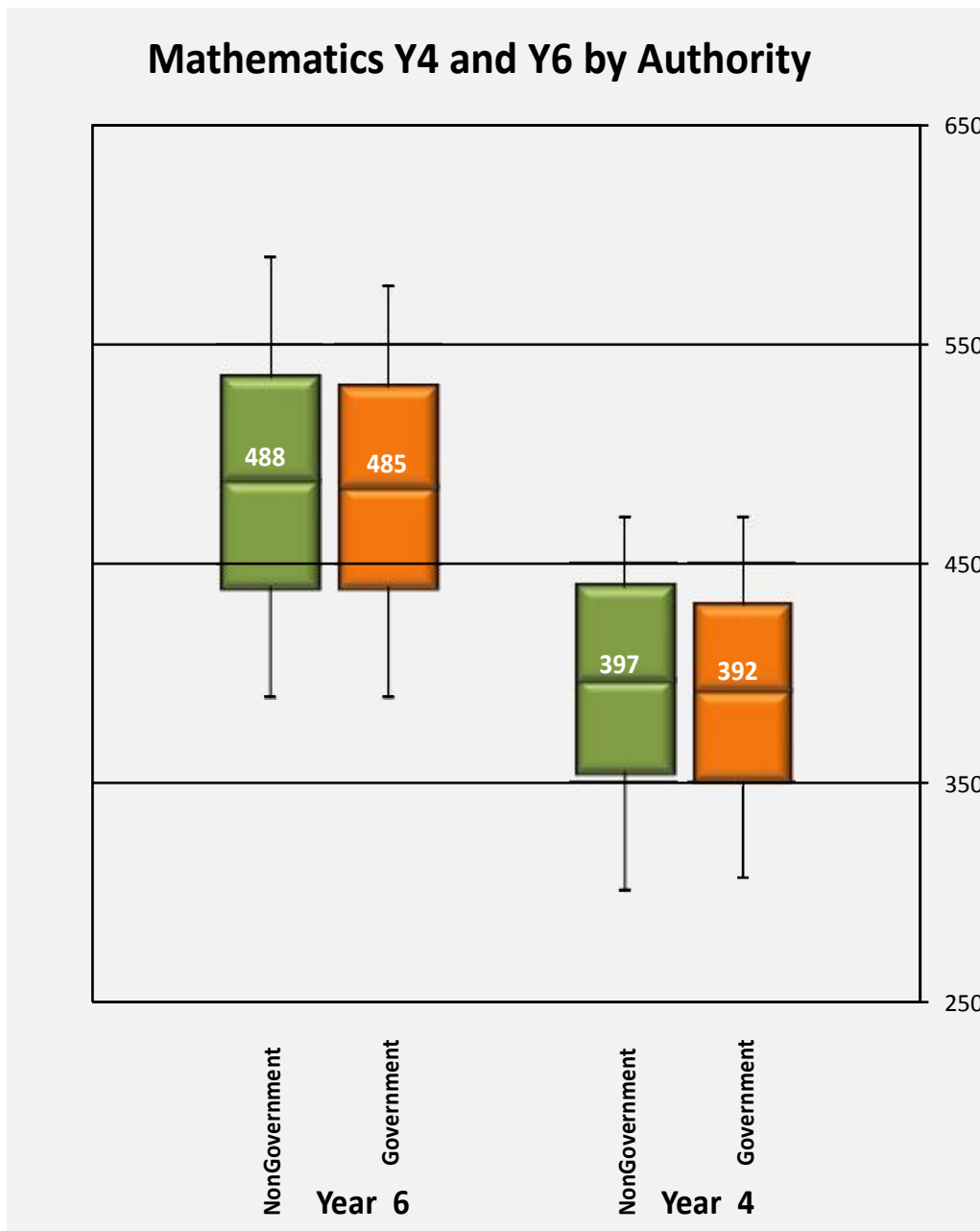
Whereas there is a notable difference in the performance of students in schools administered by the province (Government schools) and those by church authorities (Non Government) in the Literacy tests Figure 31 shows that this is not the case in Mathematics.

In Mathematics the differences in performance are not educationally significant at either Year 4 or Year 6 level.

Key Finding 16

The improvement in the mean Mathematics performance of students between Year 4 and Year 6 is consistent across all provinces

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STRENGTHS and WEAKNESSES

The sections below provide examples of the types of items that significant proportions of the sample were able to succeed with (Strengths) and those that were found to be too difficult for the majority of students (Weaknesses)

As a general rule of thumb items which had a facility (Percentage correct) rate of 80% or greater were included as indicators of strength, and those in which less than 30% of students were successful were defined as areas of weakness. The commonalities of the types of skills observed in each category is demonstrated in the sample of selected items below.

Year 4 SISTA 1 Literacy
Strengths

In the Language component of the SISTA 1 test two items were answered correctly by more than 80% of students. As much as this is a high response rate it still means that more than 10% of students do not have control of the simplest of personal pronouns or the spelling of a very common word – "water".

There were no items in the Reading sections of the paper in which more than 80% of students were able to correctly respond to the items.

Q20 - 88% correct

B. Language Study

Choose the best word for each sentence in Questions 15 to 22.

20. This is _____ book.

- ○ I
- ○ Me
- ○ my
- ○ mine

Q25 - 82% correct

B. Language Study

Tick the word which is spelt correctly.

25. People need to drink a lot of _____ .

- ○ watter
- ○ Wartar
- ○ Worter
- ○ Water

Weaknesses in Reading

The following three Reading items required students to find information in a passage of about 150 words, retrieve in the appropriate idea, and construct a response that could be expressed in the written form.

Although this is the dominant methodology and skill taught in classrooms it is observed that more than 2/3 of the students are unable to retrieve the information and formulate the answer.

Q10 - 13% correct

A. **Reading Comprehension**

Read the story *Maria plans an adventure.*

10. Why did Maria go back to see Seno?

_____

Q12 - 33% correct

A. **Reading Comprehension**

Read the story *Maria plans an adventure.*

12. What warning did Seno give Maria about the airport?

_____

Q14i - 31% correct

A. **Reading Comprehension**

Read the story again then find the underlined words that have the same meaning as the following:

i) at once _____

Appendix 3 shows that it, on average, about 70% of Year 4 students can read a simple passage, comprehend its meaning and find the appropriate answer in a multiple choice format. The significant decline in the success rate is observed when students are asked to formulate and write an answer.

The two stage cognitive and creative skill combination is beyond most students at Year 4.

Key Finding 17

Year 4 students are developing skills in English Reading but have significant challenges in constructing and writing responses compared to recognising a correct answer in a multiple choice item format.

Items were prepared to assess student's understanding of Language in a variety of forms. The items below provide examples of elements of grammar in which less than 1/3 of Year 4 students have demonstrated control over the skills articulated in the syllabus.

Q22 - 14% correct

B. Language Study

Choose the best word for each sentence in Questions 15 to 22.

22. I found a _____ hiding place than he did.

○ good
○ gooder
○ best
○ better

Q23 - 22% correct

B. Language Study

Tick the correct sentence.

23.

○ Sam having a boat.
○ Sam is had a boat.
○ Sam has a boat.
○ Sam have a boat.

Q24 - 32% correct

B. Language Study

Tick the correct sentence.

24.

○ They going to the shops.
○ They go to the shops.
○ They goes to the shops.
○ They are go to the shops.

In the cloze shown below students were asked to select appropriate six words that completed the passage and provided a cogent meaning to the passage as a whole.

The two words that students found most challenging was the use of "so" as an adjective and differentiating between "of" and "off" when describing exiting from the bus (item 28vi) which was the final item in the close exercise.

Q28iv - 31% correct

B. Language Study

28. Choose the correct word from the box to fill in the blanks.
    You can only use each word once.
    (NOT all words are used)

searched	but	so	to
off	as	on	of
drove	stopped	tried	an

Maria was _____ upset that

Q28vi - 16% correct

B. Language Study

28. Choose the correct word from the box to fill in the blanks.
    You can only use each word once.
    (NOT all words are used)

searched	but	so	to
off	as	on	of
drove	stopped	tried	an

and walked _____ the bus.

Key Finding 18

There are weaknesses in English language acquisition at Year 4 level relative to the expected outcomes articulated in the curriculum

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Year 4 SISTA 1 Mathematics

Strengths in Year 4 Mathematics

The same criterion was applied when determining the "strengths" of students in attaining curriculum outcomes in, or up to the standard 4 curriculum. Appendix 5 provides information regarding the response patterns of all students on each item.

Q06a - 92% correct

Addition

6. Add the following:

    a)   6 3 2
       + 2 5 7
       _____

       _____

Q09a - 89% correct

Subtraction

9. Subtract the following;

    a).   8 7 6
        − 7 1 2
        _____

These items display control over addition and subtraction without trading.

Q09c - 82% correct

Subtraction

9. Subtract the following;

    c).   6 4 5 3
        −   3 4 1
        _____

Q13 – 83% correct

Division

13. If $63 \div 7 = 9$, then $7 \times$ ☐ $= 63$.

Q21a – 81% correct

Shapes

21. Complete the table below.

Shape	Number of Sides			
    Rectangle	____			

Weaknesses observed in Year 4 mathematics

There are a number of common areas in which less than 1/3 of students can consistently indicate understanding of the concepts and skills articulated in the syllabus. The areas that are of concern include elements of the Measurement sub-strand, Fractions and Money.

Samples of items in which there are high proportions of incorrect responses are provided below.

Q12d - 25% correct

Multiplication

12.d). $\begin{array}{r} 2\ 9\ 3 \\ \times\ \ \ 4 \\ \hline \\ \hline \end{array}$

Q17 – 4% correct

Fractions

17. Re-write the <u>fractions</u> below from lowest to highest;

$$\frac{3}{4},\ \frac{1}{3},\ \frac{1}{2},\ \frac{2}{3}$$

_____ _____ _____ _____

Q18 – 31% correct

Fractions

18. Calculate;

$\frac{1}{5}$ of 45. _____

Q19 – 16% correct

Fractions

19. What is the value of the fraction at the point **A** on the following number line ;

$$0 \qquad \frac{1}{2} \qquad 1 \qquad A \qquad 2 \qquad 2\frac{1}{2}$$

$$\frac{3}{4}$$

Value at point **A:** _____
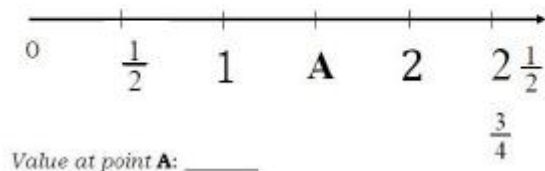
Q20b – 25% correct

Shapes

20. Name the following 2-D and 3-D shapes;

b).

_____
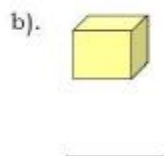
Q22b – 15% correct

22. Complete the table below.

Shape		Number of Edges	
Prism		_____	

Q30 – 12% correct

Measurement

30. Find the area of the following shapes.
Using the formula below:

A = L x W.

7cm

14cm

_____

Q31 – 14% correct

Measurement

31. A piece of land is in the shape of a square.
The length of each side is 20 m. A fence is built all around the piece of land.

How long is the fence around the piece of land?

_____

Q32a – 23% correct

Measurement

32. Use the diagram to answer questions a) and b).

Chewing Gum   Taiyo   Orange

35g   210g   150g

a). Add the weights of the following;

Chewing Gum and **Orange**.   _____

Q32b – 5% correct

Measurement

32. Use the diagram to answer questions a) and b).

Chewing Gum	Taiyo	Orange
35g	210g	150g

   b). Find the <u>difference</u> in the weights of the following;

   Taiyo and **Chewing Gum.** _____

Q36a – 22% correct

Money

36. Subtract the following amounts;

   a). $23.40
      – $ 1.70
      _____

      _____

Q36b – 20% correct

Money

36. Subtract the following amounts;

   b). $35.40
      – $11.90
      _____

      _____

Q37 – 24% correct

Money

37. Robert had $20. He bought $7.80 worth of ice-lollies.
    What was his change?

   ○ $2.80
   ○ $12.20
   ○ $13.20
   ○ $27.80

Q38 – 20% correct

Money

38. Tom has $25.
    Sam has $45.

    What is the <u>difference?</u> _____

Of particular concern here is the evidence in the Money sub-strand that indicates that less than ¼ of the sample have control over functions that would be considered to be normal day to day operations in society.

> **Key Finding 16**
>
> **There are weaknesses in the stands of Fractions, Measurement and Money**

Strengths in Reading Year 6

In order to discriminate between students ability to read, comprehend and retrieve information in texts, compared to their ability to read, comprehend, retrieve and create a written response to questions relating to texts, the Year 6 test had a number of items that were in a multiple choice format AND in common with the Year 4 tests.

At Year 6 level almost 90% of students demonstrated that they have the ability to complete the read and retrieve task successfully as indicated in the items below. It is also noted that these proportions are significant improvements on the success rates achieved by Year 4 students on the same items.

Q01 - 90% correct in Year 6 compared to 74% in Year 4

For questions 1 to 5 tick the correct answer.

1. What is the name of this story?

    ○ The Baby Elephant
    ○ I Like Nelson
    ○ Standing Up
    ○ Elephants are Strong

Q02 - 88% correct in Year 6 compared to 73% in Year 4

For questions 1 to 5 tick the correct answer.

2. What did the mother elephant use to help Nelson stand up?

    ○ her trunk
    ○ her tail
    ○ her voice
    ○ her legs

Q04 - 88% correct in Year 6 compared to 76% in Year 4

For questions 1 to 5 tick the correct answer.

4. What made Nelson feel stronger?

    ○ finding a new friend
    ○ taking his first steps
    ○ drinking his mother's milk
    ○ using his trunk

Key Finding 17

Students of Year 6 display and increased capacity to read, comprehend and retrieve information in texts compared to Year 4 students.

Weakness in the Reading strand Year 6

By comparison items which required that students read a narrative passage, extract information, meaning and/or inferences from the story and create a written response show a very different level of skill attainment compared to just reading and selecting a correct answer in a multiple choice format.

The items below, and in particular the annotations of the facility rates for each item demonstrate this weakness in the student's attainment of the curriculum expectations of Year 6 students.

Q07 - 23% correct

Read the story in the box, and then answer the questions 6 – 14.

7.   Why was Laka so surprised when he looked into the first mirror?

   ○   he did not recognise himself
   ○   he thought there was something wrong with the mirror
   ○   he no longer looked like his father
   ○   he looked very miserable

Q09 - 29% correct

Answer the questions 9 to 13 in complete sentences.

9.   What made Laka miserable?

_____

Q10 - 23% correct

Answer the questions 9 to 13 in complete sentences.

10.   How did Laka and his servant find the mirror of truth?

_____

Q11 - 9% correct

Answer the questions 9 to 13 in complete sentences.

11.   Why did Laka pick up the mirror with 'shaking hands'?

_____

Q12 - 17% correct

Answer the questions 9 to 13 in complete sentences.

12.   Why was Laka's reflection different in the mirror of truth?

_____

Q13 - 13% correct

Answer the questions 9 to 13 in complete sentences.

13.   What lesson did Laka learn in this story?

_____

Q14i - 19% correct

Read the passage again and write the meanings of the following underlined words from the passage.

14. i)   miserable   _____

Q14ii - 9% correct

Read the passage again and write the meanings of the following underlined words from the passage.

14. ii)   determined   _____

Q14iii - 11% correct

Read the passage again and write the meanings of the following underlined words from the passage.

14. iii)   sympathised   _____

Q14iv - 29% correct

Read the passage again and write the meanings of the following underlined words from the passage.

14. iv)   glittering   _____

Q14v - 29% correct

Read the passage again and write the meanings of the following underlined words from the passage.

14. v)   responsibilities   _____

The facility rates expressed in the Reading items above reflect the observations made in the Year 4 assessments.

Although the common classroom practice is this form of constructed response there is a significant difference between students ability to read, retrieve and comprehend information in texts compared to their general ability to formulate a response (as opposed to identifying a correct response in a multiple choice format) and write that response in a cogent set of words.

This is particularly obvious in the "write the meaning" type items in which some of the words have quite challenging synonyms and constructing a suitable piece of text is a quite difficult task.

Key Finding 18

At Year 6 items that require students to read and comprehend the information in texts and then to formulate and answer and write a constructed response are generally poorly completed.

Weakness in the Language strand

Q19 - 21% correct

Select the correct word from the brackets. Write your answer in the blank space provided.

19. Linda sang a _____ song than the last one. (good, better, best)

Q26 - 26% correct in Year 6 compared to 14% at Year 4

Choose the best word for each sentence in Questions 23 to 28.

26. I found a _____ hiding place than he did.

- ○ good
- ○ gooder
- ○ best
- ○ better

Q27 - 31% correct in Year 6 compared to 22% in Year 4

Tick the correct sentence.

27.
- ○ Sam having a boat.
- ○ Sam is had a boat.
- ○ Sam has a boat.
- ○ Sam have a boat.

Q28 - 29% correct compared to 32% in Year 4

Tick the correct sentence.

28.
- ○ They going to the shops.
- ○ They go to the shops.
- ○ They goes to the shops.
- ○ They are go to the shops.

Q29vi - 31% correct

29. Choose the correct word from the box to fill in the blanks.
You can only use each word <u>once</u>. (NOT all words are used)

searched	but	so	to
off	as	on	of
drove	stopped	tried	an

Maria was _____ upset that she went _____ the front, and walked _____ the bus.

As observed in Year 4, students of Year 6 are still experiencing difficulty in words like "so" used as an adverb and in discriminating between "of" and "off" to alight from a bus.

Key Finding 19

The types of weaknesses observed in Year 4 Language are present in Year 6

Q01a - 94% compared with 69% in Year 4

NUMBERS

1. Add the following;

    a). 7 3 5 2

    + 3 4 6 5

    _____

Q01b - 81%

NUMBERS

1. Add the following;

    b). 697 318

    + 16 193

    _____

Q04a - 81% compared with 56% at Year 4

NUMBERS

4. Divide the following;

    a).

    8) 96

    _____

Q05a - 80% correct

NUMBERS

5. Calculate the following;

    a). $6\ 714 + 3\ 273 - 7\ 871 = $ _____

Q08a - 93% compared with 68% in Year 4

Money

8. Calculate the following;

    a). $2.60

    + $1.30

    _____

Q08b - 84% compared to 42% in Year 4

Money

8. Calculate the following;

    b). $75.90

    + $ 3.50

    _____

Key Finding 20

The item statistics above indicate that by Year 6 most students tend to have control over the basic functions of addition and subtraction and its application to money when expressed in the traditional text book algorism format.

In each of the common items that relate to basic operations there is evidence of significant improvement by Year 6 compared to Year 4 in the mean performances.

Q11a - 92%

Graphs

11. The pie chart shows the favourite sport chosen by 30 standard six students in a school.
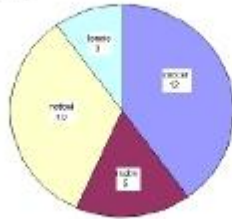
(a). How many students chose rugby?   _____

Q11b - 80%

_____   _____

Graphs

11. The pie chart shows the favourite sport chosen by 30 standard six students in a school.
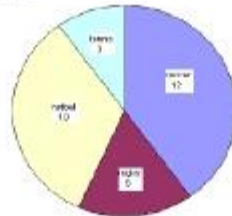
(b). Which was the most popular sport?   _____

Q12a - 87% compared with 80% in Year 4

12. The tally chart shows the favourite subject of 19 students in a class.

a)   Complete the tally table

Subject	Tally	Number
Maths	|||||	5
Science	||||	___
English	|||||-||	___
Soc Science	|||	___

Q12b - 81% compared with 68% in Year 4

12. Complete the number column in the tally table above and draw a vertical bar graph of the information.

b)
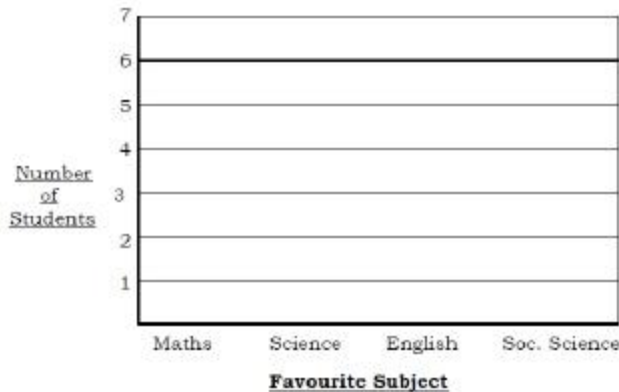
Q13a - 90% correct

13. The graph shows the rainfall in Honiara for a week.
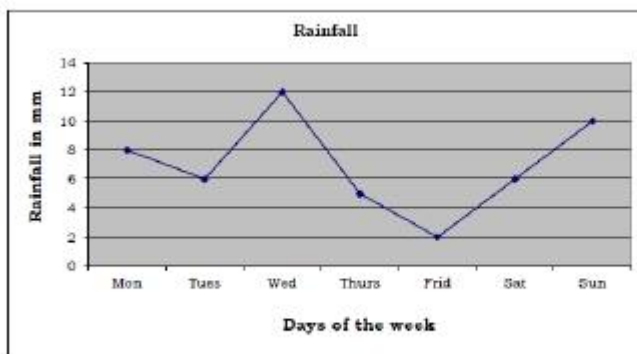
(a). Which day had the most rain?   _____

On average, at Year 6 level students appear to have a reasonable grasp of the types of graphs that are commonly represented in the press and other media. Items 11a and 11b (above) indicate that most students are able to extract the information in graphs and read the key to give meaning to the values.

Weaknesses in Year 6 Mathematics

At Year 6 the weaknesses in Mathematics are grouped around three basic topics:
  Long Division – involving numbers or fractions (including money);
  Fractions; and
  Word problems – covering a number of different sub-strands

Q04c - 29% correct

NUMBERS

4. Divide the following;

c).
  $24 \overline{)\ 4\ 824}$

Q10b - 26% correct

Money

10. Divide the following;

(b).
  $23 \overline{)\ \$1\ 288}$

FRACTIONS

Q17c - 25% correct

17.   Calculate the following;

c). $\frac{3}{4}$ + $\frac{1}{5}$ = _____ .

Q21 - 8% correct

Decimals

21. In the number **1·563**, write the value of the digit in the;

tenth place. _____

Q24a - 84% correct

Decimals

24. Subtract the following;

a). 1.5 − 0.4 = _____

Q26a - 24% % correct

Decimals

26. Divide the following;
a). 8.6 ÷ 4 = _____

Q26b - 30% % correct

Decimals

26. Divide the following;

b). 6.3 ÷ 7 = _____

WORD PROBLEMS

Percentages

31. Calculate;

    b). 30 as a percentage of 250. _____

Q32 - 27% % correct

WORD PROBLEMS

32. A bag had a total of 230 mangoes. If 20% of the mangoes were bad, how many mangoes were bad?

    _____

Q33 - 10% % correct

WORD PROBLEMS

33. In a survey of 250 people, 150 said they watched TBN each week.

    What percentage of those surveyed watched TBN each week?

    _____

Q35 - 7% % correct

Ratios

35. A school has 15 teachers and 300 students. Write the number of students per teacher in the simplest ratio.

    _____

Q36c - 28% % correct

Ratios

36. Change these measurements as shown;

    c). 234 ml (to l) _____

Key Finding 21

The weaknesses in Fractions observed in Year 4 are still challenges in Year 6 Mathematics. Word problems are challenging for Year 6 students.

RECOMMENDATIONS

RECOMMENDATIONS

Curriculum

Literacy - Writing
The results in the Writing assessments of Year 4 and Year 6 indicate a significant weakness in the skills associated with creative Writing.

In the Year 6 Reading comprehension assessment the responses of students to the open-ended, constructed response items that require students to write a response are relatively poorly attempted with the sample average correct score in these items in the range from 10% to 30%.

It is difficult to know how much the poor writing skills have contributed to the poor Reading results in this section of the assessment. The aggregation of Reading and writing skills into one item type adds a level of confusion to the result.

Recommendation 1

- *That the development of writing skills be noted as a weakness at the national level and that strategies be developed by all contributors to students and teacher learning to improve student outcomes in the written form of English.*

Mathematics
It is apparent that in Year 4 Fractions, Measurement and Money are sub-strands with significant weaknesses.

It is also not unreasonable to suggest that Fractions is a sub-strand that many non-Mathematics trained teachers find challenging, and in the Solomon's society there are cultural issues that mean that the concept of fractions can be confused. (in Mathematical terms a half is precisely two equal shares but in Solomon's culture it is two shares and there can be a 'bigger half').

Several of the measurement items that have been the most challenging for Year 4 are grounded in fractions, requiring students to have an understanding of units of measure (grams and kilograms)

Money is a sub-strand that has a direct impact on a student's effectiveness in society and as such should have a relatively high importance in the curriculum. Money is an application of decimal fractions that is functionally understood by most teachers.

There is an increasing trend in educational curriculum development to narrow the curriculum scope but require a greater depth of the content that is included. That is value understanding and application of a narrow range of concepts rather than surface understanding of a wider range.

Recommendation 2

- *That in Year 4 ONLY the concept of Fractions and its application to Money be included in the curriculum AND that more time be devoted in the scope and sequence programs to the mastery of the sub-strands components of Money.*

Teaching and Learning
Recommendation 3

- *That the pedagogy of teaching of writing as a subject be prioritised in teacher training AND that the use of criterion referenced assessment of writing be supported in teaching programs*

Professional Development
Recommendation 4

The data reveal that there is a weakness in the attainment of Reading skills beyond skills that require retrieval of literal information or word matching in the texts. Providing exemplars of tasks and good assessment is critical to addressing this weakness. Teachers need resources to support the teaching and classroom assessment of reading in forms other than the current constructed response paradigm that confuses Reading comprehension skills with analytical thinking and creative writing skills.

It is suggested that the student/lecturer resources of SINA and USP be used for students to source suitable texts and prepared materials for use in classroom as a s a component of their pedagogical leaning/assessment. These materials can be reviewed and modified using the technical expertise of NESU and CDU to general a library of templates for teachers to use in classrooms as Reading resources and good examples of classroom assessment practice to improve student learning outcomes.

- *That the resources of USP, SINU, MEHRD Curriculum Development Unit and NESU be used to prepare Reading resources with associated assessment items to provide resources to assist teachers in the teaching and assessment of student Reading skills.*

Recommendation 5

There is a considerable resource available in the form of student work. In Writing there are examples of the full range of student responses from those of low ability to some excellent, highly scored work. The use of actual samples of student work, annotated to explain the rationale underpinning the marks awarded using the implemented rubric, is an excellent teaching resource that allows teachers to get a sense of the Standards that are expected, and the manner in which the technical aspects and writing skills of students can be improved in a variety of ways.

- *That samples of student works from the 2013 SISTA assessment be annotated and provided to schools as samples of various standards of student writing and the use of the SISTA writing rubric as a tool to assist teaching and learning.*

Recommendation 6

The analysis has included two levels of school report.

1. An item level report that describes skills assessed by each item and the relative performances of the school, the province and the national sample on each items; and
2. A class report that enables a quick reference to the manner in which each member of the target class has responded to each item.

These two report provide diagnostic data for review by principals and teachers to understand the strengths and weaknesses of students in various aspects of the curriculum at school level. These reports provide information for data-driven interventions at school level.

To make efficient use of the information in these reports principals and teachers need instruction in their interpretation and how they can use them to develop school based policy.

- *That workshops be scheduled with key school level personnel, principals and curriculum leaders, in the manner in which the school level data from the SISTA analysis can be used to inform the development of school development programs and individual class level interventions.*

Analysis and Psychometrics

Literacy
Although the SISTA English assessments of 2013 functioned adequately there are some aspects that could be improved in the test forms for future implementations.

The Year 6 instrument requires some items to fill the gaps identified in Figure 2. Ideally these should be multiple choice items, possibly linked to Year 4, that enable an evaluation of how well Year 6 students extract information from texts without being required to construct a written answer.

Recommendation 7

- *That the Year 6 SISTA English paper include another reading passage targeting the weaker ability students AND that the majority of the items assessing the comprehension of these students in this passage are of multiple choice format.*

The English SISTA scale has been calibrated using the data from the 2013 sample assessment.

Recommendation 8

- *That, in the event that the SISTA X forms are used for future national sample assessments, the items locations detailed in Appendices 3 and 4 are anchored to assess student abilities in the assessment.*

In the event that that NESU and the Ministry resolve to continue with the SISTA program, and that they decide to utilise the SISTA Y suite of assessments then these forms will require significant revision to match the constructs developed for the SISTS X suite of assessments.

Recommendation 9

- *That, in the event that the SISTA Y forms are used for future national sample assessments, the test forms be revised to match the construct of the SISTA X forms, AND common items between the SISTA X and SISTA Y forms are included so that the Form Y results can be calibrated on the 2013 SISTA scale.*

Mathematics

The Year 6 results in Figure 4 display a gap in the lower range of the item difficulty distribution and possibly too many items in the more difficult range.

Recommendation 10

- *That a review of the Year 6 Mathematics SISTA 2 X paper be conducted with a view to increase the number of slightly easier items and reduce the number of more difficult items in an attempt to better target the tests to the students and therefore maximise the information regarding their overall ability.*

IMPLICATIONS FOR POLICY AND FUTURE STUDIES

The development of a Standards Referenced Scale for the SISTA assessments that spans both Year 4 and Year 6 is an initiative that allows more reliable estimates of relative performance and estimates of growth over time to be measured. This scale is grounded in the results of the "implemented" curriculum – what has been observed in student responses to skills learned in classrooms.

The proportions of students achieving each level have been developed using a rationale that is embedded in the scale and the items that contribute to the development of the scale.

In terms of the descriptions of achievement and acceptable standards of achievement (Level 3 in Year 4 and Level 4 in Year 6) it would be a valuable exercise for an expert group to convene and review how well the implemented curriculum, as assessed and reported in the SISTA assessments, and the descriptions of acceptable achievement align with the "Intended Curriculum" defined by the ministry documentation.

Provided there is reasonable alignment in these standards with the curriculum expectations then the results should be endorsed as base line statistics for future studies and comparisons.

To evaluate the impact of the types of interventions that may be precipitated by the 2013 SISTA and other programs it is suggested that SISTA should be implemented in 2016 or the latest 2017 as a follow up study to validate these results and measure change in the intervening period.

APPENDICES

APPENDIX 1 – Achieved Sample - Year 4

Province	School name	Enrolment	School Location	Sample (N)	Achieved (N)	Participation
Central Islands	Bokolonga Primary	10	Rural	10		0.0%
Central Islands	Dota CHS	26	Rural	26	13	50.0%
Central Islands	Fly Harbour Primary	29	Rural	29	12	41.4%
Central Islands	Ghole Primary	15	Rural	15	10	66.7%
Central Islands	Hae Primary	35	Rural	20	22	110.0%
Central Islands	Halavo CHS	16	Rural	16	13	81.3%
Central Islands	Haroro Primary	28	Rural	28	13	46.4%
Central Islands	Henry Koga Memorial School	12	Rural	12	7	58.3%
Central Islands	Leitongo Primary	21	Rural	21	11	52.4%
Central Islands	Macmahon CHS	37	Urban	20	11	55.0%
Central Islands	Marvin Memorial Primary	20	Semi-Rural	20	16	80.0%
Central Islands	Nagotano Primary	13	Rural	13	12	92.3%
Central Islands	New Vunuha Primary	13	Rural	13	9	69.2%
Central Islands	Paibeta CHS	30	Rural	30	32	106.7%
Central Islands	Paposi Primary	20	Rural	20	15	75.0%
Central Islands	Pokilo CHS	18	Rural	18	11	61.1%
Central Islands	Salesapa Primary	25	Rural	25	13	52.0%
Central Islands	Silas Primary	30	Rural	30	26	86.7%
Central Islands	Soso Primary	9	Rural	9	6	66.7%
Central Islands	Voloa Primary School	13	Rural	13	12	92.3%
Central Islands	Yandina CHS	69	Semi- Urban	23	46	200.0%
Choiseul	Boeboe Primary	8	Rural	8	7	87.5%
Choiseul	Chivoko Primary	13	Rural	13	13	100.0%
Choiseul	Jengunu Primary	7	Rural	7	5	71.4%
Choiseul	Koloe Primary	12	Rural	12	12	100.0%
Choiseul	Lengatura Primary	14	Rural	14	11	78.6%
Choiseul	Lukuvaru Primary	15	Rural	15	12	80.0%
Choiseul	Nikumaroro Primary	18	Rural	18	13	72.2%
Choiseul	Nukiki Primary	27	Rural	27	18	66.7%
Choiseul	Ogho CHS	17	Rural	17	16	94.1%
Choiseul	Panarui Primary	17	Rural	17	13	76.5%
Choiseul	Papara CHS	14	Rural	14	14	100.0%
Choiseul	Polo Primary	19	Rural	19	17	89.5%
Choiseul	Ruruvai Primary	20	Rural	20	12	60.0%
Choiseul	Sasamunga CHS	39	Rural	20	22	110.0%
Choiseul	Searme Primary	18	Rural	18		0.0%
Choiseul	Soranamola CHS	22	Rural	22	18	81.8%
Choiseul	St Joseph Moli CHS	34	Rural	20	20	100.0%
Choiseul	Susuka Primary	18	Rural	18	18	100.0%
Choiseul	Taro Primary	35	Urban	20	20	100.0%
Choiseul	Voruvoru Primary	12	Rural	12	5	41.7%
Choiseul	Voza CHS	24	Rural	24	24	100.0%

| Choiseul | Zaru Primary | 16 | Rural | 16 | 4 | 25.0% |

Province	School name	Enrolment	School Location	Sample (N)	Achieved (N)	Participation
Guadalcanal	Betivatu CHS	26	Rural	26	24	92.3%
Guadalcanal	Chocho Primary	41	Rural	20	8	40.0%
Guadalcanal	GHOMBUA Primary	32	Rural	20	20	100.0%
Guadalcanal	GILO Primary	24	Rural	24	16	66.7%
Guadalcanal	Kaekae Primary	8	Rural	8	6	75.0%
Guadalcanal	Kolobaubau Primary	28	Rural	28		0.0%
Guadalcanal	Koloula/ Basiana Primary	30	Rural	30	19	63.3%
Guadalcanal	Makina Primary	18	Rural	18	10	55.6%
Guadalcanal	MALAGHETI Primary	10	Rural	10	9	90.0%
Guadalcanal	Marubo Primary	20	Rural	20	8	40.0%
Guadalcanal	Matanunughu Primary	17	Rural	17	16	94.1%
Guadalcanal	Mbalasuna Primary	26	Rural	26	16	61.5%
Guadalcanal	NGUVIA CHS	70	Semi- Urban	25	25	100.0%
Guadalcanal	Nughulathi Primary	12	Rural	12	4	33.3%
Guadalcanal	Obo Obo Primary	15	Rural	15	7	46.7%
Guadalcanal	Palm Drive Primary	20	Urban	20	22	110.0%
Guadalcanal	Ravu Primary	14	Rural	14	4	28.6%
Guadalcanal	Salamarao Primary	19	Rural	19	5	26.3%
Guadalcanal	St Francis Vaturanga Primary	57	Rural	20	20	100.0%
Guadalcanal	TENAKOGA CHS	36	Rural	20	21	105.0%
Guadalcanal	Tumurora Primary	21	Rural	21	15	71.4%
Honiara	Burns Creek CHS	67	Urban	20	20	100.0%
Honiara	Chung Wah Primary	33	Urban	17	17	100.0%
Honiara	Emmaus Christian School	45	Urban	22	23	104.5%
Honiara	Florence Young CHS	71	Urban	20	20	100.0%
Honiara	Global Harvest Christian Academy Primary	36	Urban	20	22	110.0%
Honiara	Ilia Primary	60	Urban	20	22	110.0%
Honiara	Koloale CHS	78	Urban	20	20	100.0%
Honiara	Kukum sda Primary	91	Urban	20	20	100.0%
Honiara	Mbokonavera CHS	129	Urban	20	22	110.0%
Honiara	Mbuavale CHS	74	Urban	20	21	105.0%
Honiara	Mercy Primary School	59	Urban	20	20	100.0%
Honiara	Mount Horeb CHS	40	Urban	20	14	70.0%
Honiara	Norman Palmer CHS	69	Rural	20	22	110.0%
Honiara	Panatina CHS	55	Urban	20	20	100.0%
Honiara	Perch CHS	43	Urban	20	20	100.0%
Honiara	Sharma Christian Academy	44	Urban	20	21	105.0%
Honiara	SITTC Primary	22	Urban	22	26	118.2%
Honiara	Tamlan Primary	109	Urban	20	21	105.0%
Honiara	Vura CHS	64	Urban	20	20	100.0%
Honiara	Zion Christian Academy CHS	33	Rural	20	14	70.0%
Province	**School name**	**Enrolment**	**School Location**	**Sample (N)**	**Achieved (N)**	**Participation**

Isabel	BAOLO Primary	22	Rural	22	19	86.4%
Isabel	Deva Primary	16	Rural	16	16	100.0%
Isabel	FURONA Primary	21	Rural	21	21	100.0%
Isabel	Garanga Primary School	14	Rural	14	12	85.7%
Isabel	Goveo Primary	26	Rural	26	13	50.0%
Isabel	HIROBUKA Primary	23	Rural	23	18	78.3%
Isabel	Jejevo Primary	61	Urban	20		0.0%
Isabel	KALENGA CHS	29	Rural	29	24	82.8%
Isabel	KAMAOSI Primary	20	Rural	20	16	80.0%
Isabel	KESAO Primary	27	Rural	27	23	85.2%
Isabel	KILOKAKA Primary	19	Rural	19	17	89.5%
Isabel	Kmaga Kovala Primary	33	Rural	20	20	100.0%
Isabel	KOLETA Primary	15	Rural	15	16	106.7%
Isabel	LILURA Primary	18	Rural	18	15	83.3%
Isabel	MUANA CHS	58	Rural	20	22	110.0%
Isabel	Samasodu Primary	11	Rural	11	11	100.0%
Isabel	TAMAHI Primary	29	Rural	29	17	58.6%
Makira & Ulawa	Anata Primary	13	Rural	13	13	100.0%
Makira & Ulawa	APAORO PRIMARY	16	Rural	16	9	56.3%
Makira & Ulawa	APURAHE Primary	10	Rural	10	7	70.0%
Makira & Ulawa	Aroaha Primary	19	Rural	19	13	68.4%
Makira & Ulawa	ASIMANIOHA Primary	14	Rural	14	13	92.9%
Makira & Ulawa	FM Campbell CHS	57	Rural	27	29	107.4%
Makira & Ulawa	HAGAURA Primary	21	Rural	21	17	81.0%
Makira & Ulawa	KAONASUGU Primary	18	Rural	18	8	44.4%
Makira & Ulawa	Makia Primary	12	Rural	12	2	16.7%
Makira & Ulawa	MAMI Primary	23	Rural	23	21	91.3%
Makira & Ulawa	MANIQAGOSI Primary	14	Rural	14	10	71.4%
Makira & Ulawa	NA'ANA Primary	19	Rural	19	15	78.9%
Makira & Ulawa	NAHARAHAU Primary	34	Rural	20	22	110.0%
Makira & Ulawa	Ramah CHS	24	Rural	24	26	108.3%
Makira & Ulawa	Suholo Primary	13	Rural	13		0.0%
Makira & Ulawa	Su'umoli CHS	12	Rural	12	11	91.7%
Makira & Ulawa	TAWARAHA CHS	6	Rural	6	8	133.3%
Makira & Ulawa	TETERE Primary	31	Rural	20	21	105.0%
Makira & Ulawa	Ubuna Primary	18	Rural	18	14	77.8%
Makira & Ulawa	WAIHAGA PRIMARY SCHOOL	11	Rural	11	10	90.9%
Makira & Ulawa	Waimapuru Primary school	27	Rural	27	16	59.3%
Makira & Ulawa	WAIMASI CHS	21	Rural	21	15	71.4%
Makira & Ulawa	Warohinou Primary	16	Rural	16	12	75.0%

Province	School name	Enrolment	School Location	Sample (N)	Achieved (N)	Participation
Malaita	Adaua Primary	21	Rural	21	22	104.8%
Malaita	Aikuku Primary	14	Rural	14	7	50.0%
Malaita	Arabala CHS	47	Rural	21	20	95.2%
Malaita	Arnon Atomea CHS	42	Semi-Urban	21	21	100.0%
Malaita	ATORI Primary	18	Rural	18	12	66.7%
Malaita	Auki CHS	84	Urban	21	22	104.8%
Malaita	Buma Primary	67	Rural	22	24	109.1%
Malaita	Dorio Primary	41	Rural	21	21	100.0%
Malaita	Fo'ondo Primary	22	Rural	22	13	59.1%
Malaita	Gwaiau Primary	12	Rural	12	7	58.3%
Malaita	Gwounabusu CHS	24	Rural	24	18	75.0%
Malaita	Hunanawa CHS	17	Rural	17	13	76.5%
Malaita	Justus Ganifiri CHS	27	Rural	27	25	92.6%
Malaita	Lamae Extension	8	Rural	8	8	100.0%
Malaita	Maroupaina CHS	28	Rural	28	24	85.7%
Malaita	Muki Primary	15	Rural	15	15	100.0%
Malaita	Rameai Primary	11	Rural	11	13	118.2%
Malaita	Takaito CHS	32	Rural	20	20	100.0%
Malaita	Taramata Primary	20	Rural	20	13	65.0%
Malaita	Uhu CHS	29	Rural	29	7	24.1%
Malaita	Waneagu CHS	35	Rural	20	20	100.0%
Rennell & Bellona	Angaiho CHS	9	Rural	9	20	222.2%
Rennell & Bellona	Henua CHS	7	Urban	7	1	14.3%
Rennell & Bellona	Mataiho Primary	11	Rural	11	5	45.5%
Rennell & Bellona	Moah Primary	10	Rural	10	9	90.0%
Rennell & Bellona	New Place/ Tupuaki Primary	17	Rural	17	6	35.3%
Rennell & Bellona	Siva Primary	9	Rural	9	5	55.6%
Rennell & Bellona	Vanua CHS	10	Rural	10	8	80.0%
Temotu	BALIPA'A CHS	29	Urban	29	21	72.4%
Temotu	Black Rock Akaboi Extension	13	Rural	13	7	53.8%
Temotu	CARLISLE BAY Primary	22	Rural	22	16	72.7%
Temotu	Fano Primary	12	Rural	12	10	83.3%
Temotu	FENUALOA CHS	30	Rural	30	22	73.3%
Temotu	Maina Memorial CHS	34	Rural	34	26	76.5%
Temotu	Mamineo CHS	23	Rural	23	18	78.3%
Temotu	MARONE Primary	16	Rural	16	13	81.3%
Temotu	Matembo CHS	17	Rural	17		0.0%
Temotu	Meli Primary	15	Rural	15		0.0%
Temotu	Monene CHS	12	Rural	12	11	91.7%
Temotu	NANGU CHS	20	Rural	20	21	105.0%
Temotu	Nipimanu Primary	14	Rural	14	6	42.9%
Temotu	Tetalo CHS	15	Rural	15	16	106.7%
Temotu	Tetoli CHS	21	Rural	21	19	90.5%
Temotu	VENGA Primary	17	Rural	17	13	76.5%
Temotu	VEVENA Primary	9	Rural	9	10	111.1%

Province	School name	Enrolment	School Location	Sample (N)	Achieved (N)	Participation
Western	Babanga Primary	10	Rural	10	10	100.0%
Western	Banga Primary	8	Rural	8	10	125.0%
Western	Bareho Primary	16	Rural	16	14	87.5%
Western	Biche Primary	7	Rural	7	7	100.0%
Western	Chuchulu Primary	7	Rural	7	6	85.7%
Western	Dunde CHS	63	Rural	21	26	123.8%
Western	Gizo CHS	90	Urban	20	20	100.0%
Western	Kalaro Primary	19	Rural	19	17	89.5%
Western	Karokesa Primary	17	Rural	17	13	76.5%
Western	Kokeqolo CHS	32	Rural	20	19	95.0%
Western	Lokuru Primary	13	Rural	13	14	107.7%
Western	Madali Primary	16	Rural	16	7	43.8%
Western	Maravari Primary	36	Rural	20	22	110.0%
Western	Mase Primary	14	Rural	14	13	92.9%
Western	Michi Primary	12	Rural	12		0.0%
Western	Paradise Primary	27	Rural	27	28	103.7%
Western	Patuboliboli Primary	18	Rural	18	13	72.2%
Western	Patukae CHS	22	Rural	22	19	86.4%
Western	Patutiva CHS	15	Rural	15	15	100.0%
Western	Pirumeri Primary	6	Rural	6	5	83.3%
Western	Ramata Primary	10	Rural	10		0.0%
Western	Rarakisi Primary	11	Rural	11	11	100.0%
Western	Sibila CHS	21	Rural	21	21	100.0%
Western	Suava Primary	27	Rural	27	23	85.2%
Western	Vare Tutty Primary	24	Rural	24	25	104.2%
				3545	2862	80.7%

APPENDIX 2– Achieved Sample - Year 6

Province	Schoolname	Enrolment	School Location	Sample (N)	Achieved	Participation
Central Islands	Dota CHS	23	Rural	23	20	87.0%
Central Islands	Fly Harbour Primary	15	Rural	15	14	93.3%
Central Islands	Hae Primary	17	Rural	17	16	94.1%
Central Islands	Halavo CHS	14	Rural	14	10	71.4%
Central Islands	Haroro Primary	9	Rural	9	9	100.0%
Central Islands	Henry Koga Memorial School	11	Rural	11	8	72.7%
Central Islands	Leitongo Primary	11	Rural	11		0.0%
Central Islands	Macmahon CHS	30	Urban	30	22	73.3%
Central Islands	Marvin Memorial Primary	12	Semi-Rural	12	11	91.7%
Central Islands	Nagotano Primary	7	Rural	7	7	100.0%
Central Islands	New Vunuha Primary	9	Rural	9	8	88.9%
Central Islands	Paibeta CHS	22	Rural	22	12	54.5%
Central Islands	Paposi Primary	9	Rural	9	8	88.9%
Central Islands	Pokilo CHS	10	Rural	10	8	80.0%
Central Islands	Ravusodukosi Primary	8	Rural	8	8	100.0%
Central Islands	Salesapa Primary	15	Rural	15	14	93.3%
Central Islands	Silas Primary	14	Rural	14	11	78.6%
Central Islands	Soso Primary	8	Rural	8	8	100.0%
Central Islands	Voloa Primary School	17	Rural	17	15	88.2%
Central Islands	Yandina CHS	44	Semi- Urban	22	40	181.8%
Choiseul	Chivoko Primary	7	Rural	7	7	100.0%
Choiseul	Jengunu Primary	10	Rural	10	9	90.0%
Choiseul	Koloe Primary	13	Rural	13	13	100.0%
Choiseul	Lukuvaru Primary	17	Rural	17	15	88.2%
Choiseul	Nikumaroro Primary	7	Rural	7	6	85.7%
Choiseul	Nukiki Primary	15	Rural	15	15	100.0%
Choiseul	Ogho CHS	13	Rural	13	13	100.0%
Choiseul	Panarui Primary	11	Rural	11	11	100.0%
Choiseul	Papara CHS	13	Rural	13	10	76.9%
Choiseul	Pirakamae CHS	17	Rural	17	15	88.2%
Choiseul	Polo Primary	19	Rural	19	16	84.2%
Choiseul	Ruruvai Primary	11	Rural	11	13	118.2%
Choiseul	Salakana Primary	13	Rural	13	13	100.0%
Choiseul	Sasamunga CHS	25	Rural	25	25	100.0%
Choiseul	Searme Primary	9	Rural	9	4	44.4%
Choiseul	Soranamola CHS	9	Rural	9	8	88.9%
Choiseul	St Joseph Moli CHS	30	Rural	30	32	106.7%
Choiseul	Susuka Primary	11	Rural	11	11	100.0%
Choiseul	Taro Primary	29	Urban	29		0.0%
Choiseul	Voza CHS	14	Rural	14	14	100.0%
Choiseul	Wagina CHS	23	Rural	23	24	104.3%

Province	Schoolname	Enrolment	School Location	Sample (N)	Achieved	Participation
Guadalcanal	Betivatu CHS	34	Rural	20	22	110.0%
Guadalcanal	Chocho Primary	19	Rural	19	17	89.5%
Guadalcanal	GHOMBUA Primary	18	Rural	18	17	94.4%
Guadalcanal	GILO Primary	20	Rural	20	15	75.0%
Guadalcanal	Kaekae Primary	12	Rural	12	10	83.3%
Guadalcanal	Kolobaubau Primary	21	Rural	21	21	100.0%
Guadalcanal	Koloula/ Basiana Primary	25	Rural	25	24	96.0%
Guadalcanal	LUNGA CHS	81	Urban	20	22	110.0%
Guadalcanal	Makina Primary	8	Rural	8	5	62.5%
Guadalcanal	MALAGHETI Primary	15	Rural	15		0.0%
Guadalcanal	Marubo Primary	14	Rural	14	10	71.4%
Guadalcanal	Matanunughu Primary	8	Rural	8	8	100.0%
Guadalcanal	Mbalasuna Primary	14	Rural	14	13	92.9%
Guadalcanal	NGUVIA CHS	46	Semi- Urban	23	23	100.0%
Guadalcanal	Obo Obo Primary	8	Rural	8	8	100.0%
Guadalcanal	Palm Drive Primary	14	Urban	14	13	92.9%
Guadalcanal	Ravu Primary	12	Rural	12	12	100.0%
Guadalcanal	St Francis Vaturanga Primary	31	Rural	31	25	80.6%
Guadalcanal	Tanakuku Primary	34	Rural	20	22	110.0%
Guadalcanal	TENAKOGA CHS	32	Rural	32	31	96.9%
Guadalcanal	Tumurora Primary	9	Rural	9	7	77.8%
Guadalcanal	Vatualae Primary	20	Rural	20	15	75.0%
Honiara	Bishop Epalle CHS	87	Urban	22	24	109.1%
Honiara	Burns Creek CHS	64	Urban	22	22	100.0%
Honiara	Coronation CHS	83	Urban	23	24	104.3%
Honiara	Florence Young CHS	76	Urban	25		0.0%
Honiara	Global Harvest Christian Academy Primary	15	Urban	15	14	93.3%
Honiara	Ilia Primary	31	Urban	31	26	83.9%
Honiara	Koloale CHS	70	Urban	23	24	104.3%
Honiara	Kukum sda Primary	79	Urban	23	23	100.0%
Honiara	Mbokonavera CHS	79	Urban	20	20	100.0%
Honiara	Mbuavale CHS	67	Urban	23	25	108.7%
Honiara	Mount Horeb CHS	20	Urban	20		0.0%
Honiara	Naha CHS	74	Urban	20	20	100.0%
Honiara	Norman Palmer CHS	62	Rural	21	22	104.8%
Honiara	Panatina CHS	38	Urban	20	23	115.0%
Honiara	Sharma Christian Academy	25	Urban	25	21	84.0%
Honiara	SITTC Primary	26	Urban	26	22	84.6%
Honiara	Tamlan Primary	112	Urban	24	23	95.8%
Honiara	Vura CHS	56	Urban	28		0.0%
Honiara	White River CHS	39	Urban	20	21	105.0%
Honiara	Zion Christian Academy CHS	10	Rural	10	10	100.0%

Province	Schoolname	Enrolment	School Location	Sample (N)	Achieved	Participation
Isabel	Deva Primary	14	Rural	14	14	100.0%
Isabel	FURONA Primary	16	Rural	16	16	100.0%
Isabel	Goveo Primary	12	Rural	12	12	100.0%
Isabel	GUGUHA CHS	25	Rural	25	25	100.0%
Isabel	HIROBUKA Primary	14	Rural	14	14	100.0%
Isabel	Jejevo Primary	57	Urban	28	28	100.0%
Isabel	KALENGA CHS	20	Rural	20	18	90.0%
Isabel	KAMAOSI Primary	13	Rural	13	13	100.0%
Isabel	KESAO Primary	27	Rural	27	26	96.3%
Isabel	KILOKAKA Primary	14	Rural	14	13	92.9%
Isabel	Kmaga Kovala Primary	16	Rural	16	13	81.3%
Isabel	KOLETA Primary	8	Rural	8	7	87.5%
Isabel	Lepi Primary	25	Rural	25	17	68.0%
Isabel	LILURA Primary	17	Rural	17	18	105.9%
Isabel	MAGOTU Primary	20	Rural	20	20	100.0%
Isabel	MUANA CHS	46	Rural	23	24	104.3%
Isabel	Samasodu Primary	17	Rural	17	15	88.2%
Isabel	TAMAHI Primary	18	Rural	18	18	100.0%
Isabel	Tigubako Primary	19	Rural	19	17	89.5%
Isabel	Visena CHS	20	Rural	20	20	100.0%
Makira & Ulawa	FM Campbell CHS	50	Rural	25	27	108.0%
Makira & Ulawa	HAGAURA Primary	16	Rural	16	12	75.0%
Makira & Ulawa	Hauta Primary	10	Rural	7	6	85.7%
Makira & Ulawa	KAONASUGU Primary	18	Rural	18	12	66.7%
Makira & Ulawa	Makia Primary	10	Rural	10	1	10.0%
Makira & Ulawa	Makorukoru Primary	16	Rural	15	14	93.3%
Makira & Ulawa	MAMI Primary	18	Rural	18	17	94.4%
Makira & Ulawa	MANIQAGOSI Primary	7	Rural	7	5	71.4%
Makira & Ulawa	NA'ANA Primary	7	Rural	7	7	100.0%
Makira & Ulawa	NAHARAHAU Primary	24	Rural	24	26	108.3%
Makira & Ulawa	PAREGO Primary	11	Rural	8	10	125.0%
Makira & Ulawa	Ramah CHS	26	Rural	26	25	96.2%
Makira & Ulawa	Suholo Primary	18	Rural	18		0.0%
Makira & Ulawa	Su'umoli CHS	20	Rural	20	20	100.0%
Makira & Ulawa	TAWARAHA CHS	11	Rural	11	10	90.9%
Makira & Ulawa	TETERE Primary	22	Rural	22	19	86.4%
Makira & Ulawa	Toroiwango Primary	17	Rural	18	11	61.1%
Makira & Ulawa	Ubuna Primary	13	Rural	13	7	53.8%
Makira & Ulawa	Waimapuru Primary school	24	Rural	24	19	79.2%
Makira & Ulawa	WAIMASI CHS	14	Rural	14	15	107.1%

Province	Schoolname	Enrolment	School Location	Sample (N)	Achieved	Participation
Malaita	Alota'a CHS	23	semi-rural	23	20	87.0%
Malaita	Arnon Atomea CHS	30	Semi-Urban	30	30	100.0%
Malaita	ATORI Primary	16	Rural	16	13	81.3%
Malaita	Auki CHS	59	Urban	30	31	103.3%
Malaita	BAUNAKUNU Primary	20	Rural	20	6	30.0%
Malaita	Buma Primary	45	Rural	22	20	90.9%
Malaita	Dorio Primary	23	Rural	23	20	87.0%
Malaita	Fo'ondo Primary	10	Rural	10	10	100.0%
Malaita	Gwaiau Primary	9	Rural	9	5	55.6%
Malaita	Gwounabusu CHS	24	Rural	24	23	95.8%
Malaita	Justus Ganifiri CHS	20	Rural	20	17	85.0%
Malaita	Lamae Extension	9	Rural	9	8	88.9%
Malaita	Maroupaina CHS	32	Rural	17	17	100.0%
Malaita	Nunubilau Primary	13	Rural	13	11	84.6%
Malaita	One'one Primary	10	Rural	10	7	70.0%
Malaita	Rameai Primary	11	Rural	11	16	145.5%
Malaita	Rokera Primary	12	Rural	12	11	91.7%
Malaita	Takaito CHS	16	Rural	16	16	100.0%
Malaita	Taramata Primary	12	Rural	12	7	58.3%
Malaita	Tawaro CHS	20	Rural	20	17	85.0%
Malaita	Uhu CHS	14	Rural	14	11	78.6%
Malaita	Waneagu CHS	37	Rural	20	36	180.0%
Rennell & Bellona	Henua CHS	8	Urban	8	7	87.5%
Rennell & Bellona	Mataiho Primary	17	Rural	17	9	52.9%
Rennell & Bellona	Mugibai Primary	6	Rural	6	7	116.7%
Rennell & Bellona	New Place/ Tupuaki Primary	17	Rural	17		0.0%
Rennell & Bellona	Siva Primary	9	Rural	9	5	55.6%
Rennell & Bellona	Vanua CHS	10	Rural	10	9	90.0%
Temotu	BALIPA'A CHS	38	Urban	20	22	110.0%
Temotu	Black Rock Akaboi Extension	10	Rural	10	15	150.0%
Temotu	CARLISLE BAY Primary	8	Rural	8		0.0%
Temotu	FENUALOA CHS	20	Rural	20	15	75.0%
Temotu	Maina Memorial CHS	20	Rural	20	20	100.0%
Temotu	Mamineo CHS	22	Rural	22	17	77.3%
Temotu	MARONE Primary	8	Rural	8	4	50.0%
Temotu	Matembo CHS	7	Rural	7	13	185.7%
Temotu	Meli Primary	9	Rural	9	6	66.7%
Temotu	Monene CHS	13	Rural	13	10	76.9%
Temotu	NANGU CHS	21	Rural	21	21	100.0%
Temotu	Nipimanu Primary	8	Rural	8	9	112.5%
Temotu	Tetalo CHS	11	Rural	11	11	100.0%
Temotu	VEVENA Primary	9	Rural	10	19	190.0%

Province	Schoolname	Enrolment	School Location	Sample (N)	Achieved	Participation
Western	Banga Primary	8	Rural	8	7	87.5%
Western	Bareho Primary	16	Rural	16	16	100.0%
Western	Chuchulu Primary	9	Rural	9	6	66.7%
Western	Dunde CHS	34	Rural	34	26	76.5%
Western	Falamae Primary	18	Rural	18	18	100.0%
Western	Gaomai Primary	9	Rural	9	9	100.0%
Western	Ghatere Primary	9	Rural	9	9	100.0%
Western	Gizo CHS	82	Urban	21	24	114.3%
Western	Hovoro Primary	6	Rural	6	6	100.0%
Western	Kalaro Primary	10	Rural	10	8	80.0%
Western	Karokesa Primary	6	Rural	6	6	100.0%
Western	Kokeqolo CHS	46	Rural	23	21	91.3%
Western	Lengana CHS	19	Rural	19	18	94.7%
Western	Lokuru Primary	19	Rural	19	14	73.7%
Western	Madali Primary	24	Rural	24	18	75.0%
Western	Maravari Primary	19	Rural	19	16	84.2%
Western	Mase Primary	10	Rural	10	9	90.0%
Western	Michi Primary	6	Rural	6		0.0%
Western	Noro CHS	86	Rural	22	80	363.6%
Western	Paradise Primary	35	Rural	35	35	100.0%
Western	Patuboliboli Primary	18	Rural	18	17	94.4%
Western	Patukae CHS	15	Rural	15	15	100.0%
Western	Patutiva CHS	18	Rural	18	14	77.8%
Western	Ramata Primary	9	Rural	9		0.0%
Western	Rarakisi Primary	7	Rural	7	6	85.7%
Western	Sibila CHS	17	Rural	17	17	100.0%
Western	Suava Primary	10	Rural	10	10	100.0%
Western	Vare Tutty Primary	25	Rural	25	24	96.0%
				3187	2858	89.7%

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APPENDIX 3: Year 4 SISTA 1 Literacy

item	Type	Strand	Descriptor	Omit	Links	% correct
Q01	MC	Reading	Order events in text	0.1%		44%
Q02	MC	Reading	Retrieve literal information from text	0.3%		73%
Q03	MC	Reading	Identify relationships from text	0.2%		71%
Q04	MC	Reading	Retrieve literal information from text	0.2%		77%
Q05	MC	Reading	Retrieve literal information from text	0.2%	S6Q01	74%
Q06	MC	Reading	Retrieve literal information from text	0.3%	S6Q02	73%
Q07	MC	Reading	Interpret meaning of words in text	0.5%	S6Q03	50%
Q08	MC	Reading	Identify relationships from text	0.4%	S6Q04	76%
Q09	MC	Reading	Interpret information in text	0.4%	S6Q05	41%
Q10	CR	Reading	Interpret information and construct answer	3.3%		13%
Q11	CR	Reading	Retrieve literal information and construct answer	3.4%		53%
Q12	CR	Reading	Retrieve literal information and construct answer	7.4%		33%
Q13a	CR	Reading	Retrieve literal information from text	3.8%		55%
Q13b	CR	Reading	Retrieve additional information from text	5.4%		36%
Q14i	MC	Reading	Identify synonym	3.8%		31%
Q14ii	MC	Reading	Identify common synonym	3.6%		59%
Q14iii	MC	Reading	Identify common synonym	4.1%		48%
Q14iv	MC	Reading	Identify synonym	4.1%		38%
Q15	MC	Language	Identify correct personal pronoun	0.3%		41%
Q16	MC	Language	Identify pronoun	0.3%		62%
Q17	MC	Language	Identify correct comparative form	0.6%	S6Q23	44%
Q18	MC	Language	Identify correct tense of verb	0.5%	S6Q24	51%
Q19	MC	Language	Identify correct article	0.5%		57%
Q20	MC	Language	Identify personal pronoun	0.3%		88%
Q21	MC	Language	Identify correct tense of verb	0.5%	S6Q25	52%
Q22	MC	Language	Identify correct comparative form - irregular spelling	0.4%	S6Q26	14%
Q23	MC	Language	Select correct sentence structure	0.7%	S6Q27	22%
Q24	MC	Language	Select correct sentence structure	0.7%	S6Q28	32%
Q25	MC	Language	Identify correct spelling of common word	0.4%		82%
Q26	MC	Language	Identify correct spelling of complex word	0.5%		61%
Q27	CR	Language	Construct sentence using given words	4.9%		39%
Q28i	CR	Language	Correct selection of word for cloze	1.0%	S6Q29i	24%
Q28ii	CR	Language	Correct selection of word for cloze	1.0%	S6Q29ii	39%
Q28iii	CR	Language	Correct selection of word for cloze	1.2%	S6Q29iii	43%
Q28iv	CR	Language	Correct selection of word for cloze	1.5%	S6Q29iv	31%
Q28v	CR	Language	Correct selection of word for cloze	1.4%	S6Q29v	39%
Q28vi	CR	Language	Correct selection of final word in a cloze	1.5%	S6Q29vi	16%
Q29i	CR	Language	Correctly complete punctuation in sentence	5.9%		66%
Q29ii	CR	Language	Correctly complete punctuation in sentence	6.4%		67%
Q29iii	CR	Language	Correctly complete punctuation in sentence	6.8%		70%

APPENDIX 4: Year 6 SISTA2 Literacy

item	Type	Strand	Descriptor	Omit	Links	Facility
Q01	MC	Reading	Retrieve literal information from text	0.0%	S4Q05	90%
Q02	MC	Reading	Retrieve literal information from text	0.1%	S4Q06	88%
Q03	MC	Reading	Interpret meaning of words in text	0.2%	S4Q07	69%
Q04	MC	Reading	Identify relationships from text	0.0%	S4Q08	88%
Q05	MC	Reading	Interpret information in text	0.2%	S4Q09	58%
Q06	MC	Reading	Interpret information in text	0.3%		64%
Q07	MC	Reading	Draw inference from information in text	0.4%		23%
Q08	MC	Reading	Interpret information in text	0.3%		37%
Q09	CR	Reading	Retrieve information in text and construct response	2.0%		29%
Q10	CR	Reading	Draw inference from information in text and construct response	2.3%		23%
Q11	CR	Reading	Interpret information in text and construct response	2.3%		9%
Q12	CR	Reading	Interpret information in text and construct response	4.6%		17%
Q13	CR	Reading	Infer meaning from text and construct response	7.2%		13%
Q14i	CR	Reading	Construct meaning of word in text/context	6.1%		19%
Q14ii	CR	Reading	Construct meaning of word in text/context	7.1%		9%
Q14iii	CR	Reading	Construct meaning of word in text/context	8.9%		11%
Q14iv	CR	Reading	Construct meaning of word in text/context	8.0%		29%
Q14v	CR	Reading	Construct meaning of word in text/context	7.0%		29%
Q15	CR	Language	Select correct personal pronoun	0.1%		64%
Q16	CR	Language	Select correct pronoun	0.6%		54%
Q17	CR	Language	Select correct adverb	0.8%		55%
Q18	CR	Language	Select correct adverb	0.5%		73%
Q19	CR	Language	Select correct comparative	0.3%		21%
Q20	CR	Language	Select correct adjective	0.5%		39%
Q21	CR	Language	Select correct verb in context	0.6%		59%
Q22	CR	Language	Select correct verb in context	0.3%		72%
Q23	MC	Language	Identify correct comparative form	0.1%	S4Q17	67%
Q24	MC	Language	Identify correct tense of verb	0.0%	S4Q18	67%
Q25	MC	Language	Identify correct tense of verb	0.1%	S4Q21	64%
Q26	MC	Language	Identify correct comparative form	0.1%	S4Q22	26%
Q27	MC	Language	Select correct sentence structure	0.1%	S4Q23	31%
Q28	MC	Language	Select correct sentence structure	0.3%	S4Q24	29%
Q29i	CR	Language	Correct selection of word for cloze	0.2%	S4Q28i	38%
Q29ii	CR	Language	Correct selection of word for cloze	0.4%	S4Q28ii	61%
Q29iii	CR	Language	Correct selection of word for cloze	0.2%	S4Q28iii	67%
Q29iv	CR	Language	Correct selection of word for cloze	0.3%	S4Q28iv	53%
Q29v	CR	Language	Correct selection of word for cloze	0.3%	S4Q28v	50%
Q29vi	CR	Language	Correct selection of final word in a cloze	0.5%	S4Q28vi	31%

APPENDIX 5: Year 4 SISTA 1 Numeracy

item	Type	Strand	Descriptor	Omit	Facility	Links
Q01	CR	Number	Express number in words	1.7%	70.8	
Q02	CR	Number	Converts number in words to figures	1.7%	66.4	
Q03a	MC	Number	Identify place value	1.4%	72.9	
Q03b	CR	Number	Identify and write place vale	3.5%	54.8	
Q04	CR	Number	Order numbers small to large	1.1%	69.6	
Q05a	CR	Number	Round to nearest 10	3.5%	42.8	
Q05b	CR	Number	Round to nearest 1000	3.8%	26.3	
Q06a	CR	Addition	Addition 3 x 3 without trading	0.1%	91.9	
Q06b	CR	Addition	Addition 4 x 3 without trading	0.1%	76.5	
Q06c	CR	Addition	Addition 4 x 3 with trading	0.1%	62.7	
Q06d	CR	Addition	Addition 4 x 4 with trading	0.1%	68.5	S6Q1a
Q07	CR	Addition	Addition - word problem with trading	1.6%	62.1	
Q08	CR	Addition	Addition - word problem with trading	2.5%	56.7	
Q09a	CR	Subtraction	Subtraction 3 x 3 includes zero	0.1%	88.6	
Q09b	CR	Subtraction	Subtraction 3 x 3 without trading	0.3%	35.8	
Q09c	CR	Subtraction	Subtraction 4 x 3 without trading	0.2%	81.8	
Q09d	CR	Subtraction	Subtraction 4 x 4 with trading	0.2%	35.5	S6Q2a
Q10	CR	Subtraction	Subtraction - word problem with zero	2.1%	28.7	
Q11	CR	Subtraction	Subtraction - word problem with trading	2.6%	43.2	
Q12a	MC	Multiplication	Multiplication 2 digit by 1 digit	1.0%	41.9	
Q12b	CR	Multiplication	Multiplication 2 digit by 1 digit	0.9%	68.8	
Q12c	CR	Multiplication	Multiplication 2 digit by 1 digit	1.0%	37.5	
Q12d	CR	Multiplication	Multiplication 3 digit by 1 digit	1.0%	25.0	S6Q3a
Q13	CR	Division	Division- number fact	0.7%	82.5	
Q14	CR	Division	Division- number fact	0.7%	74.6	
Q15a	CR	Division	Division- number fact	1.8%	69.2	
Q15b	CR	Division	Division- number fact	2.4%	62.6	
Q15c	CR	Division	Division- number fact	2.5%	56.3	S6Q4a
Q16	CR	Fractions	Identify fraction of whole	1.3%	45.9	
Q17	CR	Fractions	Order Fractions low to high	1.5%	3.5	
Q18	CR	Fractions	Calculate fraction of value	7.0%	30.6	S6Q17d
Q19	CR	Fractions	Put fraction on number line	3.0%	16.0	
Q20a	CR	Shapes	Identify regular 2D shape	1.0%	81.7	
Q20b	CR	Shapes	Identify common 3D object	2.1%	24.5	
Q20c	CR	Shapes	Identify regular 2D shape	2.2%	65.9	
Q20d	CR	Shapes	Identify common 3D object	3.8%	33.7	
Q21a	CR	Shapes	Identify number of sides in regular 2D shape	1.7%	81.1	
Q21b	CR	Shapes	Identify number of corners in regular 2D shape	1.8%	79.1	
Q21c	CR	Shapes	Identify lines of symmetry in regular 2D shape	2.4%	32.2	
Q21d	CR	Shapes	Identify parallel lines in regular 2D shape	2.9%	30.1	
Q22a	CR	Shapes	Identify number of faces in 3D object	2.5%	33.8	
Q22b	CR	Shapes	Identify number of edges in 3D object	2.7%	14.7	
Q22c	CR	Shapes	Identify number of corners in 3D object	2.7%	47.9	
Q23	CR	Angles	Identify relative angle size	1.3%	38.7	

Q24	CR	Angles	Draw angle of relative size	9.8%	64.2	
Q25	MC	Location	Identify coordinates of point in grid	3.5%	44.9	
Q26a	CR	Location	Identify Point from coordinates	2.3%	69.5	
Q26b	CR	Location	Write coordinates of identified point	2.3%	48.8	
Q27a	CR	Graphs	Complete tally table	2.6%	80.2	S6Q12a
Q27b	CR	Graphs	Draw vertical bar chart	2.3%	67.9	S6Q12b
Q28	CR	Graphs	Draw horizontal bar chart	2.0%	62.5	
Q29a	CR	Measurement	Calculate perimeter sides given	2.2%	55.9	
Q29b	CR	Measurement	Calculate perimeter sides deduced	2.2%	28.5	
Q30	CR	Measurement	Calculate area	2.6%	11.5	
Q31	CR	Measurement	Word problem - calculate perimeter	11.9%	14.3	
Q32a	CR	Measurement	Add weights in grams	3.5%	22.6	
Q32b	CR	Measurement	Subtract weights in grams	4.4%	5.2	
Q33a	MC	Time	Recognise time on analogue clock	2.3%	27.4	
Q33b	CR	Time	Recognise time on analogue clock	3.5%	27.7	
Q34a	CR	Time	Find time in a table	4.1%	55.9	
Q34b	CR	Time	Find time in a table	7.5%	44.4	
Q35a	MC	Money	Addition of money without carry	1.8%	68.0	S6Q08a
Q35b	CR	Money	Addition of money with trading	2.0%	41.8	S6Q08b
Q36a	CR	Money	Subtraction of money with trading	2.1%	22.1	S6Q09a
Q36b	CR	Money	Subtraction of money with trading	2.3%	19.7	S6Q09b
Q37	CR	Money	Calculate change	3.6%	24.4	
Q38	CR	Money	Find difference in money	5.3%	20.0	
Q39	CR	Money	Find sum of shopping list - money	6.0%	31.4	

APPENDIX 6 :Year 6 SISTA 2 Numeracy

item	Type	Strand	Descriptor	Omit	Facility	Links
Q01a	CR	Number	Addition 4 x 4 with trading	0.0%	94%	S4Q06d
Q01b	CR	Number	Addition 6 x 5 with trading	0.1%	81%	S4Q09d
Q02a	CR	Number	Subtraction 4 x 4 with trading	0.1%	78%	S4Q12d
Q02b	CR	Number	Subtraction 6 x 5 with trading	0.4%	73%	S4Q15c
Q03a	CR	Number	Multiplication 3 digit by 1 digit	0.1%	76%	
Q03b	CR	Number	Multiplication 4 digit by 2 digit	0.7%	51%	
Q04a	CR	Number	Division- number fact	1.6%	81%	
Q04b	CR	Number	Division - 3 divide by 2	3.7%	60%	
Q04c	CR	Number	Division - 4 divide by 2	5.0%	29%	
Q05a	CR	Number	Word problem mixed operations	0.6%	80%	
Q05b	CR	Number	Order of operations	1.0%	45%	
Q06	CR	Number	Word problem division	3.8%	59%	
Q07	CR	Number	Word problem mixed operations	4.3%	55%	
Q08a	CR	Money	Addition of money without carry	0.0%	93%	S4Q35a
Q08b	CR	Money	Addition of money with trading	0.2%	84%	S4Q35b
Q08c	CR	Money	Subtraction of money with trading	0.3%	74%	S4Q36a
Q08d	CR	Money	Subtraction of money with trading	0.3%	71%	S4Q36b
Q09a	CR	Money	Multiplication involving money	0.4%	51%	
Q09b	CR	Money	Multiplication involving money	0.5%	75%	
Q10a	CR	Money	Division involving money	4.2%	36%	
Q10b	CR	Money	Division involving money	9.2%	26%	
Q11a	CR	Graphs	Identify value in graph	0.9%	92%	
Q11b	CR	Graphs	Calculate largest number in graph	1.1%	80%	
Q11c	CR	Graphs	Calculate difference from information in graph	1.6%	41%	
Q12a	CR	Graphs	Complete tally table	2.2%	87%	S4Q27a
Q12b	CR	Graphs	Draw vertical bar chart	1.5%	81%	S4Q27b
Q13a	CR	Graphs	Identify greatest value from information in graph	0.7%	90%	
Q13b	CR	Graphs	Identify value from information in graph	1.1%	79%	
Q13c	CR	Graphs	Calculate average from information in graph	2.2%	34%	
Q14	CR	Fractions	Write fraction in sequence	0.6%	62%	
Q15	CR	Fractions	Calculate equivalent fraction	1.3%	51%	
Q16a	CR	Fractions	Reduce improper fraction	4.2%	56%	
Q17a	CR	Fractions	Subtract fraction with common denominator	0.6%	77%	
Q17b	CR	Fractions	Add fraction with common denominator	0.6%	73%	
Q17c	CR	Fractions	Add fraction with non-common denominator	1.9%	25%	
Q17d	CR	Fractions	Calculate fraction of value	6.4%	38%	S4Q18
Q18a	CR	Fractions	Convert proper fraction to percentage	2.8%	48%	
Q18b	CR	Fractions	Convert decimal to percentage	1.9%	46%	
Q19a	CR	Fractions	Covert percentage to decimal	2.0%	54%	
Q19b	CR	Fractions	Convert proper fraction to decimal	2.6%	41%	
Q20	CR	Fractions	Convert decimal to proper fraction	3.4%	50%	
Q21	CR	Fractions	Identify place value in mixed number	3.2%	8%	
Q22	CR	Fractions	Round to nearest tenth	2.4%	38%	
Q23a	CR	Fractions	Add fractions with trading	0.1%	80%	

Q23b	CR	Fractions	Add fractions with trading	0.2%	69%	
Q24a	CR	Fractions	Subtract fractions with trading	0.4%	84%	
Q24b	CR	Fractions	Subtract fractions without trading	0.5%	55%	
Q25a	CR	Fractions	Multiply fraction by whole number	0.6%	68%	
Q25b	CR	Fractions	Multiply fraction by whole number	0.8%	60%	
Q26a	CR	Fractions	Divide fraction by whole number	2.6%	24%	
Q26b	CR	Fractions	Divide fraction by whole number	3.4%	30%	
Q27	CR	Measurement	Calculate volume of regular 3D object	1.4%	46%	
Q28	CR	Time Zones	Identify time using zone chart	4.3%	41%	
Q29a	CR	Shapes and Space	Angle properties of common 2D shape	5.5%	34%	
Q29b	CR	Shapes and Space	Side properties of regular 2D shape	9.7%	38%	
Q30a	CR	Shapes and Space	Calculate angle size in common 2D shape	1.8%	48%	
Q30b	CR	Shapes and Space	Calculate angle size in common 2D shape	2.7%	52%	
Q31a	CR	Word Problems	Word problem - calculate percentage of value	7.0%	28%	
Q31b	CR	Word Problems	Word problem - calculate percentage	6.7%	8%	
Q32	CR	Word Problems	Word problem - calculate percentage	6.5%	27%	
Q33	CR	Word Problems	Word problem - calculate percentage of value	6.9%	10%	
Q34	CR	Word Problems	Word problem - ratio	4.3%	45%	
Q35	CR	Word Problems	Word problem - ratio	5.9%	7%	
Q36a	CR	Word Problems	Convert units of measurement	4.8%	44%	
Q36b	CR	Word Problems	Convert units of measurement	4.9%	43%	
Q36c	CR	Word Problems	Convert units of measurement	5.6%	28%	
Q37	CR	Word Problems	Rates involving distance and time	6.8%	36%	
Q38	CR	Word Problems	Word problem - calculation of cost	6.3%	37%	
Q39	CR	Word Problems	Word problem - division	7.0%	45%	
Q40	CR	Word Problems	Word problem - difference	5.8%	52%	

APPENDIX Table 7 English S4 Item facility by Province

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q01	MC	Reading	Order events in text		0.32	44%	34.1%	40.3%	40.0%	66.3%	37.5%	45.7%	43.9%	35.3%	36.8%	43.5%
Q02	MC	Reading	Retrieve literal information from text		0.28	73%	66.8%	71.5%	63.0%	88.2%	72.3%	76.4%	70.6%	58.8%	68.8%	71.5%
Q03	MC	Reading	Identify relationships from text		0.38	71%	62.6%	68.8%	69.6%	85.0%	70.3%	71.9%	70.0%	58.8%	65.4%	69.7%
Q04	MC	Reading	Retrieve literal information from text		0.39	78%	68.4%	77.3%	75.2%	92.6%	75.0%	78.9%	81.2%	64.7%	73.6%	75.1%
Q05	MC	Reading	Retrieve literal information from text		0.44	73%	63.5%	70.2%	69.1%	92.4%	76.7%	72.2%	77.9%	67.6%	62.8%	69.4%
Q06	MC	Reading	Retrieve literal information from text		0.41	73%	60.2%	67.1%	73.5%	92.6%	70.3%	72.5%	73.8%	52.9%	71.0%	72.1%
Q07	MC	Reading	Interpret meaning of words in text		0.31	49%	43.7%	43.4%	46.5%	70.5%	52.4%	45.0%	54.8%	23.5%	41.6%	42.9%
Q08	MC	Reading	Identify relationships from text		0.33	76%	69.8%	72.5%	81.7%	86.8%	77.0%	70.6%	78.2%	67.6%	71.0%	76.6%
Q09	MC	Reading	Interpret information in text		0.37	41%	39.6%	26.8%	47.8%	61.3%	33.8%	47.3%	43.6%	20.6%	24.2%	35.7%
Q10	CR	Reading	Interpret information and construct answer		0.29	12%	14.6%	14.2%	12.2%	26.6%	4.1%	7.0%	7.9%	5.9%	15.2%	6.9%
Q11	CR	Reading	Retrieve literal information and construct answer		0.56	53%	43.7%	43.7%	61.7%	82.1%	44.3%	41.2%	56.4%	50.0%	45.5%	56.2%
Q12	CR	Reading	Retrieve literal information and construct answer		0.55	33%	22.0%	28.8%	38.3%	66.3%	17.9%	24.9%	35.1%	23.5%	26.0%	35.7%
Q13a	CR	Reading	Retrieve literal information from text		0.56	56%	47.0%	56.9%	62.2%	78.7%	44.9%	47.0%	56.9%	47.1%	45.9%	58.3%
Q13b	CR	Reading	Retrieve additional information from text		0.49	36%	25.8%	39.0%	47.8%	55.3%	25.0%	30.0%	35.7%	38.2%	23.8%	36.9%
Q14i	MC	Reading	Identify synonym		0.42	30%	31.6%	23.4%	31.3%	49.5%	30.1%	22.7%	30.0%	29.4%	22.5%	23.4%
Q14ii	MC	Reading	Identify common synonym		0.58	59%	55.8%	50.5%	61.3%	80.0%	55.7%	54.6%	57.2%	47.1%	59.3%	53.8%
Q14iii	MC	Reading	Identify common synonym		0.52	48%	41.5%	38.6%	56.1%	77.4%	39.5%	42.2%	47.1%	44.1%	48.1%	39.9%
Q14iv	MC	Reading	Identify synonym		0.51	38%	36.3%	27.5%	39.6%	61.3%	38.9%	28.8%	34.6%	44.1%	26.8%	38.1%
Q15	MC	Language	Identify correct personal pronoun		0.09	41%	41.5%	52.2%	33.0%	55.3%	24.0%	37.1%	34.1%	47.1%	48.9%	37.8%
Q16	MC	Language	Identify pronoun		0.44	62%	60.7%	56.9%	63.9%	85.3%	57.8%	58.5%	58.9%	47.1%	56.7%	55.3%
Q17	MC	Language	Identify correct comparative form		0.33	44%	36.8%	36.6%	46.5%	66.3%	46.6%	40.6%	40.3%	32.4%	42.4%	36.6%

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q18	MC	Language	Identify correct tense of verb		0.35	51%	47.3%	43.4%	53.9%	71.8%	51.4%	48.6%	49.9%	38.2%	45.0%	45.9%
Q19	MC	Language	Identify correct article		0.3	57%	49.2%	51.2%	50.0%	72.9%	54.4%	54.0%	67.6%	61.8%	52.4%	52.3%
Q20	MC	Language	Identify personal pronoun		0.31	88%	83.0%	86.8%	88.7%	96.1%	90.9%	88.8%	85.6%	82.4%	87.4%	85.3%
Q21	MC	Language	Identify correct tense of verb		0.47	53%	40.1%	47.5%	48.7%	79.2%	48.6%	48.2%	56.4%	35.3%	52.4%	47.7%
Q22	MC	Language	Identify correct comparative form		0.08	14%	13.2%	15.6%	15.2%	19.2%	15.2%	11.8%	13.6%	11.8%	13.4%	10.8%
Q23	MC	Language	Select correct sentence structure		0.23	22%	24.7%	9.8%	15.7%	42.9%	28.7%	16.6%	16.3%	20.6%	18.6%	16.5%
Q24	MC	Language	Select correct sentence structure		0.07	32%	33.0%	31.5%	32.2%	33.9%	34.1%	25.9%	33.5%	17.6%	30.3%	31.5%
Q25	MC	Language	Identify correct spelling of common word		0.41	82%	80.2%	75.9%	82.6%	96.6%	80.1%	81.8%	81.2%	58.8%	77.9%	76.3%
Q26	MC	Language	Identify correct spelling of complex word		0.45	61%	54.4%	54.6%	52.6%	89.5%	66.2%	62.3%	52.3%	35.3%	54.1%	57.1%
Q27	CR	Language	Construct sentence using given words		0.39	39%	40.9%	34.2%	37.4%	70.3%	17.6%	30.4%	35.7%	44.1%	57.6%	22.8%
Q28i	CR	Language	Correct selection of word for cloze		0.37	24%	22.0%	15.3%	20.0%	43.2%	29.7%	15.3%	27.2%	32.4%	15.2%	19.2%
Q28ii	CR	Language	Correct selection of word for cloze		0.54	39%	34.1%	28.1%	41.7%	73.4%	30.4%	34.5%	34.9%	38.2%	31.6%	30.3%
Q28iii	CR	Language	Correct selection of word for cloze		0.54	42%	27.2%	39.3%	40.4%	76.1%	39.9%	37.1%	41.7%	35.3%	32.9%	40.5%
Q28iv	CR	Language	Correct selection of word for cloze		0.41	31%	23.9%	25.1%	25.7%	60.5%	24.7%	30.0%	30.8%	35.3%	23.4%	28.8%
Q28v	CR	Language	Correct selection of word for cloze		0.32	39%	27.5%	34.9%	34.3%	51.3%	42.9%	41.9%	40.9%	38.2%	41.6%	34.3%
Q28vi	CR	Language	Correct selection of word for cloze		0.29	16%	13.2%	7.5%	13.0%	35.5%	15.2%	13.7%	13.1%	32.4%	12.6%	9.3%
Q29i	CR	Language	Correctly complete punctuation in sentence		0.48	67%	56.9%	64.4%	64.3%	87.4%	62.8%	66.5%	67.3%	67.6%	68.4%	63.1%
Q29ii	CR	Language	Correctly complete punctuation in sentence		0.5	68%	63.2%	68.1%	57.4%	90.5%	61.1%	68.4%	70.6%	61.8%	66.2%	61.6%
Q29iii	CR	Language	Correctly complete punctuation in sentence		0.49	70%	60.7%	68.8%	63.9%	90.3%	68.2%	70.6%	72.5%	58.8%	69.7%	64.9%

APPENDIX Table 8 English S6 Item facility by Province

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q01	MC	Reading	Retreive literal information from text		0.32	90%	82.2%	82.6%	86.7%	97.8%	93.9%	90.9%	91.6%	91.9%	90.6%	86.7%
Q02	MC	Reading	Retreive literal information from text		0.37	88%	80.3%	88.5%	85.3%	95.5%	90.6%	85.6%	86.4%	75.7%	87.8%	87.4%
Q03	MC	Reading	Interpret meaning of words in text		0.44	69%	61.0%	69.4%	68.3%	84.7%	62.3%	61.4%	73.5%	62.2%	65.2%	66.3%
Q04	MC	Reading	Identify relationsips from text		0.28	88%	86.9%	90.1%	88.1%	95.7%	86.6%	84.1%	85.0%	91.9%	90.1%	84.9%
Q05	MC	Reading	Interpret information in text		0.52	58%	54.4%	51.3%	56.1%	75.4%	50.2%	60.6%	58.8%	67.6%	60.2%	55.1%
Q06	MC	Reading	Interpet information in text		0.41	64%	57.9%	58.2%	56.9%	78.9%	63.2%	62.1%	65.5%	56.8%	66.9%	59.8%
Q07	MC	Reading	Draw inference from information in text		0.16	23%	28.6%	15.1%	27.5%	27.8%	21.3%	23.5%	16.2%	21.6%	28.7%	20.9%
Q08	MC	Reading	Interpret information in text		0.36	37%	42.5%	31.3%	33.4%	48.6%	31.9%	37.5%	38.4%	51.4%	28.2%	33.5%
Q09	CR	Reading	Retrieve information in text and construct response		0.42	29%	24.3%	24.3%	28.0%	43.8%	15.8%	37.1%	25.6%	43.2%	35.9%	23.6%
Q10	CR	Reading	Draw inference from information in text and construct response		0.38	23%	17.4%	15.1%	17.6%	40.4%	14.6%	26.9%	27.0%	8.1%	34.3%	18.4%
Q11	CR	Reading	Interpret information in text and construct response		0.13	9%	26.3%	5.9%	3.4%	7.9%	6.1%	25.4%	8.1%	16.2%	2.8%	3.6%
Q12	CR	Reading	Interpret information in text and construct response		0.47	17%	12.7%	6.3%	10.8%	36.8%	10.6%	26.5%	17.5%	13.5%	22.1%	13.3%
Q13	CR	Reading	Infer meaning from text and construct response		0.40	13%	15.1%	9.9%	7.1%	23.0%	9.7%	21.2%	15.0%	21.6%	13.8%	5.2%
Q14i	CR	Reading	Construct meaning of word in text/context		0.29	19%	19.7%	12.8%	18.7%	18.9%	34.3%	17.0%	17.8%	45.9%	16.0%	11.7%
Q14ii	CR	Reading	Construct meaning of word in text/context		0.25	9%	7.7%	6.9%	6.8%	15.6%	11.2%	9.8%	10.3%	8.1%	7.2%	4.0%
Q14iii	CR	Reading	Construct meaning of word in text/context		0.31	11%	19.3%	4.6%	7.6%	16.7%	19.5%	9.1%	9.5%	29.7%	7.2%	5.6%
Q14iv	CR	Reading	Construct meaning of word in text/context		0.56	29%	32.0%	28.9%	20.4%	51.2%	22.2%	26.1%	26.7%	32.4%	31.5%	22.5%
Q14v	CR	Reading	Construct meaning of word in text/context		0.52	29%	33.2%	27.3%	19.5%	46.7%	29.5%	28.4%	27.0%	37.8%	25.4%	18.4%
Q15	CR	Language	Select correct personal pronoun		0.51	64%	51.7%	66.1%	62.9%	79.7%	60.5%	66.3%	56.8%	62.2%	52.5%	64.7%

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q16	CR	Language	Select correct pronoun		0.47	54%	45.6%	50.7%	54.1%	73.4%	51.1%	55.3%	53.5%	32.4%	57.5%	44.9%
Q17	CR	Language	Select correct adverb		0.47	55%	43.6%	59.2%	59.2%	73.9%	48.9%	50.8%	50.7%	54.1%	39.8%	57.5%
Q18	CR	Language	Select correct adverb		0.46	73%	67.2%	59.5%	70.5%	90.4%	77.2%	70.8%	75.2%	70.3%	72.9%	70.6%
Q19	CR	Language	Select correct comparative		0.26	21%	18.9%	22.4%	18.1%	25.6%	25.2%	15.9%	22.0%	2.7%	20.4%	18.0%
Q20	CR	Language	Select corerect adjective		0.26	39%	36.3%	29.9%	41.6%	50.0%	37.4%	42.0%	36.5%	27.0%	36.5%	39.1%
Q21	CR	Language	Select correct verb in context		0.52	59%	40.5%	54.9%	66.9%	76.1%	56.2%	51.5%	57.1%	70.3%	54.1%	56.9%
Q22	CR	Language	Select correct verb in context		0.38	72%	66.4%	60.5%	72.5%	88.5%	77.2%	68.2%	69.4%	75.7%	77.3%	64.5%
Q23	MC	Language	Identify correct comparative form		0.43	67%	59.8%	63.2%	62.9%	78.2%	72.3%	75.4%	60.4%	54.1%	69.6%	61.8%
Q24	MC	Language	Identify correct tense of verb		0.44	67%	55.6%	56.9%	69.4%	82.3%	71.7%	63.6%	67.7%	64.9%	71.8%	61.1%
Q25	MC	Language	Identify correct tense of verb		0.39	64%	47.1%	66.1%	66.3%	72.7%	59.9%	63.6%	71.6%	59.5%	65.2%	61.1%
Q26	MC	Language	Identify correct comparative form		0.29	26%	25.9%	27.0%	22.7%	37.6%	24.0%	18.6%	26.5%	10.8%	24.9%	24.5%
Q27	MC	Language	Select correct sentence structure		0.41	31%	22.4%	28.9%	39.4%	47.8%	22.2%	26.1%	34.0%	8.1%	21.5%	29.9%
Q28	MC	Language	Select correct sentence structure		0.19	29%	25.9%	34.9%	28.9%	36.1%	18.2%	28.8%	31.2%	21.6%	24.9%	26.5%
Q29i	CR	Language	Correct selection of word for cloze		0.51	38%	27.8%	30.6%	43.6%	60.8%	28.9%	38.3%	37.0%	43.2%	35.9%	32.1%
Q29ii	CR	Language	Correct selection of word for cloze		0.64	61%	54.8%	47.7%	60.9%	85.9%	55.3%	57.6%	63.5%	70.3%	55.2%	56.0%
Q29iii	CR	Language	Correct selection of word for cloze		0.50	67%	57.9%	55.6%	69.4%	87.1%	63.5%	64.0%	66.9%	75.7%	64.6%	65.8%
Q29iv	CR	Language	Correct selection of word for cloze		0.54	53%	44.8%	44.7%	51.6%	77.0%	49.2%	49.2%	48.7%	67.6%	50.8%	49.4%
Q29v	CR	Language	Correct selection of word for cloze		0.29	50%	44.8%	48.4%	45.0%	60.0%	45.3%	48.5%	52.6%	54.1%	61.9%	44.9%
Q29vi	CR	Language	Correct selection of word for cloze		0.48	31%	23.2%	22.4%	27.2%	53.3%	24.0%	26.5%	37.6%	21.6%	30.9%	24.7%

APPENDIX Table 9 Mathematics S4 Item facility by Province

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalca nal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q01	CR	Number	Express number in words		0.47	70.8%	64.8%	67.7%	62.9%	86.1%	67.5%	65.1%	76.4%	61.8%	69.0%	70.4%
Q02	CR	Number	Converts number in words to figures		0.45	66.4%	52.6%	63.9%	60.5%	78.5%	76.1%	64.7%	70.1%	61.8%	63.3%	62.8%
Q03a	MC	Number	Identify place value		0.42	72.9%	65.8%	77.2%	68.4%	81.8%	75.7%	73.4%	69.6%	44.1%	69.4%	73.7%
Q03b	CR	Number	Identify and write palce vale		0.54	54.8%	46.8%	60.2%	44.9%	66.5%	58.9%	56.1%	56.4%	35.3%	47.6%	50.6%
Q04	CR	Number	Order numbers small to large		0.44	69.6%	59.0%	74.5%	67.2%	76.2%	71.1%	67.3%	72.9%	47.1%	74.7%	65.1%
Q05a	CR	Number	Round to nearest 10		0.55	42.8%	39.7%	36.7%	37.9%	52.8%	49.6%	39.4%	46.8%	35.3%	41.5%	36.9%
Q05b	CR	Number	Round to nearest 1000		0.41	26.3%	21.9%	24.1%	19.5%	29.5%	38.2%	21.5%	32.6%	17.6%	24.5%	23.2%
Q06a	CR	Addition	Addition 3 x 3 without trading		0.23	91.9%	89.7%	91.5%	92.2%	93.9%	93.6%	92.9%	89.0%	97.1%	91.7%	91.6%
Q06b	CR	Addition	Addition 4 x 3 without trading		0.25	76.5%	73.9%	76.2%	79.3%	79.5%	82.1%	77.2%	76.2%	82.4%	73.8%	69.6%
Q06c	CR	Addition	Addition 4 x 3 with trading		0.46	62.7%	51.6%	65.3%	59.8%	67.0%	76.8%	60.6%	61.4%	70.6%	64.2%	57.3%
Q06d	CR	Addition	Addition 4 x 4 with trading		0.48	68.5%	58.1%	73.5%	65.2%	75.2%	80.7%	67.3%	67.9%	58.8%	67.7%	61.5%
Q07	CR	Addition	Addition - word problem with trading		0.48	62.1%	52.6%	64.6%	57.0%	73.8%	71.4%	59.9%	60.8%	50.0%	59.4%	57.0%
Q08	CR	Addition	Addition - word problem with trading		0.49	56.7%	42.3%	56.1%	50.8%	73.6%	54.6%	54.2%	60.3%	47.1%	60.3%	53.1%
Q09a	CR	Subtraction	Subtraction 3 x 3 includes zero		0.29	88.6%	83.5%	90.5%	84.4%	93.4%	91.1%	87.8%	89.3%	91.2%	89.1%	86.6%
Q09b	CR	Subtraction	Subtraction 3 x 3 without trading		0.43	35.8%	26.8%	40.8%	27.3%	39.6%	43.2%	34.6%	37.0%	32.4%	37.6%	34.1%
Q09c	CR	Subtraction	Subtraction 4 x 3 without trading		0.31	81.8%	77.7%	82.3%	78.9%	84.0%	87.9%	83.3%	82.5%	88.2%	79.9%	78.2%
Q09d	CR	Subtraction	Subtraction 4 x 4 with trading		0.40	35.5%	31.3%	40.8%	24.2%	38.7%	41.4%	29.2%	39.2%	41.2%	36.2%	35.5%
Q10	CR	Subtraction	Subtraction - word problem with zero		0.44	28.7%	27.7%	31.3%	19.1%	36.3%	35.4%	24.0%	28.5%	32.4%	24.5%	26.3%
Q11	CR	Subtraction	Subtraction - word problem with trading		0.47	43.2%	30.6%	39.1%	37.9%	62.3%	43.6%	42.6%	43.8%	23.5%	41.5%	41.3%
Q12a	MC	Multiplicati on	Multiplication 2 digit by 1 digit		0.38	41.9%	28.4%	41.8%	33.6%	52.6%	57.1%	37.5%	44.1%	44.1%	37.6%	39.4%
Q12b	CR	Multiplicati on	Multiplication 2 digit by 1 digit		0.43	68.8%	65.2%	59.2%	71.5%	76.2%	73.2%	66.3%	69.9%	61.8%	68.1%	68.2%
Q12c	CR	Multiplicati on	Multiplication 2 digit by 1 digit		0.49	37.5%	28.4%	25.2%	39.5%	42.2%	51.1%	38.8%	38.9%	50.0%	36.7%	34.4%
Q12d	CR	Multiplicati on	Multiplication 3 digit by 1 digit		0.42	25.0%	14.2%	18.4%	27.0%	26.7%	35.7%	26.0%	27.1%	32.4%	25.3%	23.7%
Q13	CR	Division	Division- number fact		0.38	82.5%	76.1%	75.9%	84.0%	87.0%	82.1%	84.3%	89.0%	82.4%	80.8%	80.4%
Q14	CR	Division	Division- number fact		0.40	74.6%	65.8%	69.4%	78.1%	82.5%	70.7%	74.7%	78.4%	73.5%	74.7%	73.5%
Q15a	CR	Division	Division- number fact		0.39	69.2%	69.4%	55.1%	70.7%	67.5%	81.8%	69.2%	78.4%	61.8%	71.6%	61.7%

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q15b	CR	Division	Division- number fact		0.39	62.6%	63.5%	53.7%	65.2%	62.3%	72.1%	55.8%	68.5%	73.5%	62.9%	58.7%
Q15c	CR	Division	Division- number fact		0.40	56.3%	60.6%	42.9%	57.8%	54.5%	72.1%	51.0%	67.1%	55.9%	54.1%	47.2%
Q16	CR	Fractions	Identify fraction of whole		0.39	45.9%	46.5%	29.6%	49.2%	45.3%	61.4%	37.2%	51.0%	44.1%	43.2%	49.7%
Q17	CR	Fractions	Oder Fractions low to high		0.12	3.5%	1.3%	1.4%	2.0%	4.0%	5.7%	3.2%	2.2%	2.9%	9.2%	3.9%
Q18	CR	Fractions	Calulate fraction of value		0.42	30.6%	26.1%	17.7%	31.6%	31.4%	46.4%	24.0%	35.6%	41.2%	27.1%	32.7%
Q19	CR	Fractions	Put fraction on number line		0.38	16.0%	20.6%	7.5%	17.6%	18.9%	21.8%	12.8%	16.4%	14.7%	16.6%	12.0%
Q20a	CR	Shapes	Identify regular 2D shape		0.31	81.7%	88.1%	78.6%	82.4%	91.5%	73.9%	77.6%	80.8%	76.5%	76.9%	80.4%
Q20b	CR	Shapes	Identify common 3D object		0.36	24.5%	27.4%	22.8%	23.4%	31.6%	17.1%	22.8%	23.0%	5.9%	22.7%	27.7%
Q20c	CR	Shapes	Identify regular 2D shape		0.42	65.9%	65.8%	67.7%	65.2%	81.6%	54.3%	58.7%	69.0%	61.8%	59.8%	62.8%
Q20d	CR	Shapes	Identify common 3D object		0.41	33.7%	41.9%	27.6%	33.2%	40.8%	34.3%	27.2%	33.7%	35.3%	27.5%	32.7%
Q21a	CR	Shapes	Identify number of sides in regualr 2D shape		0.33	81.1%	80.0%	81.3%	80.9%	85.6%	82.9%	75.3%	81.4%	64.7%	83.8%	79.6%
Q21b	CR	Shapes	Identify number of corners in regualr 2D shape		0.41	79.1%	76.8%	74.5%	78.5%	87.5%	78.9%	77.2%	79.2%	61.8%	81.7%	76.8%
Q21c	CR	Shapes	Identify lines of symmetry in regualr 2D shape		0.30	32.2%	37.7%	26.5%	30.5%	37.3%	40.7%	32.7%	27.1%	32.4%	32.8%	24.9%
Q21d	CR	Shapes	Identify parallel lines in regualr 2D shape		0.28	30.1%	34.8%	18.7%	26.6%	34.9%	36.8%	32.1%	32.9%	26.5%	29.3%	23.2%
Q22a	CR	Shapes	Identify number of faces in 3D object		0.27	33.8%	35.8%	29.9%	34.0%	25.9%	44.6%	37.5%	36.4%	20.6%	42.4%	26.3%
Q22b	CR	Shapes	Identify number of edges in 3D object		0.31	14.7%	9.7%	12.9%	13.3%	14.6%	20.7%	10.9%	19.2%	14.7%	18.8%	13.1%
Q22c	CR	Shapes	Identify number of corners in 3D object		0.36	47.9%	43.5%	46.3%	49.2%	52.1%	52.9%	35.6%	58.1%	64.7%	45.4%	43.3%
Q23	CR	Angles	Identify relative ansle size		0.23	38.7%	37.7%	35.7%	45.3%	39.2%	44.3%	48.7%	33.4%	29.4%	30.1%	35.8%
Q24	CR	Angles	Draw angle of relative size		0.38	64.2%	55.5%	62.9%	63.3%	76.4%	58.9%	66.0%	65.5%	41.2%	60.3%	65.1%
Q25	MC	Location	Identify coordinates of point in grid		0.27	44.9%	39.7%	37.1%	41.0%	46.2%	53.2%	40.4%	45.2%	35.3%	53.7%	49.2%
Q26a	CR	Location	Identify Piont from coordinates		0.42	69.5%	62.3%	67.3%	74.6%	76.9%	71.1%	68.3%	64.9%	67.6%	72.5%	67.6%
Q26b	CR	Location	Write coordiantes of identified point		0.43	48.8%	42.3%	44.2%	47.7%	57.5%	56.1%	43.3%	47.4%	38.2%	46.3%	52.0%
Q27a	CR	Graphs	Complete tally table		0.27	80.2%	75.8%	79.3%	82.4%	84.0%	76.8%	81.7%	84.4%	73.5%	84.3%	73.7%
Q27b	CR	Graphs	Draw vertical bar chart		0.44	67.9%	65.8%	66.0%	64.8%	77.4%	60.0%	64.4%	74.2%	41.2%	76.9%	62.0%
Q28	CR	Graphs	Draw horizontal bar chart		0.39	62.5%	58.4%	64.6%	59.0%	74.1%	61.1%	51.9%	68.8%	52.9%	63.8%	56.7%
Q29a	CR	Measurement	Calculate perimeter sides given		0.32	55.9%	46.1%	53.1%	56.3%	60.6%	53.6%	58.7%	59.7%	41.2%	55.5%	57.8%
Q29b	CR	Measurement	Calculate perimeter sides deduced		0.34	28.5%	29.7%	17.7%	32.4%	27.6%	31.1%	26.0%	30.7%	8.8%	27.9%	34.9%

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q30	CR	Measurement	Calculate area		0.32	11.5%	12.6%	9.2%	7.8%	13.4%	25.0%	9.0%	11.2%	5.9%	8.7%	7.0%
Q31	CR	Measurement	Word problem - calculate perimeter		0.37	14.3%	12.3%	8.8%	16.8%	20.0%	17.9%	17.0%	14.8%	5.9%	9.6%	9.8%
Q32a	CR	Measurement	Add weights in grams		0.40	22.6%	22.6%	21.1%	24.6%	27.1%	22.1%	20.8%	20.5%	14.7%	25.8%	20.1%
Q32b	CR	Measurement	Subtract weights in grams		0.30	5.2%	4.2%	3.1%	5.5%	7.3%	5.4%	4.5%	6.0%	0.0%	6.1%	4.7%
Q33a	MC	Time	Recognise time on analogue clock		0.33	27.4%	26.1%	25.5%	34.0%	30.7%	40.7%	18.3%	26.3%	14.7%	25.3%	22.6%
Q33b	CR	Time	Recognise time on analogue clock		0.43	27.7%	22.6%	19.4%	32.0%	37.3%	35.7%	26.3%	28.5%	26.5%	25.3%	20.4%
Q34a	CR	Time	Find time in a table		0.42	55.9%	45.2%	52.7%	57.4%	76.9%	48.2%	52.2%	54.8%	50.0%	56.3%	52.2%
Q34b	CR	Time	Find time in a table		0.45	44.4%	34.8%	42.9%	48.0%	62.0%	40.4%	42.0%	45.8%	26.5%	41.5%	38.3%
Q35a	MC	Money	Addition of money without carry		0.46	68.0%	54.5%	71.1%	64.5%	78.8%	67.1%	65.4%	72.6%	67.6%	71.6%	63.1%
Q35b	CR	Money	Addition of money with trading		0.49	41.8%	29.4%	42.5%	41.8%	48.3%	46.1%	40.7%	43.8%	38.2%	42.8%	39.4%
Q36a	CR	Money	Subtraction of money with trading		0.46	22.1%	16.1%	18.7%	17.6%	29.0%	21.1%	17.6%	25.8%	32.4%	27.1%	21.8%
Q36b	CR	Money	Subtraction of money with trading		0.42	19.7%	14.5%	16.7%	14.1%	26.9%	20.4%	16.0%	23.3%	20.6%	23.6%	18.7%
Q37	CR	Money	Calculate change		0.25	24.4%	24.2%	19.7%	27.3%	30.0%	31.8%	18.3%	26.8%	17.6%	19.2%	20.9%
Q38	CR	Money	Find difference in money		0.40	20.0%	15.8%	18.7%	23.4%	23.1%	20.4%	12.5%	24.7%	8.8%	22.3%	19.6%
Q39	CR	Money	Find sum of shopping list - money		0.50	31.4%	26.5%	30.3%	35.5%	42.5%	32.1%	21.2%	38.1%	23.5%	27.9%	25.4%

APPENDIX Table 10 Mathematics S6 Item facility by Province

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q01a	CR	Number	Addition 4 x 4 with trading		0.23	94%	91.6%	90.5%	93.2%	97.3%	96.0%	93.9%	94.6%	97.3%	96.2%	91.8%
Q01b	CR	Number	Addition 6 x 5 with trading		0.30	81%	79.5%	75.2%	83.8%	83.8%	87.9%	80.6%	81.5%	75.7%	92.3%	74.4%
Q02a	CR	Number	Subtraction 4 x 4 with trading		0.41	78%	70.3%	75.9%	72.6%	86.8%	81.9%	74.1%	76.4%	78.4%	83.0%	75.7%
Q02b	CR	Number	Subtraction 6 x 5 with trading		0.36	73%	64.7%	72.6%	71.5%	81.9%	74.1%	72.2%	74.7%	78.4%	76.4%	70.2%
Q03a	CR	Number	Multiplication 3 digit by 1 digit		0.36	76%	63.1%	69.7%	70.6%	85.7%	79.3%	79.1%	81.5%	81.1%	65.9%	75.9%
Q03b	CR	Number	Multiplication 4 digit by 2 digit		0.44	51%	40.6%	51.1%	50.9%	61.8%	52.9%	60.1%	54.5%	29.7%	51.1%	38.5%
Q04a	CR	Number	Division- number fact		0.45	81%	76.3%	74.5%	80.0%	90.9%	85.6%	82.9%	83.8%	78.4%	79.1%	76.8%
Q04b	CR	Number	Division - 3 digit divide by 2 digit		0.56	60%	53.4%	56.6%	58.8%	75.0%	59.2%	63.5%	61.9%	62.2%	57.7%	49.2%
Q04c	CR	Number	Division - 4 digit divide by 2 digit		0.50	29%	20.9%	36.1%	28.2%	37.1%	30.7%	28.5%	32.1%	10.8%	33.0%	20.0%
Q05a	CR	Number	Word problem mixed operations		0.27	80%	73.5%	77.0%	77.9%	88.5%	78.2%	79.8%	80.4%	81.1%	79.7%	79.1%
Q05b	CR	Number	Order of operations		0.46	45%	33.3%	49.3%	44.1%	56.6%	51.4%	37.3%	42.9%	48.6%	43.4%	42.1%
Q06	CR	Number	Word problem division		0.51	59%	49.8%	52.2%	62.9%	78.3%	56.3%	55.1%	55.4%	43.2%	64.3%	53.5%
Q07	CR	Number	Word problem mixed operations		0.54	55%	42.6%	51.1%	52.4%	73.6%	53.2%	53.2%	56.5%	56.8%	58.2%	49.2%
Q08a	CR	Money	Addition of money without carry		0.28	93%	85.9%	94.5%	93.5%	96.7%	92.8%	93.9%	93.5%	94.6%	96.2%	87.8%
Q08b	CR	Money	Addition of money with trading		0.34	84%	76.3%	83.2%	83.5%	91.2%	84.5%	87.8%	88.6%	70.3%	90.1%	77.7%
Q08c	CR	Money	Subtraction of money with trading		0.39	74%	67.5%	70.1%	69.1%	81.3%	78.2%	77.9%	75.0%	67.6%	78.0%	67.9%
Q08d	CR	Money	Subtraction of money with trading		0.38	71%	63.1%	65.7%	70.3%	78.8%	75.3%	73.4%	71.6%	73.0%	74.2%	67.7%
Q09a	CR	Money	Multiplication involving money		0.44	51%	41.0%	51.1%	55.0%	61.5%	58.0%	58.2%	48.0%	24.3%	55.5%	36.3%
Q09b	CR	Money	Multiplication involving money		0.44	75%	69.5%	67.2%	77.4%	84.3%	73.9%	83.7%	75.6%	78.4%	83.0%	65.9%
Q10a	CR	Money	Division involving money		0.47	36%	29.7%	35.4%	35.9%	47.5%	43.4%	32.3%	37.8%	32.4%	32.4%	27.4%
Q10b	CR	Money	Division involving money		0.46	26%	18.5%	28.5%	25.6%	37.4%	29.3%	24.7%	27.8%	10.8%	29.1%	14.5%
Q11a	CR	Graphs	Identify value in graph		0.31	92%	86.3%	93.8%	90.6%	97.3%	92.8%	92.0%	94.6%	97.3%	92.3%	90.2%
Q11b	CR	Graphs	Calculate largest number in graph		0.44	80%	75.5%	74.8%	77.4%	93.1%	77.6%	79.5%	82.1%	89.2%	88.5%	72.2%
Q11c	CR	Graphs	Calculate difference from information in graph		0.49	41%	36.1%	45.6%	42.4%	53.0%	42.2%	39.2%	41.8%	27.0%	54.9%	24.1%
Q12a	CR	Graphs	Complete tally table		0.23	87%	90.8%	87.6%	83.8%	85.7%	91.1%	91.3%	84.9%	81.1%	95.1%	82.0%
Q12b	CR	Graphs	Draw vertical bar chart		0.32	81%	83.9%	79.6%	82.1%	84.9%	82.2%	79.1%	78.1%	86.5%	88.5%	75.5%

item	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q13a	CR	Graphs	Identify greatest value from information in graph		0.36	90%	86.3%	82.8%	88.8%	96.2%	90.5%	90.1%	90.9%	91.9%	95.6%	89.1%
Q13b	CR	Graphs	Identify value from information in graph		0.33	79%	69.9%	76.3%	80.3%	88.5%	77.3%	80.6%	75.3%	91.9%	85.2%	76.6%
Q13c	CR	Graphs	Calculate average from information in graph		0.48	34%	28.5%	31.8%	34.7%	43.4%	39.1%	30.8%	30.4%	18.9%	43.4%	26.1%
Q14	CR	Fractions	Write fraction in sequence		0.31	62%	51.8%	66.4%	62.9%	67.3%	57.5%	57.0%	59.1%	78.4%	72.5%	60.1%
Q15	CR	Fractions	Calculate equivalent fraction		0.35	51%	37.3%	59.1%	51.2%	62.6%	59.2%	47.9%	48.3%	45.9%	56.0%	42.5%
Q16a	CR	Fractions	Reduce improper fraction		0.55	56%	43.4%	61.3%	55.3%	67.6%	63.2%	51.3%	54.5%	51.4%	62.1%	48.6%
Q17a	CR	Fractions	Subtract fraction with common denominator		0.36	77%	69.5%	77.4%	80.3%	84.1%	79.3%	77.2%	77.8%	75.7%	78.0%	70.6%
Q17b	CR	Fractions	Add fraction with common denominator		0.33	73%	65.9%	75.9%	72.1%	77.7%	78.4%	71.5%	73.0%	64.9%	78.0%	68.8%
Q17c	CR	Fractions	Add fraction with uncommon denominator		0.47	25%	18.5%	21.9%	28.5%	32.7%	35.3%	25.1%	24.1%	8.1%	28.6%	16.3%
Q17d	CR	Fractions	Calculate fraction of value		0.50	38%	31.7%	33.9%	39.1%	56.9%	44.0%	27.0%	40.1%	56.8%	40.7%	28.3%
Q18a	CR	Fractions	Convert proper fraction to percentage		0.54	48%	35.3%	53.6%	47.1%	55.5%	57.5%	54.0%	51.4%	35.1%	44.0%	36.7%
Q18b	CR	Fractions	Convert decimal to percentage		0.47	46%	30.9%	54.0%	44.1%	49.7%	53.7%	54.8%	46.9%	43.2%	43.4%	35.2%
Q19a	CR	Fractions	Covert percentage to decimal		0.39	54%	42.6%	57.3%	49.7%	60.4%	63.5%	58.9%	56.0%	40.5%	61.0%	44.3%
Q19b	CR	Fractions	Convert proper fraction to decimal		0.55	41%	29.7%	45.6%	36.2%	46.7%	52.9%	41.4%	42.3%	29.7%	43.4%	31.0%
Q20	CR	Fractions	Convert decimal to proper fraction		0.47	50%	43.0%	49.6%	45.3%	62.4%	58.9%	48.3%	56.3%	51.4%	37.9%	41.9%
Q21	CR	Fractions	Identify place value in mixed number		0.16	8%	5.2%	22.3%	2.6%	9.1%	6.3%	3.8%	5.1%	5.4%	5.5%	8.9%
Q22	CR	Fractions	Round to nearest tenth		0.42	38%	26.1%	34.7%	42.6%	41.2%	47.4%	42.2%	45.7%	18.9%	36.3%	25.4%
Q23a	CR	Fractions	Add fractions with trading		0.32	80%	68.7%	73.7%	80.6%	84.6%	82.2%	84.0%	81.8%	75.7%	83.0%	77.3%
Q23b	CR	Fractions	Add fractions with trading		0.41	69%	60.6%	67.5%	68.8%	78.6%	76.7%	73.0%	70.2%	45.9%	73.1%	58.8%
Q24a	CR	Fractions	Subtract fractions with trading		0.41	84%	79.1%	78.5%	84.4%	87.4%	90.5%	87.5%	84.9%	73.0%	85.7%	77.3%
Q24b	CR	Fractions	Subtract fractions without trading		0.44	55%	44.2%	51.8%	54.4%	67.6%	63.2%	49.8%	58.0%	54.1%	53.8%	50.8%
Q25a	CR	Fractions	Multiply fraction by whole number		0.41	68%	58.6%	65.3%	65.3%	76.6%	70.7%	66.9%	73.9%	70.3%	68.7%	63.0%
Q25b	CR	Fractions	Multiply fraction by whole number		0.49	60%	45.8%	60.9%	55.6%	70.6%	63.8%	65.8%	63.9%	51.4%	64.8%	49.9%
Q26a	CR	Fractions	Divide fraction by whole number		0.38	24%	15.3%	24.8%	19.4%	31.3%	26.7%	25.5%	31.0%	27.0%	24.2%	14.9%
Q26b	CR	Fractions	Divide fraction by whole number		0.42	30%	22.5%	36.5%	34.7%	35.2%	38.2%	23.2%	27.3%	51.4%	28.0%	20.5%
Q27	CR	Measurement	Calculate volume of regular 3D object		0.56	46%	38.2%	42.3%	43.8%	63.5%	51.7%	51.0%	39.5%	27.0%	50.0%	35.2%

	Type	Strand	Descriptor	Omit	PtBis ItmRest	Facility ALL	Central Islands Province	Choiseul Province	Guadalcanal Province	Honiara Province	Isabel Province	Makira & Ulawa Province	Malaita Province	Rennell & Bellona	Temotu Province	Western Province
Q28	CR	Time Zones	Identify time using zone chart		0.40	41%	36.9%	41.2%	40.0%	50.0%	42.2%	33.5%	35.8%	54.1%	34.6%	44.3%
Q29a	CR	Shapes and Space	Angle properties of common 2D shape		0.36	34%	30.5%	38.0%	40.3%	38.7%	39.7%	23.2%	36.9%	45.9%	20.3%	29.8%
Q29b	CR	Shapes and Space	Side properties of regular 2D shape		0.40	38%	33.3%	39.8%	40.6%	48.4%	36.2%	35.4%	40.3%	29.7%	39.0%	32.7%
Q30a	CR	Shapes and Space	Calculate angle size in common 2D shape		0.50	48%	39.4%	55.8%	52.1%	59.1%	55.5%	45.6%	50.9%	16.2%	48.4%	30.5%
Q30b	CR	Shapes and Space	Calculate angle size in common 2D shape		0.37	52%	47.0%	52.6%	47.1%	65.1%	51.1%	50.2%	60.5%	56.8%	45.6%	45.9%
Q31a	CR	Word Problems	Word problem - calculate percentage of value		0.44	28%	21.7%	34.7%	28.8%	37.1%	29.0%	20.5%	29.3%	32.4%	25.3%	20.7%
Q31b	CR	Word Problems	Word problem - calculate percentage		0.26	8%	5.6%	14.2%	6.8%	10.4%	5.7%	6.1%	5.1%	0.0%	4.4%	8.7%
Q32	CR	Word Problems	Word problem - calculate percentage		0.44	27%	21.7%	30.3%	22.4%	36.5%	29.6%	23.6%	32.4%	27.0%	30.8%	19.6%
Q33	CR	Word Problems	Word problem - calculate percentage of value		0.34	10%	3.6%	19.0%	9.4%	17.0%	8.6%	9.5%	13.4%	18.9%	10.4%	3.3%
Q34	CR	Word Problems	Word problem - ratio		0.50	45%	35.3%	44.5%	45.6%	65.1%	45.1%	50.2%	35.5%	59.5%	48.9%	37.6%
Q35	CR	Word Problems	Word problem - ratio		0.26	7%	5.6%	15.0%	3.8%	9.3%	8.3%	6.8%	2.0%	5.4%	7.7%	5.3%
Q36a	CR	Word Problems	Convert units of measurement		0.41	44%	41.8%	51.8%	45.0%	44.8%	57.8%	43.7%	44.3%	27.0%	37.9%	32.5%
Q36b	CR	Word Problems	Convert units of measurement		0.52	43%	37.3%	52.6%	42.6%	51.6%	52.9%	41.1%	44.0%	24.3%	37.9%	27.6%
Q36c	CR	Word Problems	Convert units of measurement		0.49	28%	21.7%	31.4%	26.5%	34.6%	41.7%	25.9%	32.1%	5.4%	29.1%	12.0%
Q37	CR	Word Problems	Rates involving distance and time		0.52	36%	28.1%	35.8%	36.5%	50.5%	42.8%	32.7%	36.4%	27.0%	32.4%	28.1%
Q38	CR	Word Problems	Word problem - calculation of cost		0.55	37%	30.5%	36.5%	32.4%	53.6%	40.8%	31.2%	38.9%	18.9%	39.6%	30.3%
Q39	CR	Word Problems	Word problem - division		0.52	45%	34.1%	47.1%	48.2%	59.6%	50.0%	40.3%	42.9%	64.9%	45.1%	35.9%
Q40	CR	Word Problems	Word problem - difference		0.42	52%	49.8%	56.9%	48.5%	60.2%	60.6%	44.5%	49.4%	75.7%	57.7%	42.8%