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Technical report

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National Assessment Program – Literacy and Numeracy (NAPLAN) 2018: technical report

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CHAPTER 1 INTRODUCTION AND OVERVIEW

The Australian Council for Educational Research (ACER) was appointed by the Australian Curriculum, Assessment and Reporting Authority (ACARA) to undertake the central analysis of test data from the National Assessment Program – Literacy and Numeracy (NAPLAN) 2018 administration. In May 2018, the NAPLAN 2018 tests were administered nationally to all students in Years 3, 5, 7 and 9. As in previous cycles of NAPLAN, students at each of these year level were assessed in five domains: Reading, Writing, Language Conventions (Spelling, Grammar and Punctuation) and Numeracy.

The central analysis of NAPLAN data essentially involves a first step of placing each domain test in the current year onto the relevant NAPLAN historic domain scale through test calibration and a series of horizontal and vertical equating exercises. The equating process enables the reporting of student performance on the NAPLAN historic scale for each of the NAPLAN domains and for comparisons across year levels and over assessment cycles for longitudinal tracking of performance by students, schools and systems.

NAPLAN results are reported using five national achievement scales, one for each of the assessed aspects of literacy – Reading, Writing, Spelling, and Grammar and Punctuation – and one for Numeracy. Each NAPLAN achievement scale spans Years 3, 5, 7 and 9 with scores that range from approximately 0 to 1000. There are also ten proficiency bands that span Years 3, 5, 7 and 9. Each year level is reported against six of these bands. The reporting scale information with score-equivalence tables for the tests and proficiency bands provided necessary information for the jurisdictions to report to parents and schools.

Over one million students in Years 3, 5, 7 and 9 in all states and territories of Australia participated in NAPLAN 2018. From 2008 to 2017, NAPLAN delivered only paper-based tests. In 2018, NAPLAN delivered both paper-based tests and online multistage adaptive "tailored" tests. The online "tailored" tests in Reading, Spelling, Grammar and Punctuation, and Numeracy were delivered to students in participating schools. There were about 1,250 schools from 6 jurisdictions that participated in the online 'tailored' tests with a total of about 45,000 students in each of Years 3, 5, 7 and 9. Not all participating schools participated in all domains at all year levels. Participating students sat for the NAPLAN online tests instead of the paper-based tests in reading, Spelling, Grammar and Punctuation, and numeracy. For writing, the online students in Years 5, 7 and 9 responded to the writing prompts on the computer while Year 3 students did the writing test on paper. Reporting of preliminary student performance and final national reporting combined results of online and paper participants.

The delivery of the online "tailored" tests alongside the paper-based tests for the first time in NAPLAN 2018 presented new challenges in data analyses including the equating of the online tests to the NAPLAN historic scales. The 2018 central analyses were carried out in three phases. The first phase involved item and test analyses for the online tests and the checking of pre-scaled parameters used in the Student and School Summary reports (SSSRs) for students and schools participating in NAPLAN online testing. The second phase involved test calibrations and equating of the 2018 tests onto the historic NAPLAN reporting scales for each domain for paper-based tests and online tests. The scale equating process was to ensure that NAPLAN results were comparable across cycles and across year levels. The equating for the paper-based tests onto the historic scales was achieved using data collected by administering the secure equating tests (which had already been scaled onto the NAPLAN

historic scales) and the 2018 NAPLAN tests to a sample of Australian students. The equating of paper-based tests and online tests is an important part of the equating process for NAPLAN 2018. This was achieved through common items in the paper-based tests and the online tests.

The third phase involved analyses of the full cohort data that informed national reporting. The analyses provided performance results to ACARA for the preparation of the NAPLAN 2018 summary (preliminary) information released in August 2018, the NAPLAN 2018 National Report and for other reporting.

Test data based on student responses were delivered to ACER from the jurisdictional Test Administration Authorities. There were eight sources of paper-based data corresponding to the eight states and territories of Australia. Online test data were delivered to ACER by ACARA.

The main aim of this technical report is to describe and document the methodology used in the central data analyses of NAPLAN 2018 in producing reports on the performance of students. This includes description of methods for test calibration, test equating, scaling and in the estimation of performance results. Chapter 2 of this report describes the NAPLAN 2018 test design. Chapter 3 gives a summary of the methodology used in sampling for equating and calibration, and presents the participation rates. Chapter 4 describes the analysis procedure and the methodology of scaling and equating. Chapter 5 describes the data preparation process, test calibration outcomes and differential item functioning (DIF) analysis outcomes. Chapter 6 describes the test equating processes to place the NAPLAN 2018 tests on the NAPLAN historic scales. Chapter 7 describes the generation of proficiency estimates, scale transformation procedures and the methodology used for reporting of NAPLAN 2018 performance.

Technical details that are not included in this report are available upon request from ACARA.

Final results are reported in the 2018 NAPLAN National Report which can be found at http://www.nap.edu.au/results-and-reports/national-reports

CHAPTER 2 NAPLAN TEST DESIGN

From 2008 to 2017, NAPLAN delivered only paper-based tests. In 2018, NAPLAN administered online multistage adaptive "tailored" tests for the first time together with the paper-based tests. The online "tailored" tests were delivered to participating students who sat for the online tests instead of the paper-based tests in reading, language conventions and numeracy. All of the items in the paper-based versions were included in the pool of items used to construct the online tests. The common items between the paper versions and the online versions were included to provide a basis for statistically equating the online and paper tests. For writing, the online students in Years 5, 7 and 9 responded to the writing prompts on the computer while students in Year 3 continued to respond to the writing prompts on paper. Reporting of preliminary student performance and national reporting combined results from both online and paper participants.

2.1 Test designs for paper-based tests

Four paper-based tests were administered at each of Years 3, 5, 7 and 9 as in previous cycles. The four tests were reading, writing, language conventions (spelling, grammar and punctuation) and numeracy. The test results were reported in five domains: reading, writing, spelling, grammar and punctuation and numeracy. The paper-based tests were fixed tests in that all students within a year level sat for the same tests.

In reading, language conventions and numeracy, there was a mix of multiple-choice items and constructed-response items. The multiple-choice (MC) items were presented in a standard format with a number of possible answers (usually four) from which students were required to select the best answer. The constructed-response (CR) items generally required a numeric answer, a word or a short phrase. All MC and CR items were dichotomously scored (correct or incorrect).

Year 3 and Year 5 numeracy tests consisted of 36 and 42 items, respectively. The use of calculators was not permitted in the numeracy tests in Years 3 and 5. Each of the Year 7 and Year 9 numeracy tests consisted of 48 items where in both year levels, the use of calculators was permitted in 40 of the items but not in 8 of the items.

Table 2.1 to Table 2.4 provide information on the structure of each of the reading, spelling, grammar and punctuation, and numeracy domains in Years 3, 5, 7 and 9.

Table 2.1. Structure of Year 3 Test Domains, NAPLAN 2018 (Paper)

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Reading	Literacy	23	1	24	37
	Literature	5	0	5	
	Language	8	0	8	
Spelling	Spelling	0	25	25	25
Grammar and Punctuation	Grammar	17	0	17	25
	Punctuation	8	0	8	
Numeracy	Measurement and Geometry	8	2	10	36
	Number and Algebra	13	7	20	
	Statistics and Probability	2	4	6	

Table 2.2. Structure of Year 5 Test Domains, NAPLAN 2018 (Paper)

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Reading	Literacy	26	0	26	40
	Literature	5	0	5	
	Language	9	0	9	
Spelling	Spelling	0	25	25	25
Grammar and Punctuation	Grammar	19	0	19	25
	Punctuation	6	0	6	
Numeracy	Measurement and Geometry	9	3	12	42
	Number and Algebra	15	7	22	
	Statistics and Probability	6	2	8	

Table 2.3. Structure of Year 7 Test Domains, NAPLAN 2018 (Paper)

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Reading	Literacy	21	0	21	50
	Literature	10	0	10	
	Language	18	1	19	
Spelling	Spelling	0	25	25	25
Grammar & Punctuation	Grammar	20	0	20	25
	Punctuation	5	0	5	
Numeracy (No Calculator)	Number and Algebra	5	3	8	8
Numeracy (Calculator Allowed)	Measurement and Geometry	12	2	14	40
	Number and Algebra	13	5	18	
	Statistics and Probability	7	1	8	

Table 2.4. Structure of Year 9 Test Domains, NAPLAN 2018 (Paper)

Domain	Strand	Number of MC Items	Number of CR Items	Total for Strand	Total in Test
Reading	Literacy	24	1	25	50
	Literature	10	0	10	
	Language	14	1	15	
Spelling	Spelling	0	25	25	25
Grammar & Punctuation	Grammar	17	0	17	25
	Punctuation	8	0	25	
Numeracy (No Calculator)	Number and Algebra	4	4	8	8
Numeracy (Calculator Allowed)	Measurement and Geometry	10	4	14	40
	Number and Algebra	13	5	18	
	Statistics and Probability	5	3	8	

For writing, all students were required to write a persuasive text in 2018. Students from Years 3 and 5 responded to one Year3/Year5 writing prompt, while students in Years 7 and 9 responded to a separate Year7/Year9 prompt. The scripts were rated based on the same ten criteria (Criteria 1 to 10) across all four year levels. Each of these ten criteria was rated polytomously. The ratings on the ten criteria were treated as scores on ten different items. The ten criteria with the associated number of score categories are listed in Table 2.5

Table 2.5. Criteria and Score Categories for Writing, NAPLAN 2018

Item	Criterion	Score Categories
1	Audience	0-6
2	Text Structure	0-4
3	Ideas	0-5
4	Persuasive Devices	0-4
5	Vocabulary	0-5
6	Cohesion	0-4
7	Paragraphing	0-3
8	Sentence Structure	0-6
9	Punctuation	0-5
10	Spelling	0-6
	Raw Score Range	0-48

2.2 Test designs for online tailored tests

The NAPLAN online tailored tests utilized a three-stage adaptive test designs for Reading, Numeracy and Spelling tests. For Reading and Numeracy (see Figure 2.1), all students within a year level completed an initial testlet (testlets A) at Stage 1. Depending on their performance on the initial testlet, each student was assigned a second testlet at Stage 2 that was more targeted to their ability, according to a branching rule: the more difficult testlet D

was assigned to students with higher performance and the easier testlet B was assigned to students with lower performance. An exception to this rule was applied to students with very low performance on the initial testlet, they were first assigned the very easy testlet C as a second testlet before finally assigned testlet B as the third testlet. For the rest of the students, a second set of branching rules was used to assign the third testlets to students at Stage 3 based on their performance in the first two testlets combined. Testlets F, E and C consist of harder, medium and easier item sets respectively. Item responses from all three stages were put together to obtain a final estimate of student proficiency. In this way, the online adaptive design assigned test 'tailored' to the ability of each student. Even though the students may sit for different tests, with the use of item response model in the analysis of data, it is possible to estimate student proficiencies that are on the same scale so that test results can be compared.

In Reading, each testlet contained 13, 13, 16 and 16 items in Years 3, 5, 7 and 9, respectively. Hence, Reading test lengths were 39, 39, 48 and 48 in Years 3, 5, 7 and 9, respectively. In Numeracy, each testlet contained 12, 14, 16 and 16 items in Years 3, 5, 7 and 9, respectively. Hence, Numeracy test lengths were 36, 42, 48 and 48 in Years 3, 5, 7 and 9, respectively.

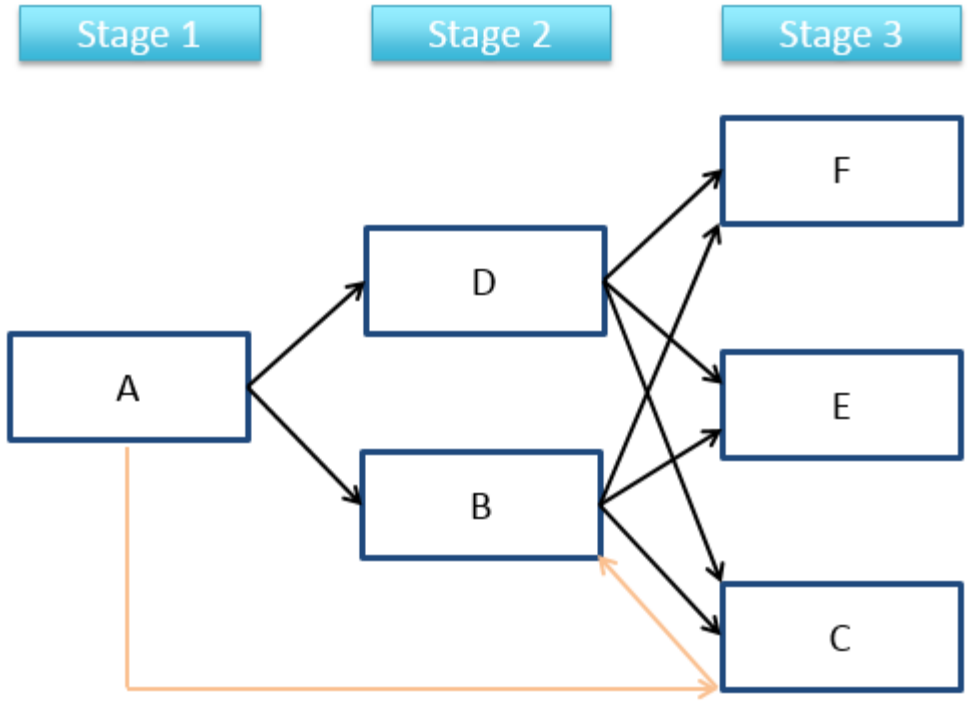

Figure 2.1 Testlets and Test Paths in Tailored Test Design for Reading and Numeracy

The Spelling test comprised two item types: orally delivered spelling items and proof-reading items. There were three testlets, SA, SB and SD, that consisted of the orally delivered Spelling items with 6 items in SA and 9 items each in SB and SD. There were two testlets that consisted of proof-reading Spelling items, PB and PD, with 10 items each. There were 4 common items between proof-reading testlets PB and PD. The Spelling adaptive test design is shown in Figure 2.2**Error! Reference source not found.**. At Stage 1, all students were assigned the testlet SA. Depending on the performance on the first testlet SA, each student was assigned a second testlet at Stage 2 according to a branching rule: the more difficult testlet SD was assigned to students with higher performance and the easier testlet SB was assigned to students with lower performance. A second set of branching rules was used to

assign the third testlets to students at Stage 3 based on their performance in the first two orally-delivered testlets. At Stage 3, the more difficult testlet PD was assigned to students with higher performance in the first two testlets and the easier testlet PB was assigned to students with lower performance.

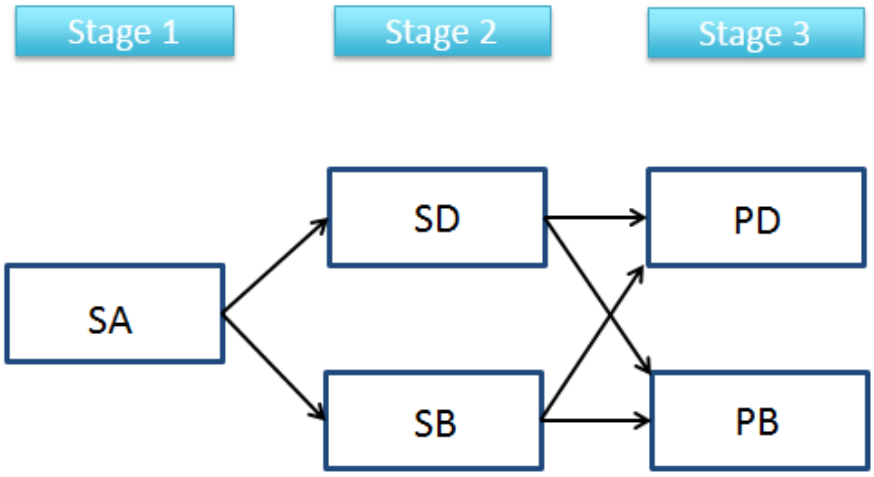

Figure 2.2 Testlets and Test Paths in Tailored Test Design for Spelling

In NAPLAN 2018, the assignment of testlets for online Grammar and Punctuation was based on student performance in online Reading. Students sat the Grammar and Punctuation test after they had sat the Reading test. Depending on whether they finished on testlet C, E or F on the Reading test, students were directed to Grammar and Punctuation testlets C, E or F (see Figure 2.3). Each online Grammar and Punctuation testlet formed a complete test comprising 25 items, 18 of which were grammar items and 7 were punctuation items. There were 6 common items between tests C and E and 6 between tests E and F.

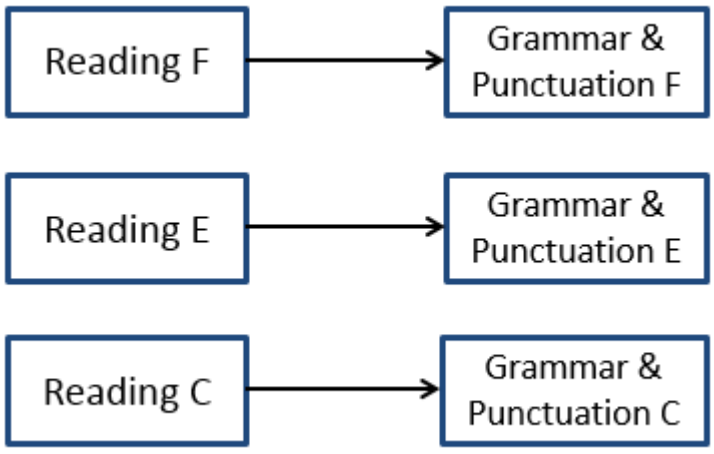

Figure 2.3 Grammar and Punctuation Tests

Each of the testlets in NAPLAN 2018 online Reading, Spelling, Grammar and Punctuation, and Numeracy had two to three parallel versions. The testlets were constructed from large pools of items. Table 2.6 to Table 2.9 show the number of MC items and CR items in the item pools by test domain in Years 3, 5, 7 and 9.

Table 2.6. Year 3 Item Pools by Test Domain, NAPLAN 2018 (Online)

Domain	Number of MC Items	Number of CR Items	Total in Pool
Reading	108	22	130
Spelling	0	87	87
Grammar and Punctuation	56	36	92
Numeracy	74	45	119

Table 2.7. Year 5 Item Pools by Test Domain, NAPLAN 2018 (Online)

Domain	Number of MC Items	Number of CR Items	Total in Pool
Reading	111	19	130
Spelling	0	88	88
Grammar and Punctuation	43	44	87
Numeracy	82	58	140

Table 2.8. Year 7 Item Pools by Test Domain, NAPLAN 2018 (Online)

Domain	Number of MC Items	Number of CR Items	Total in Pool
Reading	137	23	160
Spelling	0	86	86
Grammar and Punctuation	44	48	92
Numeracy	98	62	160

Table 2.9. Year 9 Item Pools by Test Domain, NAPLAN 2018 (Online)

Domain	Number of MC Items	Number of CR Items	Total in Pool
Reading	135	25	160
Spelling	0	87	87
Grammar and Punctuation	47	45	92
Numeracy	94	65	159

The design and scoring for the writing tests was the same as for paper-based students. All students were required to write a persuasive text. Students from Years 3 and 5 responded to a Year 3/5 writing prompt, while students in Years 7 and 9 responded to a Year 7/9 prompt. The online students in Years 5, 7 and 9 responded to the writing prompts on computer while Year 3 students did the writing test on paper. On the first day (Day 1) of writing test, the same set of two prompts was administered to both paper-based and online students. For the online students in Years 5, 7 and 9 who wrote their response on computer and had to sit for

the writing test on the second day (Day 2), a different set of two prompts was administered; one for Year 5 and one for Year7/9. The scripts were rated based on the same ten criteria (Criteria 1 to 10) across all four year levels as for paper-based students (see Table 2.5).

CHAPTER 3 SAMPLING DESIGN FOR TEST CALIBRATIONS AND EQUATING

For NAPLAN 2018, test calibration of the paper tests and the horizontal and vertical equating process to put the paper tests on the NAPLAN historic scale were largely based on the established methods used up until 2017. Data of paper tests based on a scientific sample drawn from all states and territories were used for the purpose of test calibrations and scaling, for equating and for generating preliminary estimates of key national outcomes to be used on parent reports. The horizontal equating for the paper-based tests to the NAPLAN historic scale was achieved using data collected by administering the secure equating tests (which had already been scaled onto the NAPLAN historic scale) and the 2018 NAPLAN tests to a sample of Australian students. The scientific sample was also used to provide jurisdictions with preliminary estimates of the final national outcomes some time before the full census data (from over a million students) were made available. This approach enabled results to be delivered to jurisdictions in time for reporting to schools and parents. For item calibration, a sub-sample was drawn from the scientific sample with equal contributions of students from the participating TAAs.

For the online tests, the approximate numbers of participating schools and students in NAPLAN 2018 online are shown in Table 3.12, section 3.4. For calibration and equating purposes, a sub-sample was randomly drawn from all the available online data, with equal contributions of students from the participating TAAs. There were no other sampling exercise for online data. Sections 3.1 to 3.3 will focus on the sampling design for test calibrations and equating of the paper-based tests.

3.1 Overview

There were three sampling activities associated with the NAPLAN 2018 paper-based tests:

- The National Scientific Sample (also referred to as the National Calibration Sample) – This was a sample of students who participated in the NAPLAN assessments that was used for generating estimates of the key national outcomes to be used on parent reports and for the estimation of preliminary NAPLAN 2018 results on the existing NAPLAN scale.
- The Item Calibration Sample – This was a sub-sample of the National Scientific Sample, with equal contributions of students from the participating TAAs. This sub-sample was used for test calibrations and scaling of paper-based tests.
- The Equating Sample – This sample was required for equating the 2018 paper tests onto the historic NAPLAN reporting scales. As in earlier administrations, a common-person equating method was used. The paper-based secure equating forms, which had been previously equated onto the NAPLAN reporting scales, were administered to students in this equating sample in addition to the NAPLAN 2018 paper tests.

As a contractor for the Australian Curriculum, Assessment and Reporting Authority (ACARA), Australian Council for Educational Research (ACER), with information from ACARA and documentation from previous cycles, created the sampling procedures used for the NAPLAN 2018 administration. This includes documentation for calculating the sampling

weights which can be found in an ACER report included in Appendix G of the 2012 NAPLAN Technical Report. This appendix provides:

- A description of the source data files that are used to create the sampling weights.
- The steps used for preparing the data.
- The calculation procedure for the sampling weights including adjustments for post-stratification and student non-response.
- The procedure for checking and assigning weights to the National Scientific Sample.
- The procedure for calculating the response rates.

Appendix A provides the NAPLAN 2018 Sampling Report and describes the sampling design and methodology applied to the National Calibration and Equating samples. The appendix also provides details on the sample frame and sampling parameters used in the administration of NAPLAN 2018.

The remainder of this chapter presents tables describing main aspects of the 2018 National Scientific Sample and the Equating Sample. These tables include the numbers of schools and students sampled, the assessment participation rates and the distributions of gender, language background (LBOTE), Indigenous status and geolocation by year level.

3.2 The National Calibration Sample

Table 3.1 lists the numbers of schools and students included in the National Scientific Sample from each of the eight jurisdictions. The table shows both the numbers of students (N) who were selected in the sample, as well as the numbers of students (Wtd. N) represented by the samples after sampling weights had been applied to approximate the full population of students who had taken the NAPLAN 2018 tests.

Table 3.1. Numbers of Schools and Students included in the National Scientific Sample by State/Territory and Year Level (2018)

Year Level	Source	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	Total
Year 3	Schools	47	47	47	45	46	30	-	24	286
	Students (N)	1969	1914	2198	1815	1680	1001	-	454	11031
	Students (Weighted N)	100881	81878	73984	37147	22962	7254	-	5041	329147
Year 5	Schools	48	47	47	45	46	30	-	24	287
	Students (N)	1988	1846	2186	1768	1632	964	-	370	10754
	Students (Weighted N)	99221	80151	76383	36893	22143	6985	-	4358	326134
Year 7	Schools	48	48	47	46	46	30	-	17	282
	Students (N)	5335	5150	5962	6403	1371	2023	-	567	26811
	Students (Weighted N)	93333	73415	69730	32664	20851	6293	-	4256	300542
Year 9	Schools	48	49	48	45	47	30	-	16	283
	Students (N)	5201	5159	5793	6135	4409	1857	-	469	29023
	Students (Weighted N)	94169	76157	68860	31533	21682	6988	-	4084	303473
Total	Schools	191	191	189	181	185	120	-	81	1138
	Students (N)	14493	14069	16139	16121	9092	5845	-	1860	77619
	Students (Weighted N)	387605	311600	288958	138238	87637	27521	-	17739	1259297

The remainder of this section presents summary tables showing school and student participation in the sample and the distribution of the National Scientific Sample across key population subgroups.

Table 3.2 shows the percentages of schools from the original sampling list (i.e., without replacement schools) that were included in the National Scientific Sample for each jurisdiction by year level, and the inclusion rates when replacement schools were taken into account.

For each jurisdiction and year level, the school response rates before the use of replacement schools are calculated as

$$RR_s = P_s/(P_s + NP)$$

where *RRs* is the response rate using sampled schools only, *Ps* is the number of sampled schools that participated and *NP* is the number of sampled schools that did not participate.

The school response rate after the use of replacement school is given by

$$RR_{sr} = P_{sr}/(P_{sr} + NP)$$

where *RRsr* is the response rate using sampled schools and replacement schools, *Psr* is the number of sampled or replacement schools that participated, and *NP* is the number of sampled schools that did not participate.

Table 3.2. Percentage of Sampled Schools included in the National Scientific Sample (2018)

Year Level	School Type	NSW	VIC	QLD	WA	SA	TAS	ACT	NT
Year 3	Sampled Schools	98	98	96	100	96	100	-	84
	Sampled and Replaced Schools	98	98	98	100	96	100	-	88
Year 5	Sampled Schools	100	98	96	100	98	97	-	84
	Sampled and Replaced Schools	100	98	96	100	98	97	-	88
Year 7	Sampled Schools	100	98	94	98	100	100	-	76
	Sampled and Replaced Schools	100	98	98	100	100	100	-	88
Year 9	Sampled Schools	100	100	94	96	87	97	-	59
	Sampled and Replaced Schools	100	100	96	98	96	97	-	82

Table 3.3 to Table 3.6 present the overall student participation rates obtained by aggregating students across all of the schools within the National Scientific Sample. These participation rates are reported by state/territory and by domain for each year level. Besides students who were *present* for testing, several other categories are shown and defined as follows:

- *Absent* students are students who did not take the test because they were not present when the test was administered, and are identified as absent by the school for the purpose of the test session (ACARA, 2018a, Section 5.3);
- Students may be labelled *exempt* from one or more of the tests on the basis of English language proficiency or significant disabilities as attested by parents/carers (ACARA, 2018a, Section 5.2);
- Students may be *withdrawn* from the testing program by their parent/carer for such reasons as religious beliefs or philosophical objections to testing (ACARA, 2018a, Section 5.4);
- The *other* category includes sanctioned abandonment of the test due to injury and illness (ACARA, 2018a, Section 5.5) and verified by the Test Administration Authority (TAA).

Table 3.3. Year 3 Sample: Overall Participation Category Rates (%) by State/Territory by Domain (2018)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.2	3.2	2.3	3.1	4.2	2.6	-	22.2	3.5
	Exempt	0.9	1.4	0.7	2.3	2.1	1.1	-	0.9	1.4
	Withdrawn	1.8	2.8	5.3	3.1	4.2	2.2	-	1.3	3.3
	Other	-	-	-	-	-	-	-	-	-
	Present	96.1	92.6	91.7	91.5	89.4	94.1	-	75.6	91.8
Writing	Absent	1.3	3.1	3.0	2.5	4.9	2.7	-	20.3	3.6
	Exempt	1.0	1.5	0.7	2.3	2.4	1.1	-	0.9	1.4
	Withdrawn	1.9	3.0	5.2	3.1	4.0	2.2	-	1.5	3.3
	Other	-	-	-	-	-	-	-	-	0.0
	Present	95.8	92.5	91.1	92.0	88.8	94.0	-	77.3	91.7
Spelling	Absent	1.2	3.1	2.8	2.6	4.1	2.5	-	18.9	3.4
	Exempt	1.0	1.5	0.7	2.3	2.3	1.1	-	0.9	1.4
	Withdrawn	1.7	2.8	5.3	3.0	4.0	2.2	-	1.3	3.2
	Other	-	-	-	0.1	-		-	0.2	0.0
	Present	96.1	92.7	91.2	92.0	89.6	94.2	-	78.6	92.0
Grammar & Punctuation	Absent	1.2	3.1	2.8	2.6	4.1	2.5	-	18.9	3.4
	Exempt	1.0	1.5	0.7	2.3	2.3	1.1	-	0.9	1.4
	Withdrawn	1.7	2.8	5.3	3.0	4.0	2.2	-	1.3	3.2
	Other	-	-	-	0.1	-	-	-	0.2	0.0
	Present	96.1	92.7	91.2	92.0	89.6	94.2	-	78.6	92.0
Numeracy	Absent	1.6	3.7	3.4	3.8	4.9	3.1	-	23.3	4.2
	Exempt	0.7	1.3	0.6	2.1	2.0	1.1	-	0.9	1.3
	Withdrawn	1.7	2.5	5.2	3.0	3.7	2.1	-	1.5	3.1
	Other	-	-	-	-	-	-	-	-	-
	Present	96.0	92.6	90.8	91.1	89.3	93.7	-	74.2	91.4

Note: The percentages of students represented in the table above have been rounded and may not sum to 100.

Table 3.4. Year 5 Sample: Overall Participation Category Rates (%) by State/Territory by Domain (2018)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	1.0	2.8	2.7	2.5	3.8	3.8	-	18.1	3.2
	Exempt	1.3	1.2	0.5	1.8	2.1	1.6	-	1.4	1.3
	Withdrawn	0.9	2.6	4.8	2.7	3.4	1.2	-	0.5	2.7
	Other	-	-	-	-	-	-	-	-	-
	Present	96.9	93.4	92.0	93.1	90.7	93.4		80.0	92.8
Writing	Absent	1.3	2.7	2.8	2.1	4.4	4.1	-	17.0	3.3
	Exempt	1.3	1.1	0.5	1.8	2.2	1.7	-	1.4	1.3
	Withdrawn	0.9	2.7	4.8	2.8	3.4	1.1	-	0.5	2.7
	Other	-	-	-	-	-	-	-	-	0.0
	Present	96.5	93.4	91.9	93.3	90.0	93.0	-	81.1	92.7
Spelling	Absent	1.1	2.8	2.7	2.1	3.4	3.9	-	16.5	3.0
	Exempt	1.3	1.2	0.5	1.8	2.2	1.6	-	1.4	1.3
	Withdrawn	0.9	2.5	4.9	2.8	3.4	1.1	-	0.5	2.7
	Other	-	-	-	-	0.1	0.1	-	-	0.0
	Present	96.7	93.4	92.0	93.4	90.9	93.3	-	81.6	92.9
Grammar & Punctuation	Absent	1.1	2.8	2.7	2.1	3.4	3.9	-	16.5	3.0
	Exempt	1.3	1.2	0.5	1.8	2.2	1.6	-	1.4	1.3
	Withdrawn	0.9	2.5	4.9	2.8	3.4	1.1	-	0.5	2.7
	Other	-	-	-	-	0.1	0.1	-	-	0.0
	Present	96.7	93.4	92.0	93.4	90.9	93.3	-	81.6	92.9
Numeracy	Absent	1.6	2.8	3.1	2.8	4.5	4.5	-	21.9	3.7
	Exempt	1.1	1.2	0.5	1.8	2.1	1.6	-	1.4	1.3
	Withdrawn	0.9	2.5	4.9	2.7	3.4	1.2	-	0.5	2.7
	Other	-	-	-	-	-	-	-	-	-
	Present	96.4	93.5	91.6	92.8	90.0	92.7	-	76.2	92.3

Notes: The percentages of students represented in the table above have been rounded and may not sum to 100.

Table 3.5. Year 7 Sample: Overall Participation Category Rates (%) by State/Territory by Domain (2018)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	4.0	4.0	5.1	3.8	5.3	4.6	-	16.2	4.6
	Exempt	1.0	0.6	0.9	0.8	1.7	1.8	-	2.6	1.0
	Withdrawn	0.9	1.2	5.0	0.6	3.6	0.3	-	0.9	1.9
	Other	0.1	-	-	-	-	-	-	-	0.0
	Present	94.1	94.3	89.0	94.8	89.4	93.2	-	80.2	92.6
Writing	Absent	3.7	3.5	4.6	3.6	5.6	4.2	-	16.8	4.3
	Exempt	1.0	0.6	0.9	0.8	1.7	1.7	-	2.6	1.0
	Withdrawn	0.9	1.1	4.9	0.6	3.8	0.3	-	0.9	1.9
	Other	0.0	-	0.0	0.0	-	-	-	-	0.0
	Present	94.4	94.8	89.6	94.9	88.9	93.7	-	79.7	92.9
Spelling	Absent	3.7	3.4	4.4	3.4	5.0	3.7	-	16.2	4.1
	Exempt	1.0	0.6	0.9	0.8	1.7	1.7	-	2.6	1.0
	Withdrawn	0.9	1.2	4.9	0.6	3.8	0.3	-	0.9	1.9
	Other	0.0	-	0.0	-	-	-	-	-	0.0
	Present	94.4	94.8	89.8	95.1	89.5	94.2	-	80.2	93.1
Grammar & Punctuation	Absent	3.7	3.4	4.4	3.4	5.0	3.7	-	16.2	4.1
	Exempt	1.0	0.6	0.9	0.8	1.7	1.7	-	2.6	1.0
	Withdrawn	0.9	1.2	4.9	0.6	3.8	0.3	-	0.9	1.9
	Other	0.0	-	0.0	-	-	-	-	-	0.0
	Present	94.4	94.8	89.8	95.1	89.5	94.2	-	80.2	93.1
Numeracy	Absent	4.6	4.5	5.1	4.4	6.1	5.2	-	18.5	5.1
	Exempt	1.0	0.6	0.9	0.8	1.8	1.8	-	2.8	1.0
	Withdrawn	0.9	1.2	5.0	0.6	3.4	0.3	-	0.9	1.9
	Other	0.0	-	-	0.0	-	-	-	-	0.0
	Present	93.5	93.7	89.0	94.2	88.7	92.6	-	77.8	92.0

Notes: The percentages of students represented in the table above have been rounded and may not sum to 100.

Table 3.6. Year 9 sample: Overall Participation Category Rates (%) by State/Territory by Domain (2018)

Domain	Participation Code	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading	Absent	6.3	7.1	7.4	5.1	8.1	7.8	-	17.3	6.9
	Exempt	0.8	0.8	0.9	0.9	1.7	1.8	-	0.9	1.0
	Withdrawn	1.6	2.4	7.5	0.5	3.2	0.8	-	-	2.9
	Other	-	-	-	-	-	-	-	-	-
	Present	91.3	89.7	84.3	93.5	87.1	89.6	-	81.9	89.2
Writing	Absent	5.6	6.6	6.9	4.8	7.1	8.0	-	17.9	6.5
	Exempt	0.8	0.8	0.9	0.9	1.7	1.8	-	0.9	1.0
	Withdrawn	1.6	2.4	7.4	0.5	3.1	0.8	-	-	2.8
	Other	0.0	-	0.0	0.1	-	-	-	-	0.0
	Present	91.9	90.3	84.7	93.7	88.0	89.5	-	81.2	89.6
Spelling	Absent	5.6	6.4	6.8	4.8	7.2	7.9	-	16.8	6.4
	Exempt	0.8	0.8	0.9	0.9	1.7	1.8	-	0.9	1.0
	Withdrawn	1.6	2.3	7.4	0.5	3.2	0.8	-	-	2.8
	Other	0.0	-	-	0.0	-	-	-	-	0.0
	Present	91.9	90.5	84.9	93.8	87.9	89.6	-	82.3	89.8
Grammar & Punctuation	Absent	5.6	6.4	6.8	4.8	7.2	7.9	-	16.8	6.4
	Exempt	0.8	0.8	0.9	0.9	1.7	1.8	-	0.9	1.0
	Withdrawn	1.6	2.3	7.4	0.5	3.2	0.8	-	-	2.8
	Other	0.0	-	-	0.0	-	-	-	-	0.0
	Present	91.9	90.5	84.9	93.8	87.9	89.6	-	82.3	89.8
Numeracy	Absent	7.4	8.0	8.4	5.4	8.8	8.6	-	20.5	7.8
	Exempt	0.8	0.7	0.8	0.9	1.7	1.8	-	0.9	1.0
	Withdrawn	1.7	2.7	7.8	0.5	3.3	0.8	-	-	3.0
	Other	-	-	0.1	-	-	-	-	-	0.0
	Present	90.1	88.6	83.0	93.1	86.2	88.7	-	78.7	88.2

Notes: The percentages of students represented in the table above have been rounded and may not sum to 100.

Table 3.7 to Table 3.10 show the overall distributions of the National Scientific Sample by several student-level and school-level demographic variables by year level and jurisdiction. The definitions of these variables are taken from the *National Assessment Program – Literacy and Numeracy Achievement in Reading, Writing, Language Conventions and Numeracy: National Report for 2018* (ACARA, 2019):

- *Sex* is the distinction 'male' and 'female' as reported on a student's enrolment record (p. viii).
- A student is classified as *language background other than English* (LBOTE) if either the student or parents/ guardians speak a language other than English at home (p. vii).
- A student is considered to be *Indigenous* if he or she identifies as being of Aboriginal and/or Torres Strait Islander origin. The term 'origin' is considered to relate to a person's Australian Aboriginal or Torres Strait Islander descent and for some, but not all, their cultural identity (p. vii).
- The *geolocation* of a school uses the ABS Australian Statistical Geography Standard (ASGS) Remoteness Structure which is based on the locality of individual schools and is used to disaggregate data according to Major Cities of Australia, Inner Regional Australia, Outer Regional Australia, Remote Australia and Very Remote Australia (p. vii).

Table 3.7. National Scientific Sample: Distribution (%) by Sex by Year Level (2018)

Year Level	Gender	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Male	48.9	51.1	50.0	52.1	50.8	52.6	-	51.3	50.7
	Female	51.0	48.9	50.0	47.9	49.1	47.4	-	48.7	49.2
	Intersex/Indeterminate	0.2	-	-	-	-	-	-	-	0.0
	Not stated	-	-	-	-	0.1	-	-	-	0.0
Year 5	Male	47.8	51.5	47.4	51.9	52.5	54.1	-	52.2	50.5
	Female	52.2	48.5	52.6	48.1	47.5	45.9	-	47.8	49.5
	Intersex/Indeterminate	0.1	-	-	-	-	-	-	-	0.0
	Not stated	-	-	-	-	0.1	-	-	-	0.0
Year 7	Male	54.6	48.5	50.9	52.0	52.8	47.0	-	51.5	51.2
	Female	45.3	51.5	49.1	48.0	47.2	53.0	-	48.5	48.7
	Intersex/Indeterminate	0.1	-	-	-	-	-	-	-	0.0
	Not stated	-	-	-	-	-	-	-	-	-
Year 9	Male	54.8	49.1	51.2	51.9	52.5	44.3	-	53.3	51.4
	Female	45.0	50.9	48.8	48.1	47.4	55.7	-	46.7	48.6
	Intersex/Indeterminate	0.2	-	-	-	-	-	-	-	0.0
	Not stated	-	-	-	-	0.1	-	-	-	0.0

Notes: The percentages represented in the table above have been rounded and may not sum to 100.

Table 3.8. National Scientific Sample: Distribution (%) by Language Background by Year Level (2018)

Year Level	Background	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Non-LBOTE	65.4	77.8	81.2	57.2	85.2	93.2	-	22.5	73.1
	LBOTE	33.8	22.2	18.8	25.4	11.7	4.4	-	72.5	23.0
	Not Stated	0.9	-	-	17.4	3.0	2.4	-	5.1	3.9
Year 5	Non-LBOTE	65.3	79.1	83.2	60.1	86.0	95.6	-	18.9	74.7
	LBOTE	34.0	20.9	16.7	22.9	12.4	3.6	-	76.5	21.9
	Not Stated	0.7	-	0.1	17.1	1.5	0.7	-	4.6	3.4
Year 7	Non-LBOTE	73.8	75.7	86.6	58.0	86.6	88.2	-	33.5	74.1
	LBOTE	21.5	24.3	13.3	21.4	12.5	6.3	-	54.5	19.3
	Not Stated	4.7	-	0.1	20.6	0.9	5.5	-	12.0	6.6
Year 9	Non-LBOTE	71.1	75.9	86.7	57.5	83.5	93.2	-	38.0	74.9
	LBOTE	23.5	24.1	13.2	21.3	14.3	5.4	-	52.2	19.0
	Not Stated	5.4	-	0.0	21.1	2.2	1.4	-	9.8	6.0

Notes: The percentages represented in the table above have been rounded and may not sum to 100.

Table 3.9. National Scientific Sample: Distribution (%) by Indigenous Status by Year Level (2018)

Year Level	Indigenous Status	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Aboriginal and/or Torre Strait Isl.	5.3	1.8	7.6	6.7	5.5	12.7	-	60.6	8.4
	Non-Aboriginal and/or Torre Strait Isl.	92.8	98.2	87.5	90.2	93.3	83.0	-	39.4	89.3
	Not Stated	1.8	0.1	4.8	3.1	1.1	4.3	-	-	2.4
Year 5	Aboriginal and/or Torre Strait Isl.	5.3	2.2	6.6	6.1	5.1	11.4	-	65.4	7.7
	Non-Aboriginal and/or Torre Strait Isl.	91.6	97.6	90.8	89.8	93.7	86.9	-	34.6	90.1
	Not Stated	3.1	0.2	2.7	4.1	1.2	1.7	-	-	2.1
Year 7	Aboriginal and/or Torre Strait Isl.	7.0	1.5	7.5	4.9	5.5	10.3	-	44.6	6.5
	Non-Aboriginal and/or Torre Strait Isl.	87.3	98.3	89.8	91.0	93.7	87.0	-	55.2	90.5
	Not Stated	5.7	0.1	2.7	4.1	0.8	2.6	-	0.2	3.0
Year 9	Aboriginal and/or Torre Strait Isl.	6.4	2.0	7.1	4.9	3.6	8.6	-	37.3	5.6
	Non-Aboriginal and/or Torre Strait Isl.	88.7	97.8	89.9	91.2	95.0	89.4	-	62.7	91.6
	Not Stated	4.9	0.3	3.1	3.9	1.5	2.0	-	-	2.7

Notes: The percentages represented in the table above have been rounded and may not sum to 100.

Table 3.10. National Scientific Sample: Distribution (%) by Geolocation by Year Level (2018)

Year Level	Geolocation	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Year 3	Major Cities	74.3	73.4	61.0	78.6	73.5		-	-	62.3
	Inner Regional	19.6	21.1	17.6	9.0	11.0	67.9	-	-	20.0
	Outer Regional	6.0	5.5	18.1	5.5	13.0	31.3	-	42.1	13.1
	Remote	0.1	-	0.4	6.9	2.0	0.8	-	16.3	2.3
	Very Remote	-	-	3.0	-	0.5	-	-	41.6	2.4
Year 5	Major Cities	75.1	70.5	62.5	79.7	71.2	-	-	-	62.6
	Inner Regional	19.0	23.3	16.3	9.0	12.4	64.3	-	-	20.0
	Outer Regional	5.7	6.1	18.1	5.8	13.4	35.0	-	39.2	13.3
	Remote	0.2	-	0.7	5.4	2.1	0.7	-	14.6	2.0
	Very Remote	-	-	2.4	-	0.9	-	-	46.2	2.2
Year 7	Major Cities	67.8	75.9	67.3	76.7	69.3	-	-	-	64.9
	Inner Regional	27.8	17.6	18.5	6.7	11.5	70.8	-	-	20.6
	Outer Regional	4.0	6.3	11.0	8.5	15.3	28.3	-	37.6	10.2
	Remote	0.3	0.2	1.1	8.0	2.5	0.4	-	32.1	3.1
	Very Remote	-	-	2.1	-	1.4	0.4	-	30.3	1.2
Year 9	Major Cities	68.8	76.2	69.3	78.4	72.2	-	-	-	67.2
	Inner Regional	26.4	18.0	17.3	6.4	11.1	71.6	-	-	19.0
	Outer Regional	4.6	5.7	10.1	8.3	11.8	27.8	-	43.5	9.9
	Remote	0.2	0.2	1.1	6.9	4.1	0.3	-	32.6	2.9
	Very Remote	-	-	2.2	-	0.8	0.3	-	23.9	1.0

Notes: The percentages represented in the table above have been rounded and may not sum to 100.

3.3 The Equating Sample

Table 3.11 shows the achieved number of schools and students in the Equating Sample by domain, year level, and state/territory.

Table 3.11. Number of Schools and Students in the Equating Sample by Domain (2018)

Domain	Year Level		NSW	VIC	QLD	WA	SA	TAS	NT	AUS
Reading	Year 3	School	11	8	6	3	3	2	2	35
		Student	297	189	134	66	69	48	46	849
	Year 5	School	11	8	6	3	3	2	2	35
		Student	291	198	149	77	78	43	51	887
	Year 7	School	14	10	9	5	3	2	1	44
		Student	309	231	208	121	68	42	20	999
	Year 9	School	14	11	9	5	3	2	1	45
		Student	284	233	206	124	68	42	22	979
Language Conventions (Spelling, Grammar and Punctuation)	Year 3	School	11	8	8	4	2	2	2	37
		Student	283	181	189	90	53	50	54	900
	Year 5	School	11	8	8	4	2	2	2	37
		Student	300	189	198	105	47	50	52	941
	Year 7	School	14	11	9	5	2	2	1	44
		Student	328	256	223	95	59	46	25	1032
	Year 9	School	14	11	9	5	4	2	1	46
		Student	317	248	220	98	92	43	24	1042
Numeracy	Year 3	School	11	9	5	4	3	2	2	36
		Student	266	212	119	85	65	49	53	849
	Year 5	School	11	9	5	4	3	2	2	36
		Student	274	215	129	109	53	51	47	878
	Year 7	School	14	11	10	5	3	2	0	45
		Student	332	241	245	116	63	42	0	1039
	Year 9	School	14	11	10	5	4	2	0	46
		Student	347	246	247	123	107	45	0	1115

3.4 The NAPLAN 2018 online cohort

The approximate numbers of participating schools and students in NAPLAN 2018 online by jurisdiction are shown in

Table 3.12 below.

Table 3.12. Number of Participating Schools and Students for Online NAPLAN 2018

Domain	Year Level		NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
Reading Language Conventions Numeracy	Year 3	School	460	88	65	221	121	-	85	-	1040
		Student	18697	4669	3938	10543	4404	-	5260	-	47511
	Year 5	School	463	88	68	221	121	-	87	-	1048
		Student	18999	5063	3974	10690	4537	-	4879	-	48142
	Year 7	School	143	48	32	82	121	-	30	-	456
		Student	14173	6856	3853	10893	4489	-	4702	-	44966
	Year 9	School	145	49	32	81	44	-	30	-	381
		Student	13782	6686	3710	10478	5305	-	4534	-	44495
Writing	Year 3	School	462	88	65	220	121	-	89	-	1045
		Student	18008	4670	3933	10541	4411	-	5167	-	46730
	Year 5	School	465	88	68	221	121	-	89	-	1052
		Student	18596	5061	3980	10740	4498	-	4999	-	47874
	Year 7	School	142	53	33	82	121	-	33	-	464
		Student	13617	7674	3989	10881	4454	-	5047	-	45662
	Year 9	School	145	54	33	81	44	-	32	-	389
		Student	12887	7712	3841	10453	5301	-	4855	-	45049

CHAPTER 4 ANALYSIS PROCEDURES AND METHODOLOGY

This chapter describes the processes and methodologies used in the NAPLAN 2018 central analysis. The psychometrics and scaling methods used are methods that have been widely utilised in many large scale assessment programs, including the *Programme for International Student Assessment* (PISA).

The NAPLAN 2018 test calibrations for the paper tests were based on the Item Calibration Sample drawn from the National Scientific sample. The equating of these tests to the NAPLAN scale was based on the Equating Sample. The National Scientific Sample was used for the estimation of preliminary NAPLAN 2018 results in July. These estimates were used on parent reports.

The NAPLAN 2018 test calibrations for the online tests were based on the online Item Calibration Sample drawn from all available online data. The equating of the online tests to each of the NAPLAN domain scales was carried out by equating through the paper tests using common items between the paper and online tests. The equating process is described in Chapter 6. The analyses for national reporting were based on full cohort data combining results from paper and online data.

The NAPLAN program uses multidimensional item response model with latent regression (MDLR) to produce the plausible values (PVs) required for the analysis and reporting of NAPLAN results at the national and jurisdictional level. The PVs were generated using the *ACER ConQuest* software. PVs were generated based on the National Scientific Sample for the estimation of preliminary results in July. They were based on stage-1 census data for the estimation of summary results released in August 2018 and on stage-2 full census data for the NALAN 2018 National Report.

Technical details not included in this chapter are available upon request from ACARA.

4.1 Data Collection and Data Delivery

Test data were delivered to ACER in five main batches:

- staggered delivery of online test data for each domain (May)
- delivery of the merged paper-based horizontal equating data from equating samples from the jurisdictions by domain for reading, spelling, grammar & punctuation, numeracy (June)
- delivery of the paper test data from the national calibration sample from jurisdictions by year level for calibration and equating purposes for reading, spelling, grammar & punctuation, numeracy; and writing data (June)
- delivery of the stage-1 census data (as near complete as possible, on paper and online tests) for analyses to produce national summary report (July)
- delivery of the stage-2 complete census data (on paper and online tests) to produce the NAPLAN 2018 National Report (September)

Paper tests

Data collection of paper tests was undertaken by the Test Administration Authorities (TAAs)

in the jurisdictions. There were three rounds of data delivery for the central data analysis and a final round for the preparation of national report. The first round involved delivery of data from the equating samples and the second round involved the delivery of the national scientific samples, both described in Chapter 3. The third round involved delivery of nearly complete stage-1 full cohort NAPLAN paper-based test data of Years 3, 5, 7 and 9 students in mid July 2018. These data were used for the generation of the NAPLAN 2018 national summary information. The complete (with background data) full cohort data used in the production of the national report was delivered in September 2018. With each round of data delivery, the datasets were cleaned and recoded in preparation for analysis. A systematic process involving data checking was used to ensure that each dataset was consistent with national code frames and data dictionaries.

Online tests

Education Services Australia (ESA) managed the online national assessment platform (platform) on which the NAPLAN 2018 online tests were delivered. ACER received the online test data extracted from the platform directly from ACARA by domain as they became available. With the tight timeline between the online assessments and the delivery of School and Student Summary reports (SSSRs), quality assurance checks of online data extracted from the platform started in April. The preparation for online data checking and management and for the analysis of online data followed the quality assurance check. Data integrity checking included the checking of online data files conforming to their data dictionary and coding conventions (supplied by ACARA) and the checking of item responses in the data files conforming to the valid codes specified in the code frames.

4.2 Scaling Model

Test calibrations and scaling for both paper tests and online tests were performed based on the Rasch model, as was the case in previous administrations.

For multiple-choice items and constructed-response items with a category score 1 for correct responses and 0 for incorrect responses, the Rasch model predicts the probability of a correct response given the latent trait (θ_n) and the item difficulty or location (δ_i). This is modelled as

$$P_i(1|\theta) = \frac{\exp(\theta_n - \delta_i)}{1 + \exp(\theta_n - \delta_i)}$$

where $P_i(1|\theta)$ is the probability of person n to score 1 on item i. θ_n is the estimated latent trait of person n, and δ_i the estimated location of item i on this dimension. For each item, responses are modelled as a function of the latent trait θ_n.

In the case of items with more than two categories, this model can be generalised to the Partial Credit Model (Masters, 1982) as

$$P(x|\theta) = \frac{\exp\sum_{j=0}^{x}(\theta_n - \delta_i + \tau_{ij})}{\sum_{h=0}^{m_i}\exp\sum_{j=0}^{h}(\theta_n - \delta_i + \tau_{ij})} \qquad x = 0,1,\mathrm{K}\ ,m_i$$

where $P(x|\theta)$ is the probability of person n to score x on item i. θ_n denotes the person's latent trait, the item parameter δ_i gives the location of the item on the latent continuum, and τ_{ij} is a step parameter.

It should be noted that both item (difficulty) and person (ability) parameters are measured on the same scale: in the case of dichotomous items with just two categories (correct and incorrect), for students who have ability (θ_n) the same as the estimated difficulty parameter of an item (δ_i), the probability of giving a correct response is 0.5.

Software used for analyses

For data checking, data management and calculations of sample statistics, statistical software packages SPSS and SAS were used. For the Rasch scaling analysis, the software *ACER ConQuest 4* (Adams, Wu, and Wilson, 2015) was used. *ACER ConQuest 4* provides tools for the estimation of a variety of item response models and regression models. It was used for test calibrations, for generating weighted likelihood estimates (WLE) used for the score-equivalence tables, and for drawing plausible values (PVs) based on a multidimensional item response model with latent regression. The marginal maximum likelihood (MML) estimation method was used for test calibrations and in generating the plausible values. When calibrating items from multistage adaptive test design, MML estimation method produces unbiased estimates (Eggen & Verhelst, 2011; Adams & Lazendic; 2013).

4.3 Stage One Analyses for Paper Tests Based on Item Calibration Sample and Equating Samples

Sequence of analyses

Analyses for paper-based test data were undertaken in the following order:

- Item and test analyses based on item calibration sample data (treating 'not reached' items as 'not administered' to obtain appropriate estimates of item difficulty). No weights were used.
- Checking of item characteristics using classical statistics such as item facilities (*p*-values) and distractor analysis. A review of the outcomes of Rasch analyses including checks of item fit, item spread, test targeting, and differential item functioning (DIF) analysis.
- Horizontal equating using the equating data.
- Vertical equating based on common items in tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9).
- The combination of results from the horizontal and vertical equating for putting each 2018 domain scale onto the NAPLAN domain scale.
- The generation of student weighted likelihood estimates (WLE) to obtain score equivalence tables.
- The transformation of logit scores into NAPLAN reporting scale scores.
- The generation of plausible values for the national scientific sample.

- The analyses to obtain preliminary results on the NAPLAN scale based on the national scientific sample data. Student weights were used in the calculations of preliminary statistics.
- The calculation of standard errors for student summary statistics that took into account sampling, measurement, and equating errors.

Item coding

The recoding of test data was done prior to data analysis.

In 2018, data for multiple-choice items were indicated by the letter of the chosen response option for each item, i.e., A, B, C, D, or E. Responses for students not participating on a particular test were recoded to Rs and treated as missing. Multiple responses (7s) were treated as incorrect. Embedded missing responses were coded as 9 by the TAAs and treated as incorrect. Trailing missing responses were also coded as 9 for the first unanswered item and treated as incorrect, while the remaining trailing missing items were recoded as Ms and treated as "not reached". These not-reached items were treated as missing values for item calibration to obtain an appropriate estimate of the item difficulty (for students who had a chance to respond). However, these omits were treated as incorrect for the final estimation of student abilities.

Data for partial-credit items were indicated by ordered categories starting with 0 up to the maximum possible value. Short-answer items were given scores of 0 or 1. The rules for data recoding are provided in Table 5.1 in the next chapter.

Item calibration

The outcomes of the Rasch analyses, including item and test characteristics, are provided in Chapter 5 and Appendices C and D. The goodness of fit for individual items was based on the Mean Square Statistics. The statistical information regarding item characteristics provided includes:

- Item facility, expressed as percentage correct for each relevant year level.
- Item location on individual year level scales.
- Test targeting and item spread.
- Information about the fit of the item to the Rasch model specified.
- Plots for assessing potential differential item functioning (DIF).
- Information on the consistency of the functioning of link items between adjacent year levels.

Review of test and item characteristics

ACER ConQuest provides statistics for each individual item in tabular form with statistics for response categories. The information provided includes the number of students taking the test item, item discrimination (which is equivalent to the correlation between the correct item category and the corrected total score), the item difficulty parameter and the weighted mean square (Infit) fit statistic. Other information provided in the tables includes scoring for each category (responses and other codes, such as missing or not reached), the number and percentage of students in each category, the point biserials for each category (correlation with

the corrected total score) and their *t*-values, as well as the average ability estimates of students in each category and their standard deviation. These statistics were used for item review in conjunction with the item characteristic curves (ICC), which show the modelled and empirical curves and distractor behaviours for multiple-choice items. Distractor curves were studied for problem items. This process is described in greater detail in Chapter 5.

In the calibration for each test, the item difficulties and the distribution of student abilities were presented on the same scale. These can be examined visually in the item variable maps provided by *ACER ConQuest*. The reliabilities of the NAPLAN 2018 tests are reported in Chapter 5.

Differential Item Functioning Analysis

Differential item functioning (DIF) occurs when an item is substantially harder for one group than for another group after their relative performance in the domain tested has been taken into account.

A general problem of DIF analysis is to determine the point below which differences are not significant. With large sample sizes, most of the differences will appear to be statistically significant but may not be of practical importance or substantial in size. Under such circumstance, rules of thumb were used to determine whether there was substantial DIF present for a particular subgroup.

DIF in the test items was examined for gender, LBOTE and Indigenous groupings. With five domains and four year levels for each of the three subgroup pairs (for writing, four year levels were analysed together), a decision was made to first examine DIF in the subgroups using scatter plots of adjusted item parameters. Separate Rasch calibrations were performed over the same set of items for the subgroups. The mean item difficulty in each of the two independent sets of item parameters was centred at zero. One set of item parameters was then plotted against the other set of item parameters. Each item is represented by one point on the plot. A diagonal line was plotted as the reference line. If the relative item difficulty for an item is the same in the two groups after taking their relative performance on the test into account, the point representing the item will be on the diagonal. The further the distance that point is from the diagonal, the larger will be the size of the DIF.

DIF was also examined using *ACER ConQuest* by analysing the data based on a multi-facet model by adding an item-by-subgroup term.

In addition to the DIF analysis of student subgroups, item differential functioning across jurisdictions was also examined. The results are shown in section 5.6.

Vertical reporting scales

NAPLAN reporting in each of the five domains is based on a vertical reporting scale spanning Years 3, 5, 7 and 9 for that domain. Each year the scales have been used by jurisdictions to report to parents and schools and for national reporting of student performance on the NAPLAN tests. The NAPLAN 2018 tests were equated onto each NAPLAN domain scale through a combination of vertical equating across the year levels and horizontal equating to the historic scale.

<u>Reading, Spelling, Grammar and Punctuation, and Numeracy</u>

Each of the reading, spelling, grammar and punctuation, and numeracy vertical preliminary scales across Years 3, 5, 7 and 9 was constructed and equated to the NAPLAN vertical scale established in 2008. The equating was performed through: horizontal test equating based on the equating sample data; and vertical equating using linking items embedded in the 2018 tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9), based on the 2018 calibration sample data. Specifically, the transformation needed for each domain score was calculated based on the equating constants determined from the horizontal and vertical equating in combination. The methodology and results of the equating are described in Chapter 6, and scale transformations are described in Chapter 7.

Writing

In 2018, while the writing tasks were different for Year 3/5 and Year 7/9 and for Day 1 and Day 2, the resulting scripts were rated using the same set of ten criteria. The data from all four year levels were analysed concurrently to construct the vertical writing scale. The writing analysis was based on the Partial Credit model, a polytomous extension of the Rasch model. The equating of the 2018 writing scale to the 2017 writing scale was conducted using the pairwise-comparison method. The results were checked against those from the common-item equating method. The results of the equating are discussed in Chapter 6. Appendix K provides details of the pairwise-comparisons.

Scoring and generation of PVs

The raw scores for each student on the five domains were calculated. Omitted responses were scored as being incorrect. Score-equivalence tables based on WLEs in logits were generated for each test in each domain based on delta-centred item parameters. Transformations were applied to the logit scores for conversion to NAPLAN reporting scale scores on the historic NAPLAN scales.

The jurisdictions were provided with the transformed score-equivalence tables for rapid generation of student and school reports. The score-equivalence tables provided the means for Test Administration Authorities to locate individual students on year level specific reports using the raw scores for each test.

For the estimation of population statistics, rather than using the WLE estimates, five sets of PVs of student latent proficiency estimates were drawn using *ACER ConQuest* based on imputation techniques and a multidimensional item response model with latent regression for students in each of the year levels for each of reading, spelling, grammar and punctuation and numeracy. The conditioning variables used for the paper-based tests were gender, LBOTE status, Indigenous status, school sector, geolocation, parents' education and occupation and school WLE reading mean. The PVs for writing were drawn for Years 3, 5, 7 and 9 concurrently, conditioning on year level, and the school WLE writing mean was used in the conditioning instead of the reading mean. For each student, the school mean was calculated excluding that particular student. The conditioning on background variables increases the precision of population estimates and allows the analysis of relationships between proficiency estimates and background variables. The PVs were drawn separately for each jurisdiction for all students (including absent students and withdrawn students) except for students who were exempt from NAPLAN testing.

National NAPLAN Reporting Scales and Proficiency Bands

A linear transformation was applied to the logit scores in each domain. The transformation for each domain score was based on standardisation procedures established in 2008 and the equating constants estimated from the horizontal and vertical equating, with the result that all five domain scales were put on the NAPLAN historical scales. These scales share the same set of cut-points separating the bands. The cut-points in scale scores established for NAPLAN 2008 were used in 2009 through 2018 to ensure comparability of results across time.

Preliminary performance information based on the National Scientific Sample

For reporting to parents, the national means, standard deviations, the 20th percentiles and the 80th percentiles for each domain and each year level were calculated using the 2018 National Scientific Sample, with weights applied. Preliminary percentages in bands were also estimated for each domain and each year level. All the statistics obtained were expressed on the NAPLAN Reporting Scales.

4.4 Stage One Analyses for Online Tests Based on online Item Calibration Sample

Sequence of analyses

Analyses for online test data were undertaken largely in the following order:

- Item and test analyses based on online item calibration sample data.
- Checking of item characteristics and distractor analysis. A review of the outcomes of Rasch analyses including checks of item fit, item spread, and test targeting.
- Checking of item parameters to support production and release of the School and Student Summary reports (SSSRs) to online participants shortly after testing. Comparisons of online item parameters to the pre-scaled item parameters (on NAPLAN historic scales) supplied by ACARA Vertical equating based on common items in tests of adjacent year levels (Year 3 and Year 5, Year 5 and Year 7, Year 7 and Year 9) and review of the linking items. The generation of student weighted likelihood estimates (WLE) to obtain score equivalence tables for comparisons to those based on pre-scaled parameters. Finalising parameters and score equivalence tables for delivery to ACARA for the generation of SSSRs.
- Equating of the online tests to the paper-based tests based on common items between paper and online tests. The methods and results of the equating are described in Chapter 6.
- The generation of plausible values for the online participants.

Item coding, Item calibration

The rules for data recoding for online data follow those of the paper data. Responses for non-administered missing (for items not in the administered testlets) were recoded to Rs. These were treated as missing both in calibration and in scoring.

Items from all testlets within a domain and year level were calibrated in a concurrent analysis based on the Rasch model using the MML estimation method as in the calibration of paper items. The outcomes of the analyses, including item and test characteristics, are provided in Chapter 5 and Appendices C and D. Review of test and item characteristics was carried out as was done for the paper tests.

Scoring and generation of PVs

Scoring and the generation of score-equivalence tables based on WLEs in logits were generated for each test path for each domain in each year level based on delta-centred item parameters. Transformations were applied to the logit scores for conversion to NAPLAN reporting scale scores on the historic NAPLAN scales just as was done for paper tests.

As was done for the paper tests, PVs of student latent proficiency estimates on the online tests at each of the year levels for each of reading, spelling, grammar and punctuation and numeracy were drawn using *ACER ConQuest* based the multidimensional item response model with latent regression. With the online cohort, the PVs were drawn concurrently for the six participating jurisdictions. Hence, jurisdiction was added to the set of conditioning variables in the generation of PVs as background data for online students. Another conditioning variable that was only added specifically for online grammar and punctuation (G&P) was information about which test the student sat as that was determined by their third testlet in the reading test. This was considered important background information which would improve the drawing of PVs for G&P.

The PVs for writing were drawn for online students in Years 3, 5, 7 and 9 concurrently as for the paper students. The PVs were also drawn concurrently for the six participating jurisdictions, with jurisdiction added to the set of conditioning variables.

4.5 Stage Two Analyses Based on Census Data

Using item parameters, scaling information and models as described in the stage one analyses, five sets of PVs were drawn for students in each of the year levels and each of the domains. The conditioning variables used were as described in section 4.3 for students who sat for the paper-based tests and in section 4.4 for students who sat for the online 'tailored' tests. The PVs from the full cohort (combining both students who sat for the paper-based tests and students who sat for the online tests) were analysed to produce national and jurisdiction results, for the summary report and the NAPLAN 2018 National Report. The National Report also included results on subgroups.

4.6 The Estimation of Standard Errors

NAPLAN results from census data were reported with standard errors that included both measurement errors and sampling errors. The inclusion of sampling error might be considered surprising in that all students in the target year levels were included in the assessment.

However, the aim of NAPLAN is to make inference about trends in the educational systems over time and not about the specific student cohorts in 2018. In addition, even in census assessments there is a certain amount of non-response that must be taken into account.

The measurement errors are estimated using the multiple sets of plausible values. In general, secondary analyses with plausible values can be described as follows. If θ is the population parameter and θ_i is the statistic of interest computed on one set of plausible values, then:

$\theta = \frac{1}{M}\sum_{i=1}^{M}\theta_i$, with M being the number of sets of plausible values.

The plausible values also allow the computation of the uncertainty in the estimate of θ due to the lack of precision of the test. If a perfect test could be developed, then the measurement error would be equal to zero and the five statistics from the plausible values would be exactly identical. Since no test is perfect, the five sets of statistics would not be identical. The measurement variance is estimated as:

$$B_M = \frac{1}{M-1}\sum_{i=1}^{M}(\theta_i - \theta)^2$$

It corresponds to the variance of the five plausible value statistics of interest. The final stage is to combine the sampling variance and the imputation variance as follows:

$V = U + \left(1 + \frac{1}{M}\right) B_M$, with U being the sampling variance.

Sampling error was considered at both the student and the school level. At the student level there is a random element from one year to another in respect of having different age cohorts at each year level. At the school level it needs to be considered that schools may be closed from one year to another or new schools may be opened.

The Taylor Series Linearization method (Wolter, 1995; Levy and Lemeshow, 1999) was used to construct an approximation to the functional form of the estimated population characteristic that is a linear function of the original observations and hence is amenable to construction of a variance estimator.

The process of *linearization* or *Taylor series variance estimation* involves several steps. To look at a simple case, consider a population characteristic θ and assume that there exists an estimator $\hat{\theta} = f(x, y)$ such that the variables *x* and *y* are linear functions of the sample observations but that $f(x, y)$ is *not* a linear function of the sample observations. The next step is to use a first-order Taylor series to approximate $f(x, y)$. This results in an approximation that is linear in the variables *x* and *y*, and hence, linear in the sample observations. The final step is to take this linear approximation, identify the sample design, and apply the design-based formula to estimate the variance (Levy & Lemeshow, 1999).

Taylor series variance estimation can be done using commercially available statistical software. For NAPLAN 2018, the complex sample module implemented in the SPSS software package and the procedure *Proc Surveymeans* in the SAS software package were used in parallel processing for checking. Macros were written in both SPSS and SAS to combine the estimates of sampling error with the estimates of measurement error to obtain final standard errors for the performance statistics reported for the census data. The standard errors were used to determine statistical significance in mean differences in NAPLAN 2018 performance in the reports.

Three additional sets of standard errors were calculated; one set for the comparisons of means across 2008 (the baseline year) and 2018 for reading, spelling, grammar and punctuation and numeracy tests and across 2011 (the baseline year) and 2018 for writing; one set for the comparisons of means across 2017 and 2018; and, one set for the comparisons of means across 2016 and 2018. These took into consideration, in addition to sampling and measurement errors, the errors due to the equating of measurement scales across years. See section 6.6 for a discussion of the estimation procedure used to calculate the standard errors of equating.

The calculation of effect size for census data

All significance testing in NAPLAN is accompanied by an effect size measure, which indicates the magnitude of any change. The effect size for differences in means is given by *Hedge's g*, whose formula is:

$$g = \frac{m_2 - m_1}{s_p}$$

where m_1 is the sample mean of the first group, m_2 is the sample mean of the second group, and s_p is the pooled standard deviation, i.e. the square root of the pooled within-groups variance, weighted by number of cases in each group

$$s_p = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}}$$

where n_1 and n_2 are the number of cases in group 1 and 2, respectively, and s_1^2 and s_2^2 are their variances. This formula is known to yield a biased estimate for the population value and is corrected using the following formula:

$$g_{unbisased} = g_{biased}\left[1 - \frac{3}{4(n_1 + n_2 - 2)}\right]$$

CHAPTER 5 TEST CALIBRATIONS

This chapter describes the data preparation process, test calibration outcomes. The outcomes for differential item functioning (DIF) analysis of the paper items were also included.

5.1 Data Preparation

ACER received the online test data extracted from the platform directly from ACARA by domain as they became available. With each round of data extraction and delivery via the ACARA's secure File Transfer Protocol (FTP) site, data integrity check was carried out to make sure that the online data files conformed to their data dictionary and coding conventions (supplied by ACARA) and the checking of item responses in the data files conforming to the valid codes specified in the code frames.

As in previous years, each TAA prepared its jurisdiction data for the paper-based tests according to a common codebook provided. Each TAA prepared four data files in ASCII format, one for each year level. The data files were uploaded to ACARA's FTP site. The data were identified at the school level and delivered with school information necessary for the calculation of weights. This made it possible to calculate the weights for each school and for each jurisdiction.

Data Checking

All data files were checked for invalid codes and inconsistencies. Data were cleaned and recoded as part of the central data analysis process. Any concerns about data were communicated to ACARA and the TAA and rectified as necessary. Recoded data files were generated and verified in preparation for data analysis. This was carried for both the paper-based tests and the online tests.

Rules for Data Recoding

Table 5.1 lists the test participation codes used in the data files and the rules for recoding the response string for each test. The list applied to both paper-based tests and online tests.

Papered-based language conventions was one test but reported as two domains. There were students who attempted only the spelling part or only the grammar and punctuation part. For the purpose of calibration, the unreached-missing coding was done separately for spelling and grammar and punctuation. A code of 9 was only used for the first of the unreached missing response, and the remaining missing values were recoded to M. The code of 9 was also used for embedded missing responses.

Missing data were not expected for writing. Students who were present but did not write anything (blank booklet) had their ratings coded as a string of 9s by the TAAs. These were then all recoded to M.

Table 5.1. Rules for Data Recoding

Participation Code	Data Recoding Rule
P – Present	Data string (i.e. item responses) expected. Any embedded missing responses are indicated with 9s by the TAA, invalid responses with 7s. The first trailing missing response is to be kept as a 9; subsequent trailing-missing responses are unreached missing responses, and are to be recoded as Ms. Any embedded missing responses within the data string are kept as 9s. Students who are present but do not attempt any question will have a string of Ms. Additionally, for the online tailored test data, responses for items in testlets that were not administered to the students are recoded as a strings of Rs.
A – Absent	A data string of all 9s for that test was expected from the TAA. Item data are recoded as a string of Rs (this is like not-administered).
S – Sanctioned Abandonment	This is specifically used to indicate students who unexpectedly abandon the test due to illness or injury. See National protocols for Test Administration section 5.5. There may be data, but these students will be treated as absent. All item data are recoded as a string of Rs.
W – Withdrawn	A data string of all 9s for that test was expected from the TAA. See National protocols for Test Administration section 5.4. These students are treated as absent. Item data are recoded as a string of Rs.
E – Exempt	A data string of all 9s for that test was expected from the TAA. See National protocols for Test Administration section 5.2. These students are not included in the calibration or in the calculation of means. Item data are recoded as a string of Rs.

5.2 Test Calibrations

For the paper-based tests, the item calibration sample for each year level was a sub-sample drawn from the National Scientific Sample. Senate weights were not used for item calibration. To ensure each state/territory was equally represented, a simple random sample was drawn from each state/territory's scientific sample to match the sample size of the state/territory with the smallest sample (Northern Territory). The paper-based reading, spelling, grammar and punctuation and numeracy tests were calibrated separately by domain and year level, resulting in 16 separate calibrations.

For the online tailored tests, for each domain and year level, the calibration sample was a sub-sample randomly drawn from all the available online data collected, with equal contribution of students from each of the six participating state/territory. The sub-sample data were used for calibration and equating purposes. For each of online reading, spelling, grammar and punctuation and numeracy tests, items from all testlets within a domain and a year level were calibrated in a concurrent analysis, also resulting in 16 separate calibrations. The calibration of online grammar and punctuation was conditioned on which test the student sat (one of three) as that was determined by their third testlet in the reading test.

In the estimation of parameters, all responses (R) from a non-participating student (absent, withdrawn and exempt) were treated as missing. For participating students, the embedded missing response (9), the first trailing missing response (9) and the invalid response (7) were treated as wrong. Trailing missing responses (M) beyond the first were treated as missing during calibration. Non-administered item data (R) on online tests were treated as missing

data for calibration and not considered in all analyses.

For 2018 writing, there were two sets (for Day 1 and Day 2) of two writing tasks (Year 3/5 and Year 7/9 prompts). The resulting scripts from students who responded on paper or online from the four different tasks were rated using the same marking rubric based on the ten criteria. The writing test data from Years 3, 5, 7 and 9 were calibrated concurrently, based on the partial credit model with the latent distribution conditioned on year level. The calibration results were compared to parameters from previous NAPLAN cycles.

All calibrations were conducted using *ACER ConQuest*.

The Rasch item parameter estimates and statistics are summarised in Appendix B for each of the 17 paper-based tests (with writing) and the online items in each of the 16 item pools for the tailored tests. The item parameters shown in these tables are delta-centred for each test. The 95% confidence interval from ConQuest output for the expected value of the Infit mean square is also provided for each item.

5.3 Test Reliability and Average Item Discrimination

Test Reliability

Table 5.2 shows the coefficient alpha of each paper-based test. It should be noted that the language conventions test is reported as two domains for each year level: (1) spelling and (2) grammar and punctuation with 25 items each. While spelling items are in a constructed response format, grammar and punctuation items are in a multiple-choice format for Years 3, 5 and 9 while Year 7 test include 2 constructed response items.

The coefficient alphas are between 0.78 and 0.87 for the paper reading tests, between 0.89 and 0.91 for the spelling tests, between 0.70 and 0.75 for the grammar and punctuation tests and between 0.89 and 0.90 for the numeracy tests. The reliability for the writing test is 0.96. The reliabilities are generally high with the exception of the reliabilities for the grammar and punctuation tests. The shorter multiple-choice tests may explain the slightly lower reliability for the grammar and punctuation tests.

Table 5.2. Coefficient Alpha for NAPLAN 2018 Paper Tests

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy	Writing*
Year 3	0.80	0.91	0.70	0.89	0.96*
Year 5	0.78	0.91	0.68	0.90	
Year 7	0.87	0.91	0.75	0.90	
Year 9	0.86	0.89	0.71	0.90	

*For Years 3, 5, 7 and 9 together

The coefficient alpha of the online tailored test calculated from the data would not give a good indication of the reliability as each tailored test was targeted to the students assigned the test, so the group of students sitting for each test was from a narrow range of abilities. Homogenous sample tend to result in low alpha which does not give a true indication of the reliability of the test.

Average Item Discrimination

Table 5.3 shows the average item discriminations for the paper-based reading, spelling, grammar and punctuation and numeracy tests. The average item discriminations for the reading tests range from 0.28 to 0.32. The spelling tests have the highest average item discriminations, ranging from 0.48 to 0.53. The averages for the grammar and punctuation tests are between 0.24 and 0.30, and those for the numeracy tests are between 0.39 and 0.42.

For the writing test, a small number of highly correlated, polytomously scored criteria used in scoring across the span of grade levels usually result in high average item discrimination, 0.84 in 2018.

Table 5.3. Average Item Discrimination for NAPLAN 2018 Paper Tests

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy	Writing*
Year 3	0.30	0.53	0.28	0.42	0.84*
Year 5	0.28	0.52	0.24	0.42	
Year 7	0.32	0.52	0.30	0.39	
Year 9	0.32	0.48	0.25	0.39	

*For Years 3, 5, 7 and 9 together

The item discrimination indices of the online tailored test items calculated from the adaptive test data from homogenous sample groups would not give a good indication of the item discrimination. Hence discrimination indices are not reported for online items.

5.4 Test Targeting and Item Spread

The purpose of the variable map (or Wright map) is to compare the distribution of student locations (on the left side of the map) and the item thresholds (on the right side of the map). Item, step and person parameters are plotted on a common scale on a variable map. Appendix C provides the variable maps for each domains at each year level for the paper tests and online tests. Please note that for the online tests, the maps are not for particular specific test but displaying the distribution of student locations against the item difficulties of all the items (in all testlets) within the domain online item pool at a year level.

For dichotomously scored tests, the maps are constructed so that a student has a 50% chance of answering an item correctly when the item is at a difficulty level that is at the same level as the student's ability. On each variable map, the mean of the item estimates was centred at zero. Students at the top end of the distribution have higher proficiency estimates, while items at the top end are the more difficult items.

Figure 5.1 displays the variable map for paper-based Year 3 numeracy. That variable map indicates that the current test had targeted the average numeracy achievement level of the student group quite well. The distribution of student abilities (each X represents approximately 5 students) matches up well with the distribution of item difficulties.

For the polytomously scored writing tests, the criterion difficulty of each of the ten rating criteria is plotted in the middle panel with the latent ability distribution on the left-hand side. The right-hand panel of Figure 5.2 shows locations of the Thurstonian thresholds of each item. The notation *a.b* indicates threshold *b* of criterion *a*. The location of the threshold indicates the ability level required for a student to have 50% chance of achieving category *b* or better on criterion *a*. The variable maps show that the thresholds are well spread out and well separated.

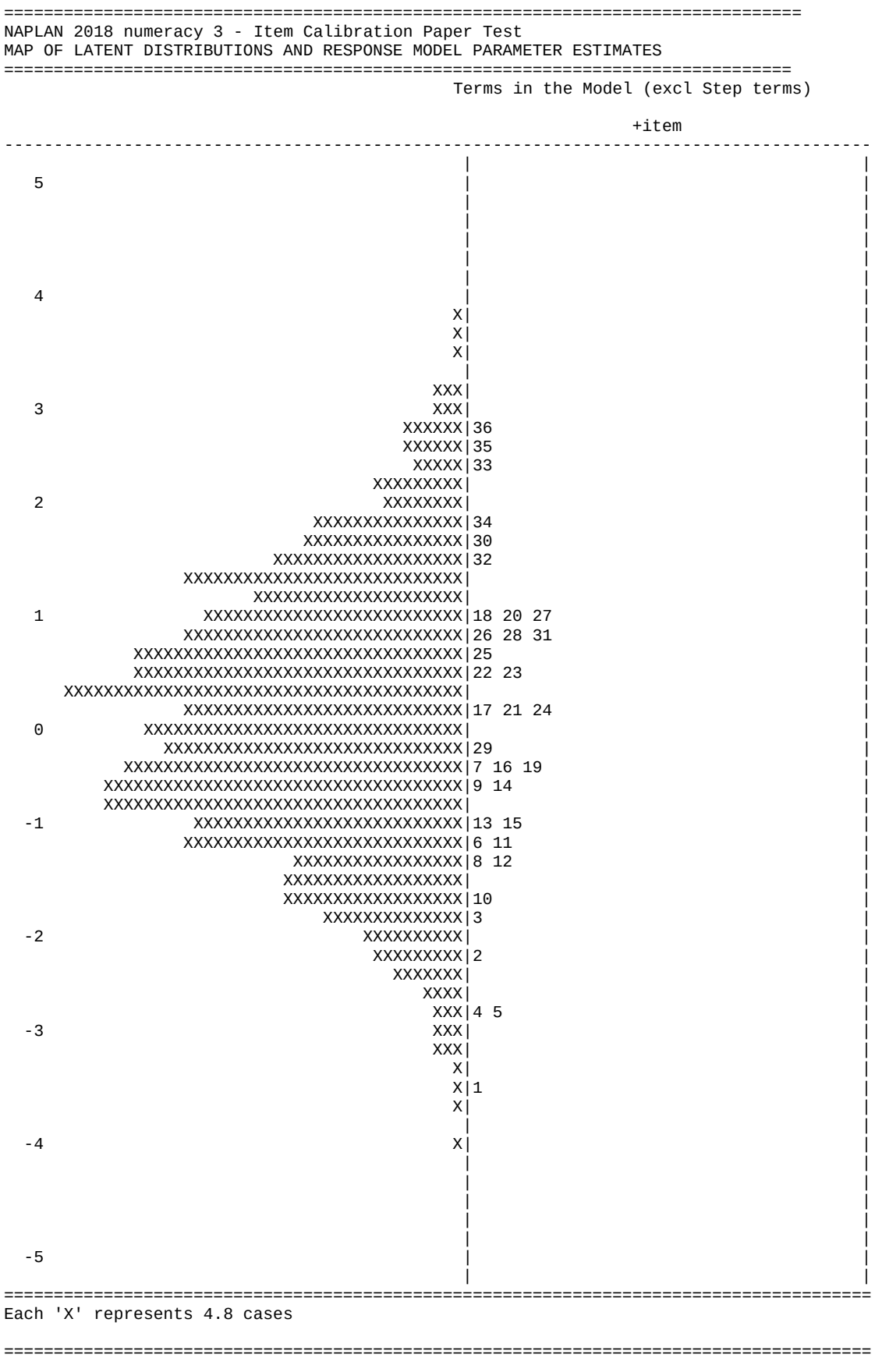

Figure 5.1 Wright map for Year 3 Numeracy (an example)

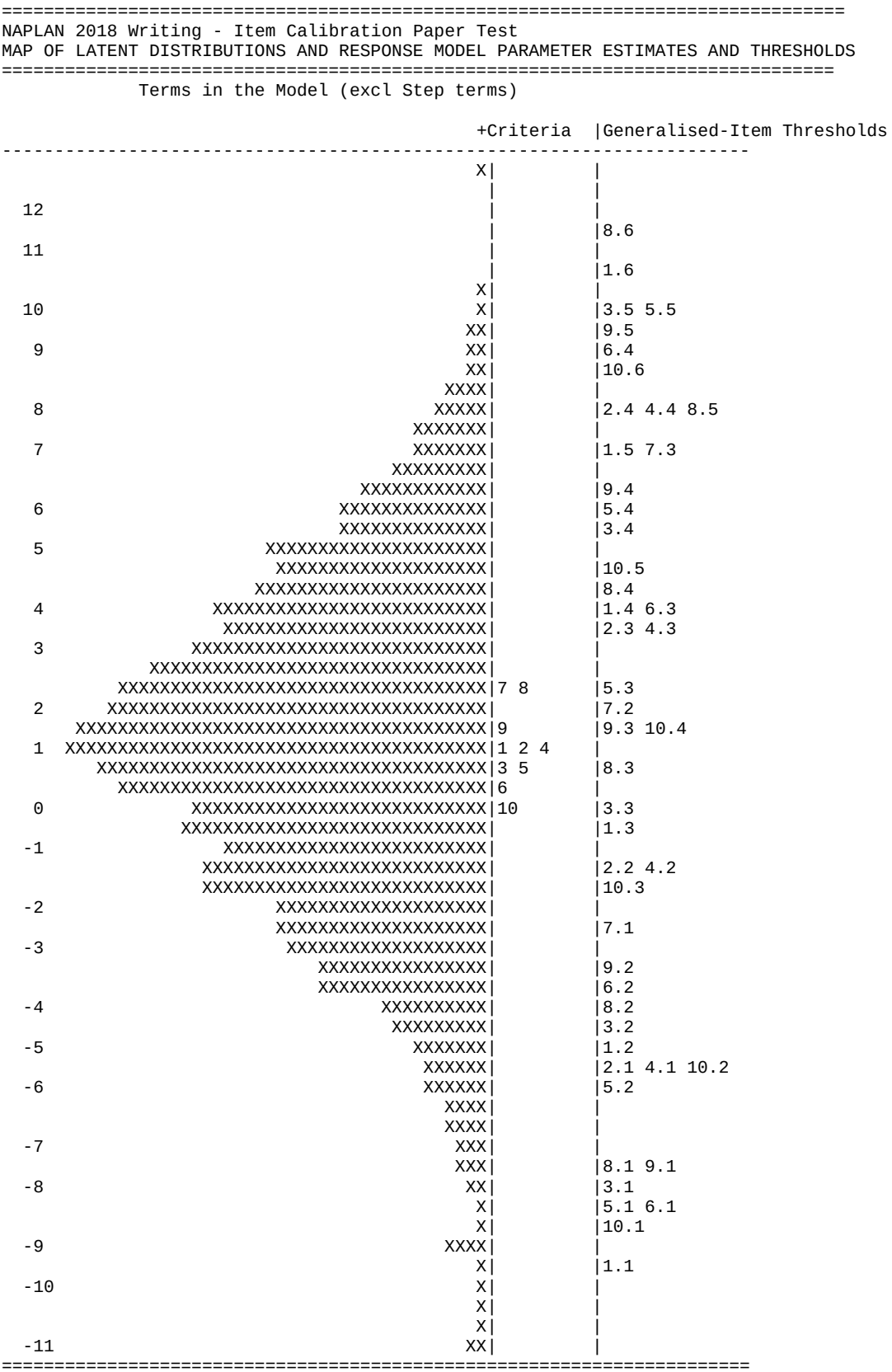

Figure 5.2. Wright map for Writing (a polytomous example)

For online tailored tests, since the design was to improve test targeting to individual student ability, it is not necessary for item spread within a tailored test to be as wide as a fixed test designed for all students. Each tailored test would actually cater for a narrower range of student abilities. Figure 5.3 presents an illustrative example. The figure shows the information function for the NAPLAN 2018 easy Year 5 reading test path (A1B1C1). The information function is plotted in a blue curve and the standard error of measurement in an orange curve. The peak of the information function corresponds to the lowest standard error. This peak shows the range on the scale at which the test information is highest and the standard error of measurement is lowest. When moving away from this peak in either direction along the scale, the test information decreases and the standard error of measurement increases. The student ability distribution is shown in a bar below the horizontal axis with the mean, the 5th and 95th percentiles indicated on the bar. The peak of information function for this easy path (A1B1C1) corresponds to the middle of the ability distribution, indicating that the test is well targeted to students allocated to this pathway.

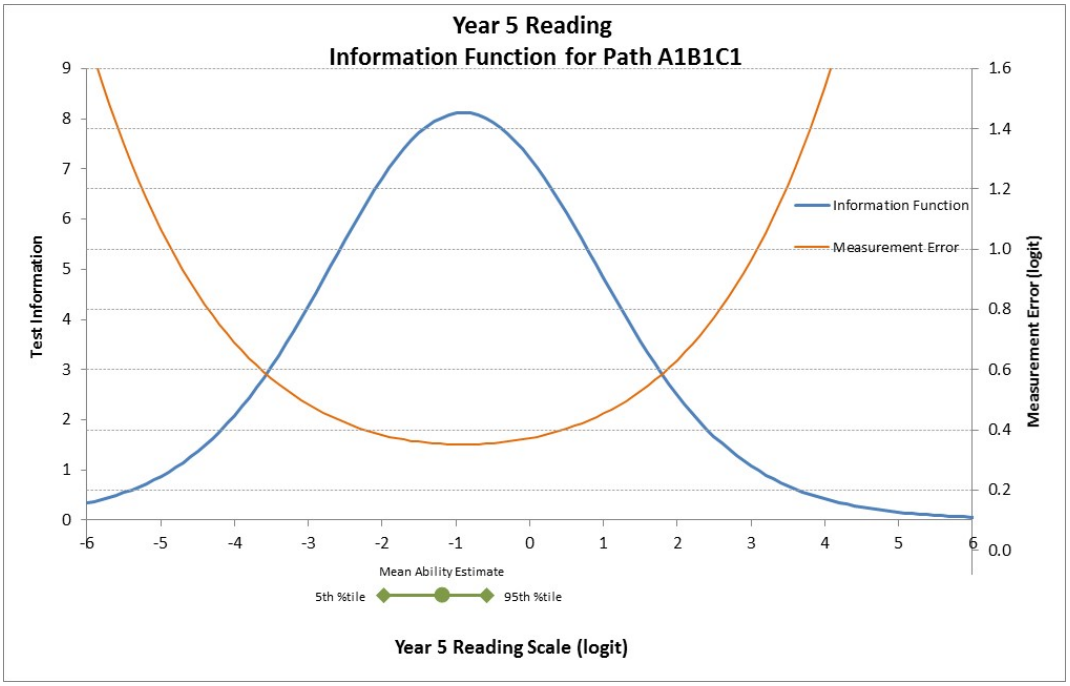

Figure 5.3. Year 5 Reading Information Function for Test Path A1B1C1

5.5 Item Fit

The evaluation of goodness of fit to the Rasch model for individual items was based on the weighted mean square (Infit mean square) statistics. Infit compares the actual residuals to how much of the variation is expected if the data fit the model. A value greater than the expected value of 1.0 indicates that the item responses contain a greater amount of variability than expected by the model, and a value below 1.0 indicates that the consistency between observed data and model-based predictions is better than expected. We used an Infit value of 1.20 as the criterion value for evaluating the goodness of fit of each item, i.e., Infit values greater than 1.20 indicate item under-fit. We also calculated classical item statistics (i.e., discrimination and facility) for the purpose of item fit evaluation, specifying criterion values for discrimination (based on item-rest score correlation) less than 0.25 and facility outside the

range of 0.10 to 0.90. Values of the Infit mean square and classical item statistics of each item can be found in Appendices B and C for the paper-based tests and online tests.

As mentioned in section 5.2., the ICC of each item shows a comparison of the empirical ICC based on observations from ten equal-size ability groupings (broken line joining 10 dots) and the expected model-based ICC (smooth line), and the two curves should display small or no disparities for an item that has a good fit to the model.

Reading, Spelling, Grammar and Punctuation, and Numeracy

Item fit to the Rasch model was closely examined for reading, spelling, grammar and punctuation and numeracy at each of the four year levels. As all items were trialled and examined previously, few items should show misfit. Because of the large size of the calibration sample, the confidence intervals for the Infit mean squares were rather narrow.

As an example, Table 5.4 presents a summay of item statistics in NAPLAN 2018 paper-based tests with the number of items falling into two Infit mean square ranges of less than or equal to 1.20, and greater than 1.20. It also presents the number of items with discrimination less than 0.25 and the number of items with facility outside the range of 0.10 to 0.90. As seen from the table, there were 12 items across 16 tests having Infit greater than 1.20. Regarding classical test statistics, there was a total of 97 items (out of a total 551 items) across the 16 tests with discrimination less than 0.25. There were 20 items with facility higher than 0.90 and 27 items with facility less than 0.10. Figure 5.4 shows the ICC of one reading item (i.e., Item x00093066) with an Infit statistic close to 1.01. In contrast, Figure 5.5 shows the ICC of one reading item (i.e., Item x00093013) with an Infit statistic (i.e., 1.26) higher than the criterion value (i.e., 1.20) for evaluating the goodness of fit of each item. The item parameter estimates and statistics are summarised in Appendix B for each of the 17 paper-based tests (with writing) and the online items in each of the 16 item pools for the tailored tests.

Writing

The evaluation of goodness of fit to the Rasch model for individual writing items was also based on the weighted mean square statistics. None of the criteria exhibited misfit to the Rasch partial credit model except for punctuation and spelling (i.e., 1.45 and 1.23, respectively). Regarding the ICCs, there were not large differences between the empirical and the expected curves for each of the ten criteria.

Table 5.4. Summay of Item Statistics in NAPLAN 2018 Paper Tests

Domain	Year Level	Total Number of Items	Number of Items with Discrimination <0.25	Number of Items with Infit ≤1.2	Number of Items with Infit > 1.2	Number of Items with Facility > 0.90	Number of Items with Facility < 0.10
Reading	3	37	11	37	0	2	0
	5	40	16	40	0	2	1
	7	50	11	49	1	2	3
	9	50	12	50	0	3	3
Spelling	3	25	0	25	0	0	2
	5	25	0	23	2	1	1
	7	25		23	2	0	1
	9	25	0	25	0	0	2
Grammar and Punctuation	3	25	7	24	1	2	0
	5	25	11	25	0	1	0
	7	25	8	24	1	1	0
	9	25	9	25	0	1	0
Numeracy	3	36	0	36	0	1	0
	5	42	1	42	0	2	2
	7	48	5	48	0	1	4
	9	48	6	43	5	1	8

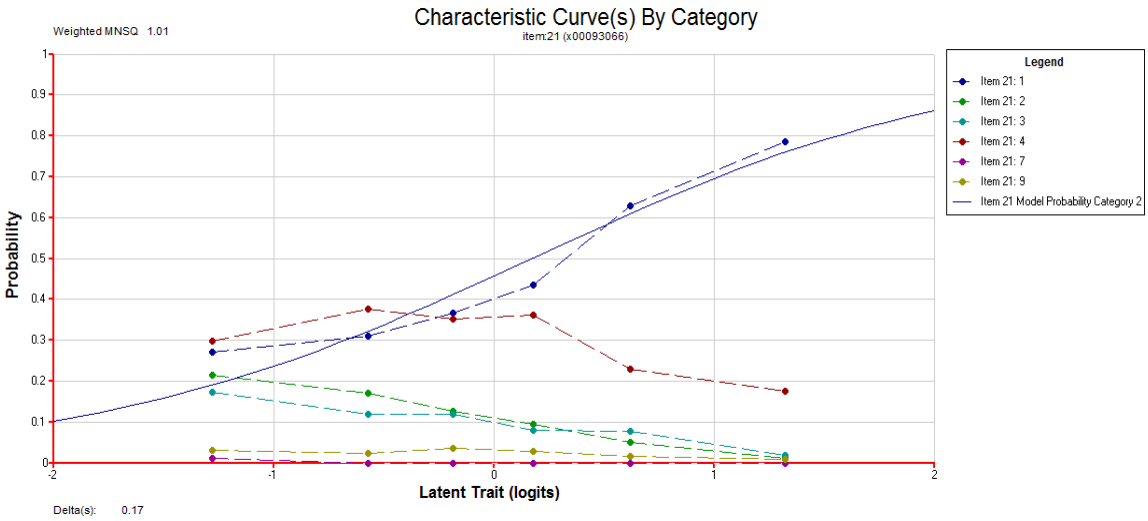

Figure 5.4. Item characteristic curves for an item with Infit =1.01

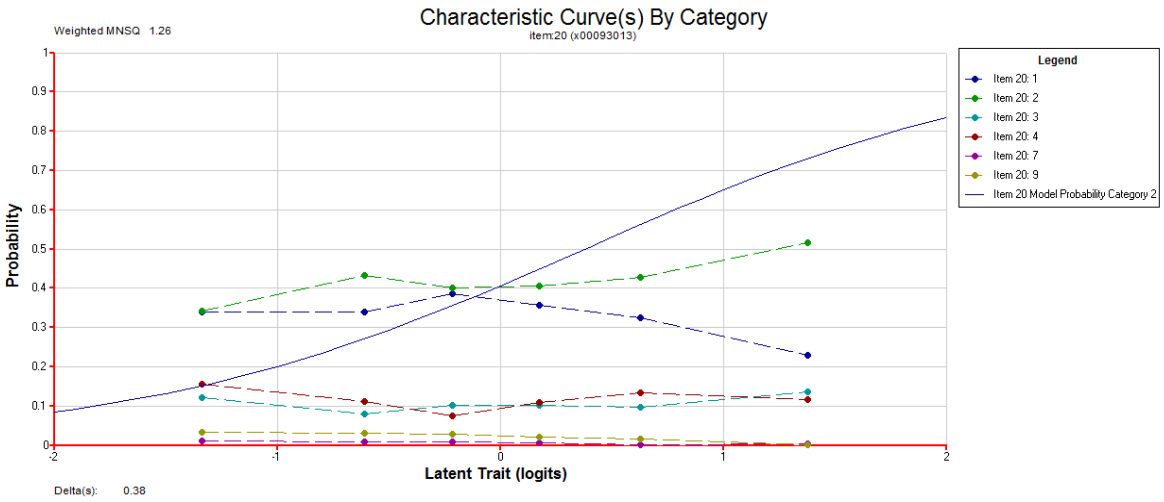

Figure 5.5. Item characteristic curves for an item with Infit = 1.26

5.6 Differential Item Functioning (DIF) Analyses for Paper Tests

The DIF by subgroup and DIF by state/territory analyses were performed only for paper-based tests and not for the online tests. The participating online samples were not representative of the jurisdiction populations and the online tailored tests were made up of testlets assigned based on abilities, subgroup samples can be small and also not representative.

According to Camilli and Shepard (1994), item response theory can be used to assess DIF. Specifically,

> [i]tem characteristic curves provide a means for comparing the responses of two different groups . . . to the same item. A difference between the ICCs of two groups indicates that . . . examinees [for the two groups] at the same ability level do not have the same probability of success on the item. More technically, DIF is said to occur whenever the conditional probability, $P(\theta)$, of a correct response differs for two groups. (Camilli & Shepard, 1994)

In the analysis for NAPLAN, subgroups were arbitrarily categorized as either reference or focal groups. While males, non-LBOTE students, and non-Indigenous students were assigned to the reference group, females, LBOTE students, and Indigenous students were assigned to the focal group for DIF analyses. As mentioned in Chapter 4, independent Rasch analyses were then performed over the same set of items for each subgroup in order to examine any DIF that exists between two subgroups (e.g., males vs. females). The mean item difficulty for each subgroup was centred at zero to adjust for group differences in ability. The difference in the relative item difficulties after adjustment is referred to as the adjusted difference.

For visual depiction of DIF, item locations of the reference group were plotted against those of the focal group as seen from Appendices F, G and H (i.e., gender, LBOTE, and Indigenous status, respectively). Each item is represented by one point on the plot. A diagonal line is plotted as the reference line. If the relative item difficulty for an item is not different in the two groups after taking their relative performance on the test into account, the point representing the item will be on the reference line. The distance of a point from the diagonal reflects the magnitude of DIF. Due to the large sample sizes, confidence bands were very narrow and were not plotted on the charts.

Finally, Table 5.5, Table 5.6, and Table 5.7 summarize the total number of items indicating potential DIF with an absolute adjusted difference of 0.50 or greater for gender and language background (LBOTE), and 0.60 or greater for Indigenous DIF. Figure 5.6, Figure 5.7, and Figure 5.8 are examples of the potential DIF items.

Gender DIF

Appendix D presents the scatter plots for examining gender DIF in the five domains. The plots for reading, spelling, grammar and punctuation, and numeracy are presented by year levels. The writing gender DIF was performed by combining all four grades together. On the whole, the plots indicate that there are few items that exhibit gender differences in the adjusted item estimates and that any differences are not large and thus were not of great concern.

Table 5.5 identifies the number of items that show potential gender DIF with an absolute adjusted difference of 0.50 or greater for reading, spelling, grammar and punctuation, and numeracy. Figure 5.6 shows as an example, one Year 3 numeracy item (Item x00085015) with an absolute adjusted difference of 0.50 or greater. This item with a positive adjusted difference indicates that the item was relatively easier (adjusted difference = 0.94) for male students. Appendix D includes DIF plots that show for each of the items the observed curves by gender group compared to the expected ICC.

Table 5.5. Number of Items Showing Gender DIF by Domain by Year Level (Paper Tests)

Year Level	Reading		Spelling		Grammar and Punctuation		Numeracy	
	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items
3	37	0	25	2	25	0	36	2
5	40	1	25	3	25	0	42	3
7	50	1	25	3	25	0	48	2
9	50	2	25	3	25	1	48	2

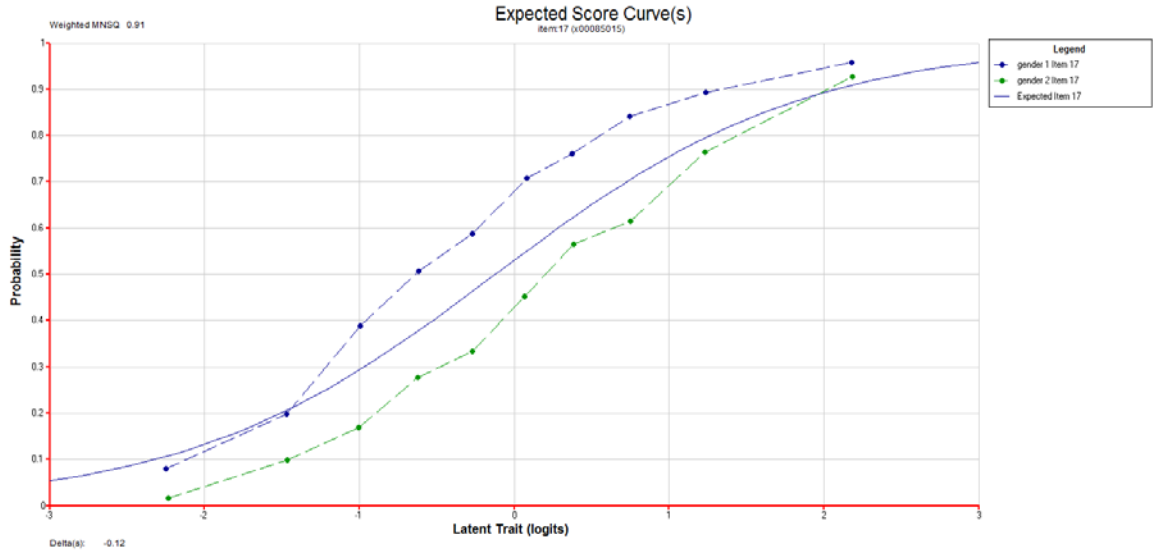

Figure 5.6. Example of item characteristic curves displaying gender DIF†

† 'gender 1' indicates 'Male' and 'gender 2' indicates 'Female'.

LBOTE DIF

Appendix E shows scatter plots for examining DIF due to language background in the five domains by the four year levels. Writing LBOTE DIF was performed by combining all four grades. These plots indicated that there were not many items that showed notable differences in the relative item difficulties.

Table 5.6 indicates the number of items that show potential DIF with an absolute adjusted difference of 0.50 or greater for reading, spelling, grammar and punctuation, and numeracy. Figure 5.7 depicts one spelling item (Item x00090535) with an absolute adjusted difference of 0.50 or greater. This item was relatively easier (adjusted difference = 0.85) for non-LBOTE students.

Appendix E includes DIF plots that show for each of the items, the observed curves by language group compared to the expected ICC.

Table 5.6. Numer of Items Showing LBOTE DIF by Domain by Year Level (Paper Tests)

Year Level	Reading		Spelling		Grammar and Punctuation		Numeracy	
	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items
3	37	0	25	2	25	0	36	0
5	40	0	25	3	25	1	42	4
7	50	1	25	2	25	2	48	5
9	50	1	25	2	25	1	48	4

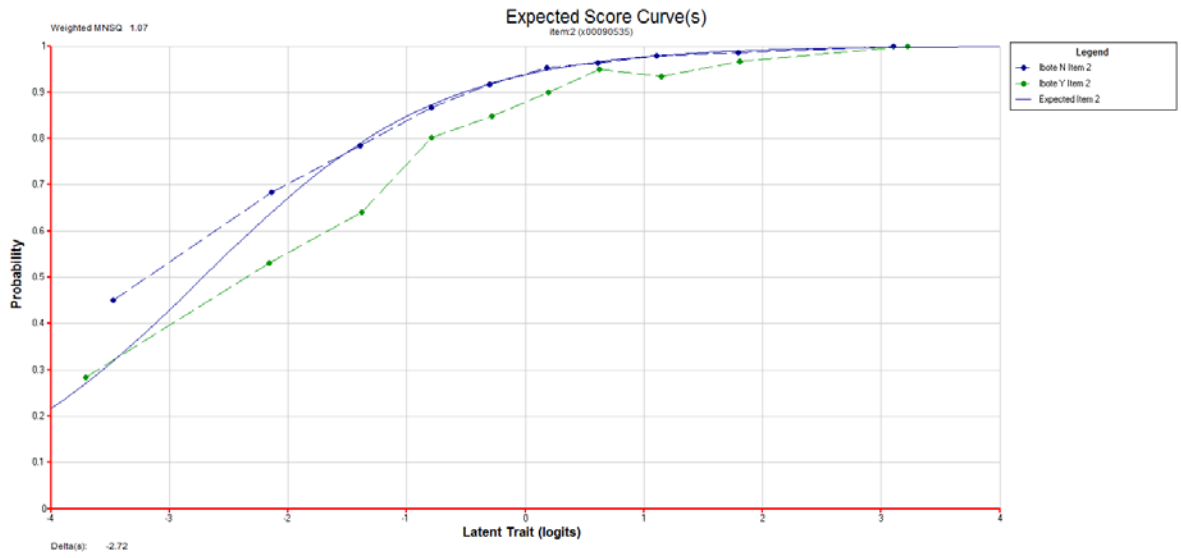

Figure 5.7. Example of item characteristic curves displaying LBOTE DIF†

† 'lbote Y' indicates 'LBOTE group' and 'lbote N' indicates 'Non-LBOTE group'.

Indigenous Status DIF

Appendix F includes scatter plots for examining Indigenous DIF in the five domains. Writing Indigenous DIF was performed by combining all four grades. These plots showed that there were not many items that showed notable differences in the relative item difficulties.

Table 5.7 lists the number of items that show potential Indigenous DIF with an absolute adjusted difference of 0.60 or greater for reading, spelling, grammar and punctuation, and numeracy. The larger threshold (i.e., 0.60 instead of 0.50) was used in order to identify only the items that showed larger DIF. Figure 5.8 depicts one reading item (Item x00072751) with an absolute adjusted difference of 0.60 or greater. This item was relatively easier (adjusted difference = 0.64) for non-Indigenous students.

Appendix F provides the item DIF plots for items listed in Table 5.7. The plots show for each of the items, the observed curves by Indigenous group compared to the expected ICC. In interpreting the plots, it should be noted that there may not be many Indigenous students along parts of the ability range. As a result, one would expect larger variability of empirical probabilities (i.e., the dots connected by dashed lines) about the model-based curve (the solid curves).

Table 5.7. Numer of Items Showing Indigenous DIF by Domain by Year Level

Year Level	Reading		Spelling		Grammar and Punctuation		Numeracy	
	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items	Total of Test Items	Total of DIF Items
3	37	7	25	0	25	5	36	0
5	40	6	25	0	25	5	42	3
7	50	7	25	1	25	6	48	8
9	50	4	25	0	25	2	48	8

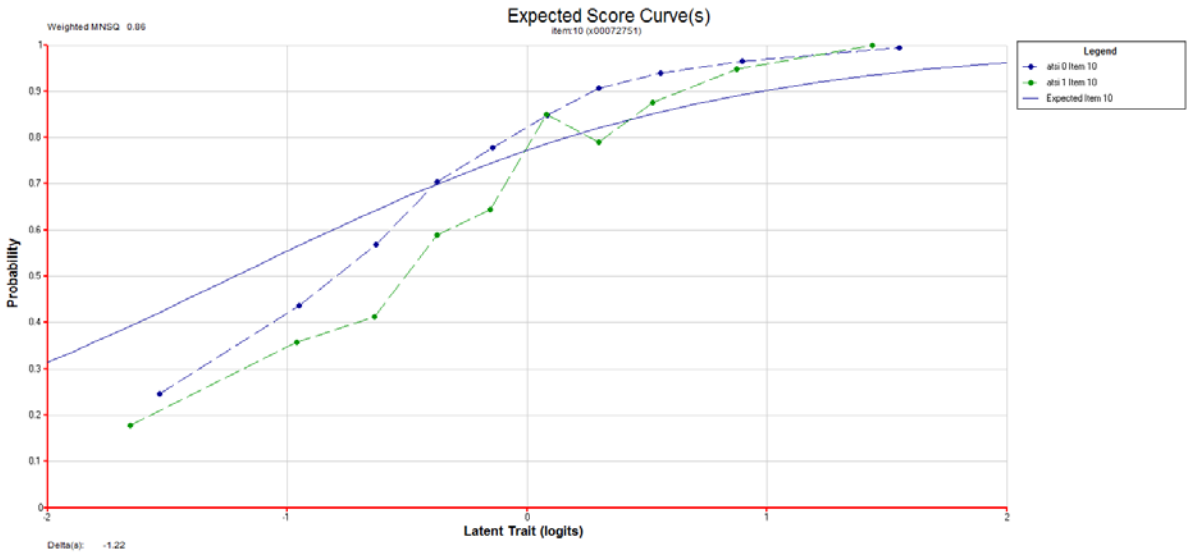

Figure 5.8. Example of item characteristic curves displaying Indigenous DIF†

† 'atsi 1' indicates 'Indigenous group' and 'atsi 0' indicates 'Non-Indigenous group'.

DIF values of individual items for gender, LBOTE, and Indigenous status are presented in Appendix G.

State/Territory DIF

The number of items showing statistically significant state/territory related DIF in paper-based reading, spelling, grammar and punctuation and numeracy are shown in Table 5.8. In the headings of Table 5.8, ‘E’ indicates that the item is relatively easier for the jurisdiction, and ‘H’ indicates that the item is relatively harder for the jurisdiction. There were 13 potential DIF in reading, 3 in spelling, 17 in grammar and punctuation and 32 in numeracy across all four year levels across the jurisdictions. Table 5.8 can be read in conjunction with Appendix G, from which the items showing state/territory related DIF can be identified. For example, from Table 5.8, there were three items in Year 3 reading showing DIF in NT when compared to the national level, with all three items (x00076471, x00078243, and x00076474) being harder for NT, as seen from Appendix G.

Table 5.8. Number of Items Showing State/Territory DIF by Domain by Year Level

Domain	Year Level	ACT		NSW		NT		QLD		SA		TAS		VIC		WA	
		E	H	E	H	E	H	E	H	E	H	E	H	E	H	E	H
Reading	3	-	-	0	0	0	3	0	0	0	0	0	0	0	1	0	0
	5	-	-	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	7	-	-	1	0	0	1	0	0	0	0	0	0	1	0	0	0
	9	-	-	0	0	0	0	0	0	0	0	0	0	1	1	0	3
Spelling	3	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grammar and Punctuation	3	-	-	0	0	0	1	0	0	0	0	0	0	0	0	0	0
	5	-	-	0	0	0	2	0	0	0	0	0	0	0	0	0	0
	7	-	-	0	0	1	0	0	0	0	0	0	0	1	1	0	1
	9	-	-	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Numeracy	3	-	-	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	5	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	-	-	2	0	0	0	1	0	0	0	0	0	0	0	0	0
	9	-	-	2	2	0	0	0	0	0	0	0	0	0	0	2	3

Note. ‘E’ indicates that the item is relatively easier for the jurisdiction, and ‘H’ indicates that the item is relatively harder for the jurisdiction.

To examine the state/territory DIF for the writing test, the expected score curves of ten rating criteria were plotted for the eight states/territories in Appendix H. None of the criteria showed notable differences across states/territories.

CHAPTER 6 EQUATING PROCESS

The delivery of the online "tailored" tests alongside the paper-based tests for the first time in NAPLAN 2018 presented new challenges in data analyses including the equating of the online tests to the paper scales and then to the NAPLAN historic scales. About 15% of the students sat for the online tests and about 85% the paper tests. This chapter will first describe the process of equating to the NAPLAN historic scales for the paper tests followed by the process of equating the online tests to the paper tests and the final equating process to the NAPLAN historic scales.

NAPLAN results are reported using five national achievement scales, one for each of the assessed domains of literacy – reading, writing, spelling and grammar and punctuation, and one for numeracy. The vertical and horizontal equating design for the paper tests is represented schematically in terms of data matrix in Figure 6.1. Each year in NAPLAN, with paper-based tests, the scales are vertically equated so that each NAPLAN achievement scale spans Years 3, 5, 7 and 9; i.e., there is a single scale for each assessment domain. All assessments other than writing include a subset of common items in tests administered to adjacent year levels; i.e., Years 3 and 5, Years 5 and 7 and Years 7 and 9. The responses to the common items are represented as the shaded columns in Figure 6.1 that overlap between adjacent year levels. For the purpose of monitoring student achievement over time, the NAPLAN 2018 scale for each domain needs to be horizontally equated to the historic NAPLAN reporting scale.

Because NAPLAN paper-based test materials have been considered to be in the public domain after the tests are administered, it has not been possible to use horizontal link (or historical) items to equate the paper tests over time. Instead, a common-person equating design is used. The secure equating test forms used for horizontal equating in 2009 through 2017 were used for common-person equating again in 2018 for the paper tests, noting that some of the secure forms have been modified or updated. Students from Years 3, 5, 7 and 9 in the equating sample were administered the secure equating forms at their year level two weeks prior to the NAPLAN 2018 paper test forms. The response data on the equating test were used to equate the 2018 paper tests onto the existing NAPLAN reporting scales.

The horizontal equating test provides one basis for placing the NAPLAN 2018 Year 3, Year 5, Year 7 and Year 9 tests on the vertical NAPLAN scale for each domain because newly estimated item locations for the secure forms can be compared to the item locations of the same items on the historical scale as estimated in 2009. The common items in the tests administered to adjacent year levels also provide a basis for directly comparing item locations across year levels. As in previous years, the results of common person horizontal equating were checked against the results of 2018 common-item vertical equating and both sets of results were taken into consideration in finalising the scaling of the reading, spelling, grammar and punctuation and numeracy tests.

The writing prompt of NAPLAN can be either persuasive or narrative. From 2008 to 2010 the prompt was narrative; from 2011 to 2015 a persuasive prompt was used. In 2011, a persuasive writing scale, separate from the narrative scale, was introduced. NAPLAN 2016 employed a narrative test. New analytical methods were used in 2016 to put the results of the narrative test onto the existing persuasive writing scale, creating a NAPLAN writing scale comparable for both genres for writing performance from 2011. Results of the persuasive writing tasks in 2017 were reported on the NAPLAN writing scale as established in 2011.

Starting from 2015, one task was administered to Year 3 and Year 5 students and a different task was administered to Year 7 and Year 9 students. Scripts from the two different writing tasks were rated using the same marking rubric based on the ten criteria. In 2018, there were 2 sets of 2 persuasive writing tasks to manage the provision of two testing days for students responding to the writing tasks online. The scripts from the four different tasks were rated using the same marking rubric. The resulting scale was equated to the NAPLAN writing scale. The process of equating for writing is described in section 6.5.

6.1 Horizontal Equating Shifts for Reading, Spelling, Grammar and Punctuation and Numeracy (Paper Tests)

The horizontal equating design for all paper tests other than writing involved a two-step procedure that combines common-person and common-item test equating methods. The common-person equating was achieved through the equating sample. The equating was carried out using secure equating forms that were administered with the NAPLAN 2018 paper tests for reading, spelling, grammar and punctuation and numeracy. Each student in the equating sample completed an equating form two weeks prior to the NAPLAN 2018 paper tests. Figure 6.1 shows the horizontal equating design for each of reading, spelling, grammar and punctuation and numeracy at each year level.

The equating form for each domain at each year level had already been scaled onto the historic NAPLAN scale in 2009. The first step was to place the NAPLAN 2018 paper test and the equating form on the same scale, for each domain at each year level, using the common-person equating data. This was achieved through a joint calibration of the data from the NAPLAN 2018 paper tests and the corresponding equating forms for each year level and domain. The second step was to equate each of the NAPLAN 2018 tests onto the historic NAPLAN domain scale using the relevant equating form through the process of common-item equating.

	Equating Tests (2009)					NAPLAN 2018 Paper Tests						
Group	Y3	Y5	Y7	Y9		Y3		Y5		Y7		Y9
Y3												
Y5												
Y7												
Y9												
Y3 EQ	EQ											
Y5 EQ		EQ										
Y7 EQ			EQ									
Y9 EQ				EQ								

Figure 6.1. Equating design for each assessment domain

The vertical scales were originally established in 2008. In each new calendar year, common items are included in the tests for adjacent year levels and new vertical equating shifts are estimated using the common items that work well as link items (that is, common items that show equivalent psychometric properties across year levels). While the vertical equating shifts are not strictly necessary for placing the NAPLAN 2018 results on the historical scale—because the horizontal shifts place each year level onto the common historical scale for all year levels—the vertical shifts are used to check and improve the horizontal shifts.

This method is described in more detail in section 6.4.

6.2 Calibrations of the Equating Forms and Item Reviews

Test calibrations were carried out separately for each of the 16 equating test forms (four domains at four year levels). The equating form and the corresponding 2018 paper test were jointly calibrated for each domain and each year level using the combined common-person equating data and anchoring on the delta-centred item parameters of the 2018 test on the 2018 preliminary scale.

The analyses of the equating data described above provided a set of item parameters on the preliminary NAPLAN 2018 scale for each of the equating forms. The set of 2018 equating form item estimates was then compared with the item estimates of the 2009 equating forms which were on the historic NAPLAN scale. Items were considered for deletion as links if they functioned poorly (based on Mean Square indices and ICCs) and/or if their relative locations differed by an absolute value of greater than 0.3 compared with their locations on the original 2009 scale for the relevant secure form.

Figure 6.2 to Figure 6.17 show the comparisons of the 2009 item parameter estimates and 2018 item parameter estimates for each of the 16 equating tests. Each figure shows a pair of scatter plots of the linked items, before and after review, in each domain and for each year level. Ideally, the bivariate points would follow the identity line, which is shown in each figure for reference as a thick, red line. A second, thinner line in grey, is the line that fits the dots in the scatterplots best.

Equating items that were modified over time had been omitted from the horizontal linking process.

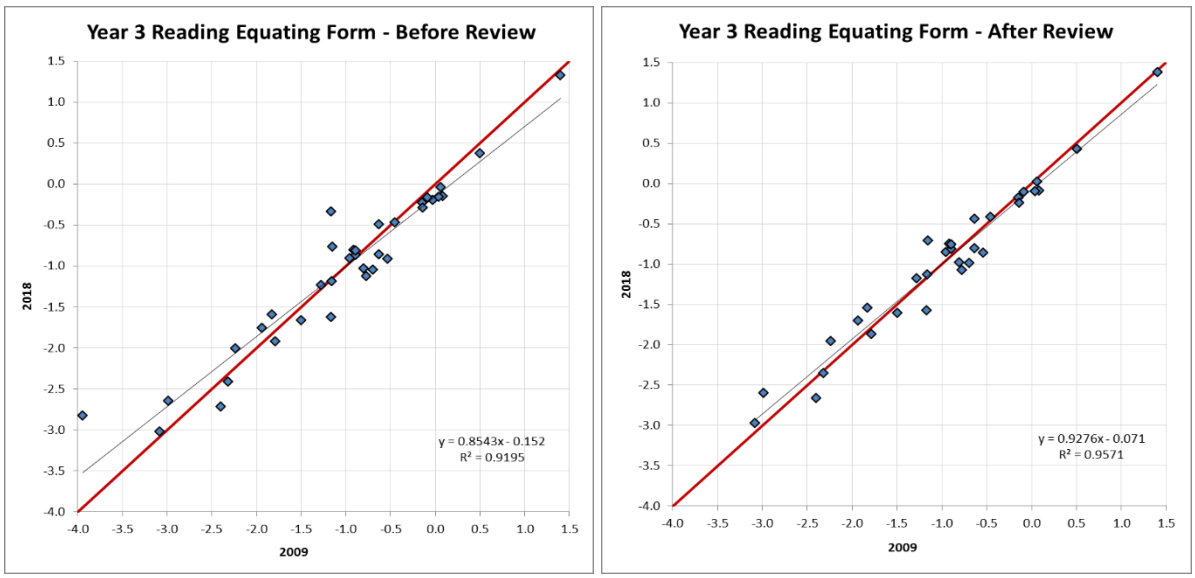

Figure 6.2. Horizontal link item review for Reading equating form Year 3 (2018 vs. 2009)

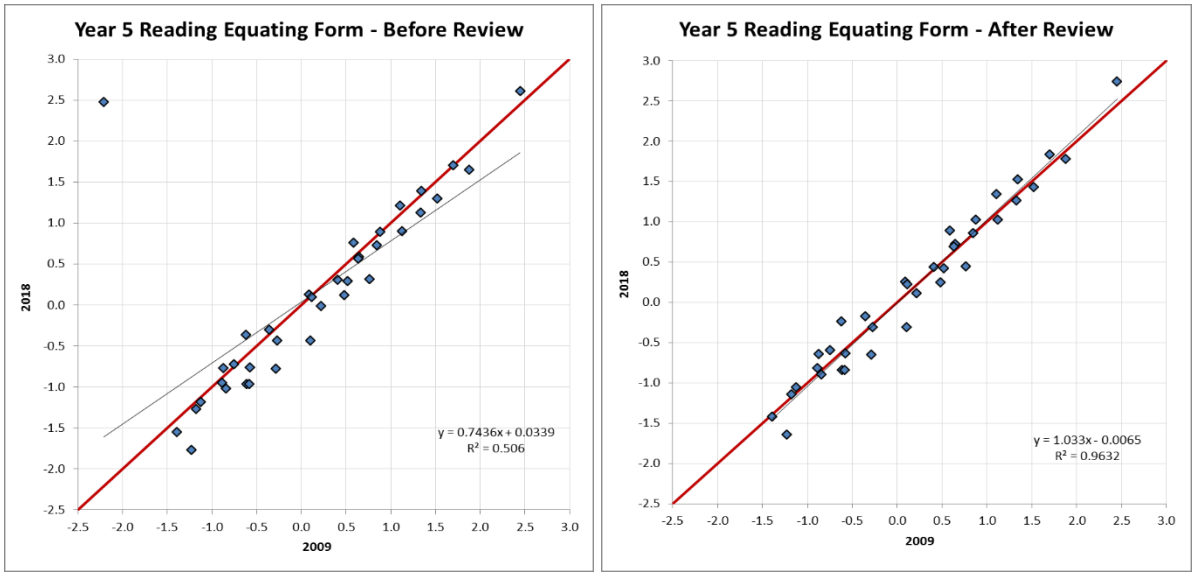

Figure 6.3. Horizontal link item Review for Reading equating form Year 5 (2018 vs. 2009)

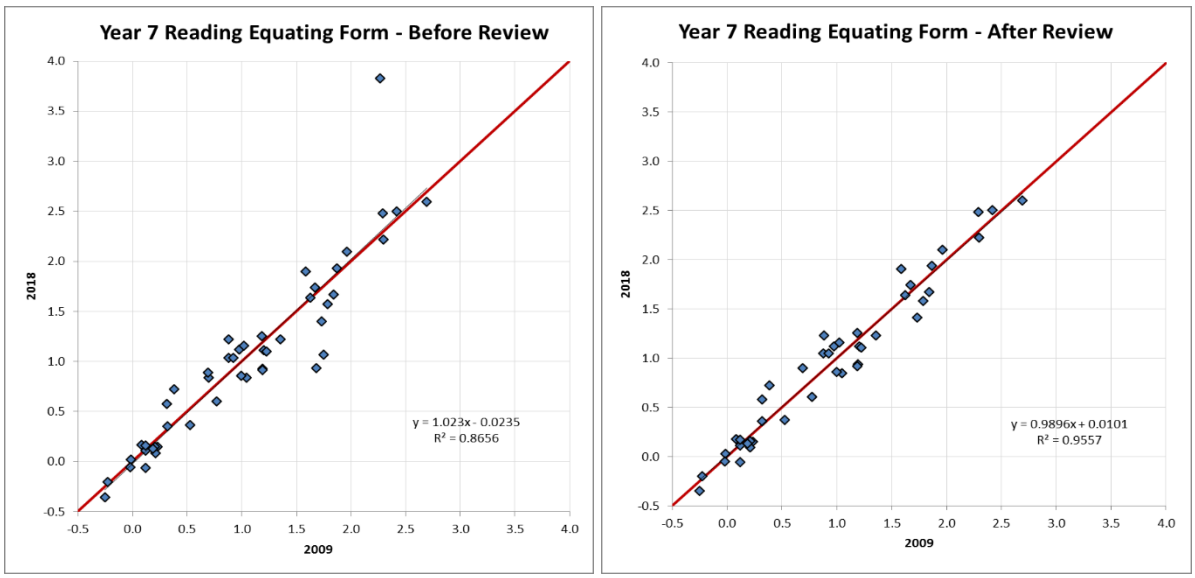

Figure 6.4. Horizontal link item Review for Reading equating form Year 7 (2018 vs. 2009)

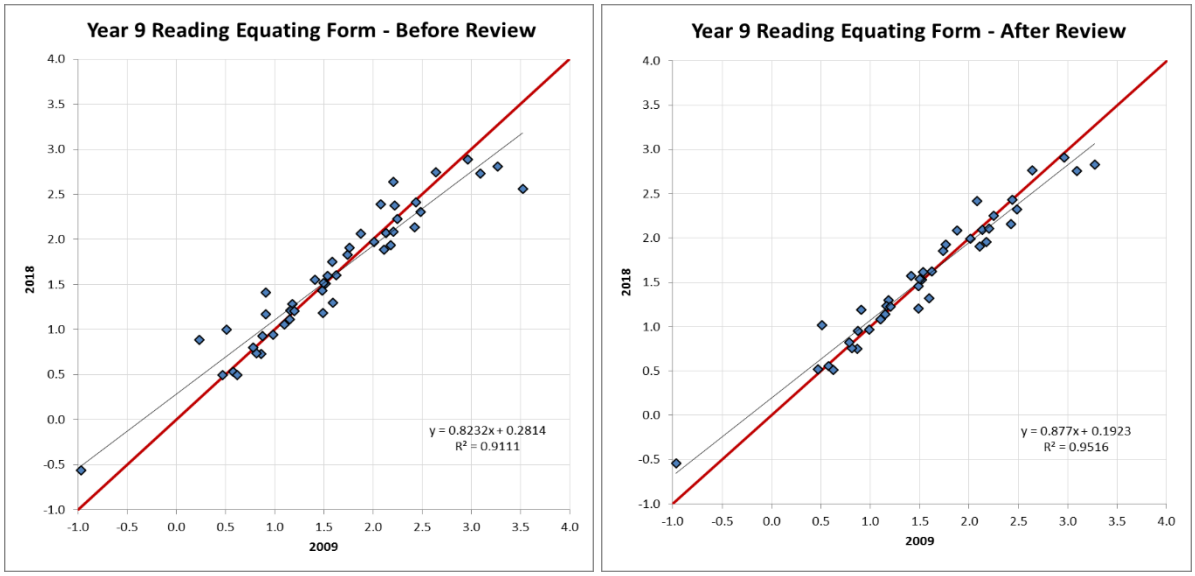

Figure 6.5. Horizontal link item review for Reading equating form Year 9 (2018 vs. 2009)

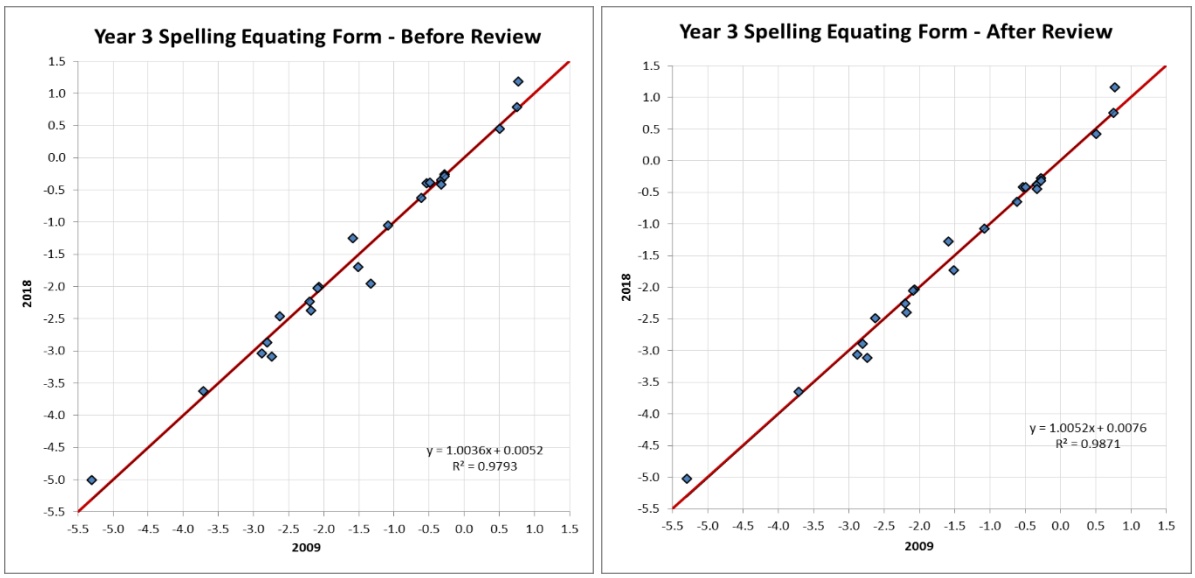

Figure 6.6. Horizontal link item review for Spelling equating form Year 3 (2018 vs. 2009)

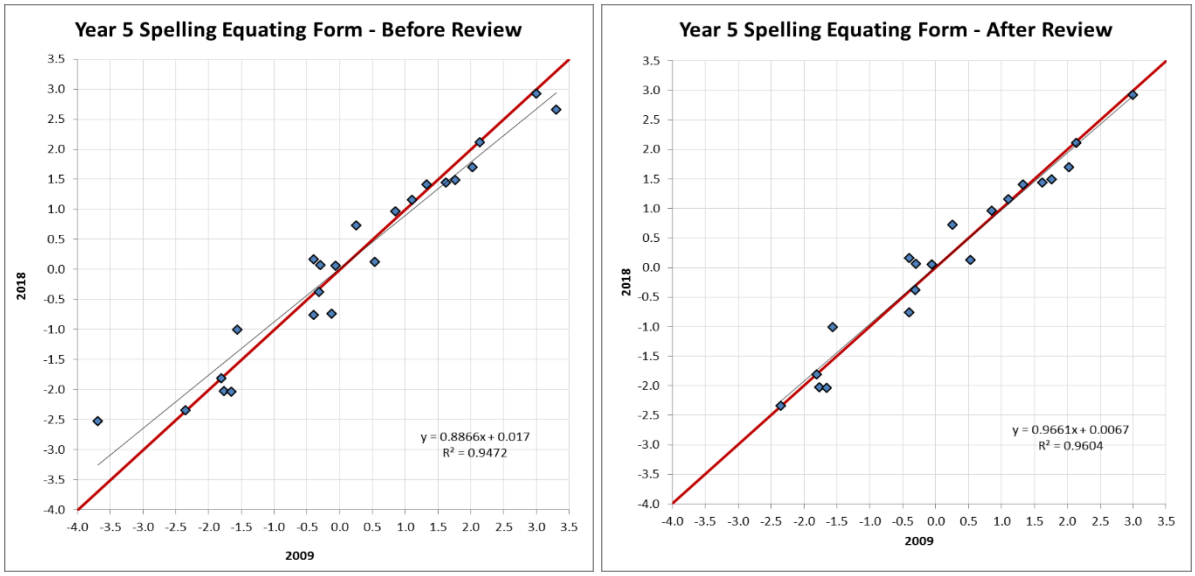

Figure 6.7. Horizontal link item review for Spelling equating form Year 5 (2018 vs. 2009)

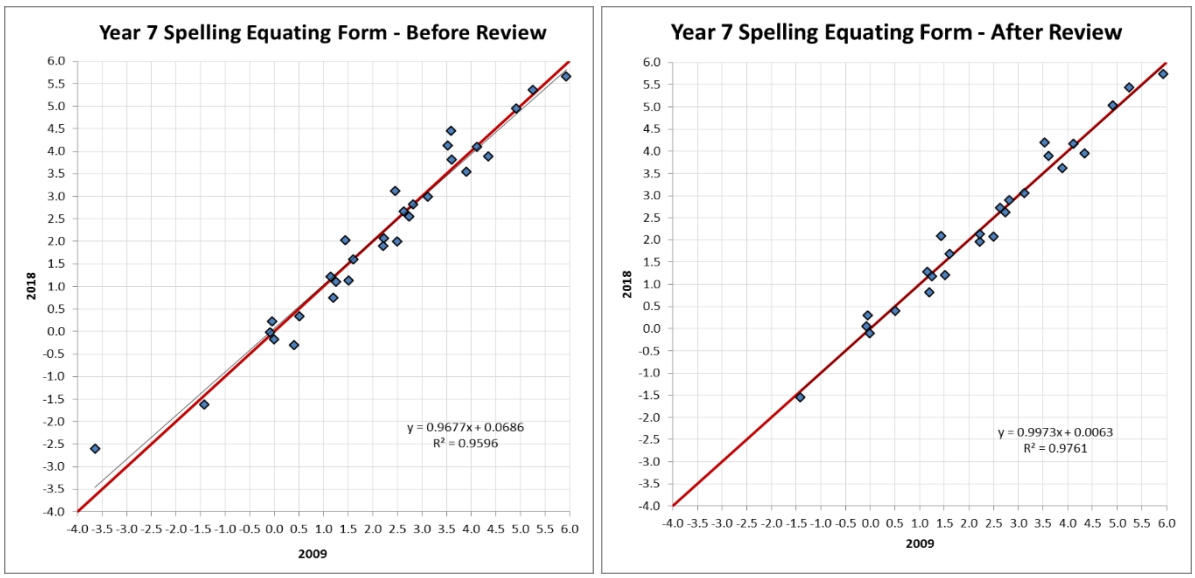

Figure 6.8. Horizontal link item Review for Spelling equating form Year 7 (2018 vs. 2009)

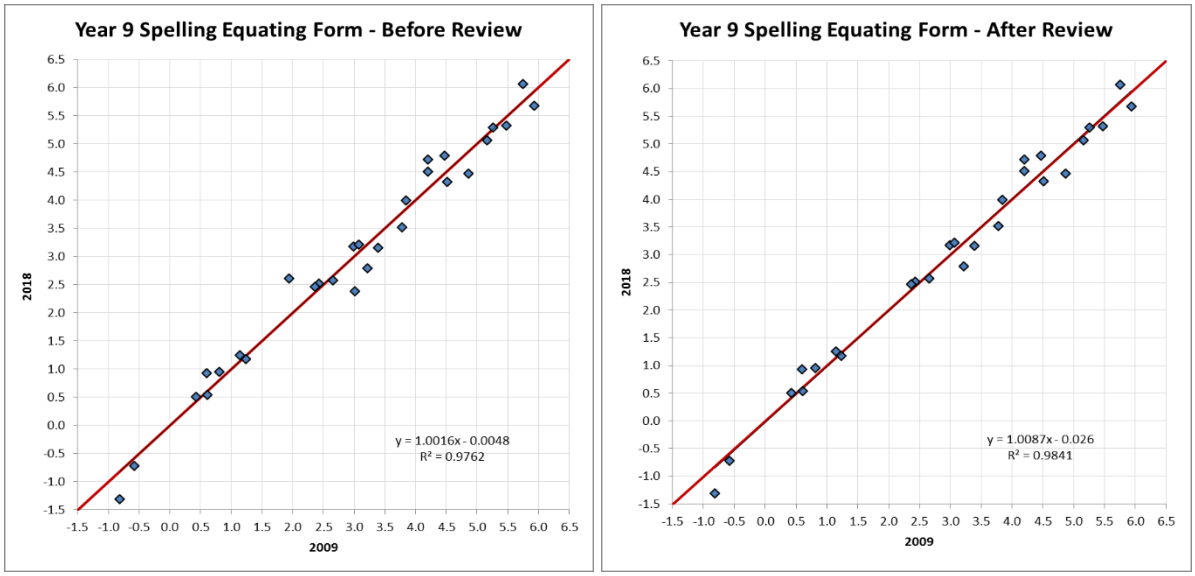

Figure 6.9. Horizontal link item Review for Spelling equating form Year 9 (2018 vs. 2009)

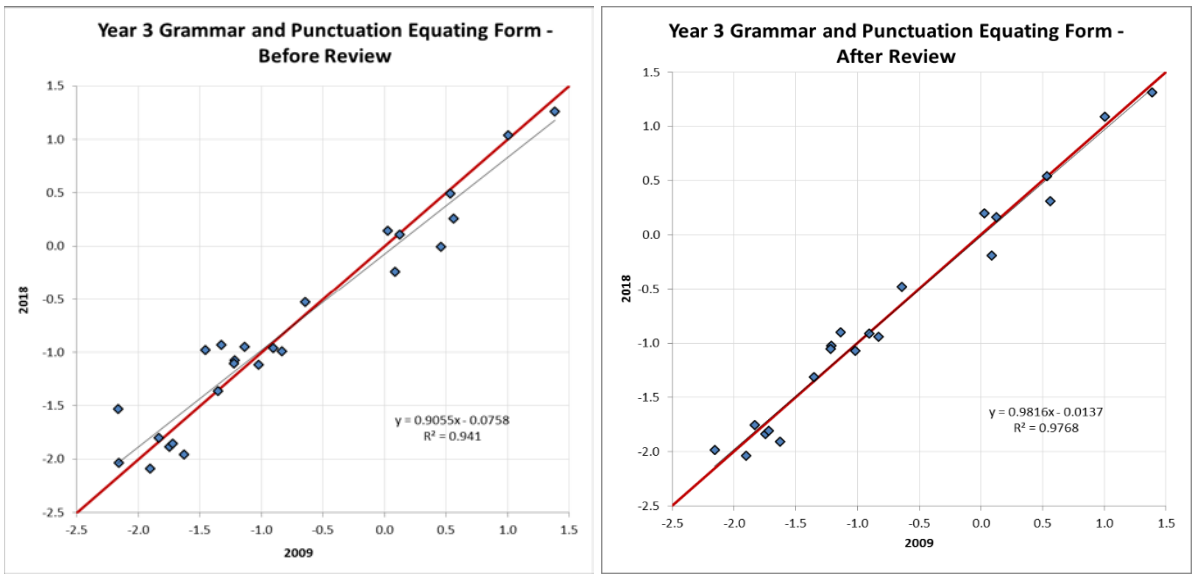

Figure 6.10. Horizontal link item review for Grammar and Punctuation equating form Year 3 (2018 vs. 2009)

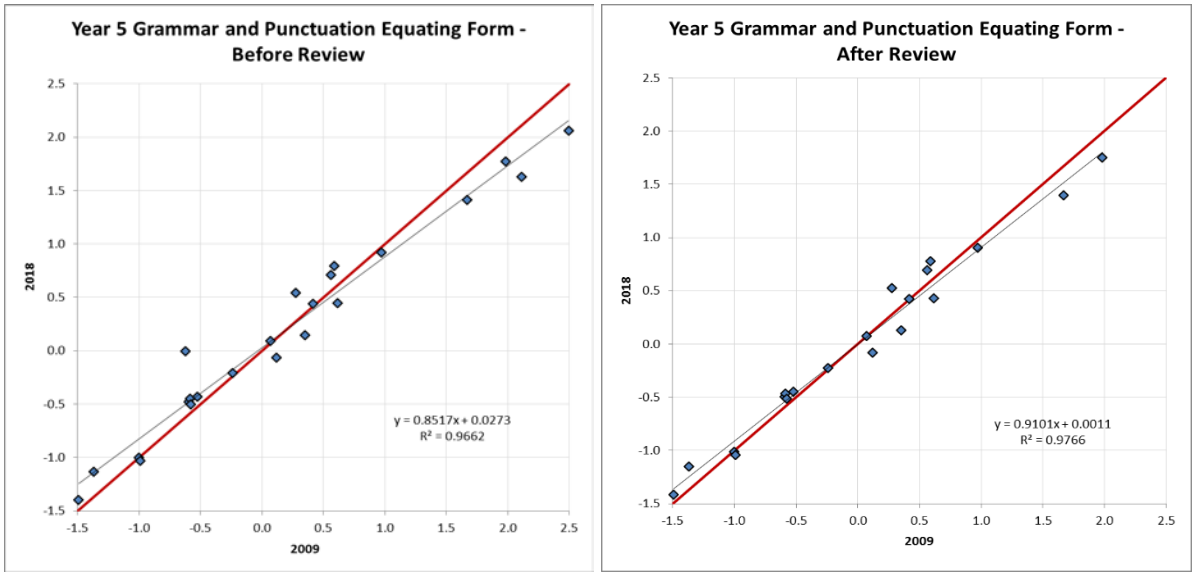

Figure 6.11. Horizontal link item Review for Grammar and Punctuation equating form Year 5 (2018 vs. 2009)

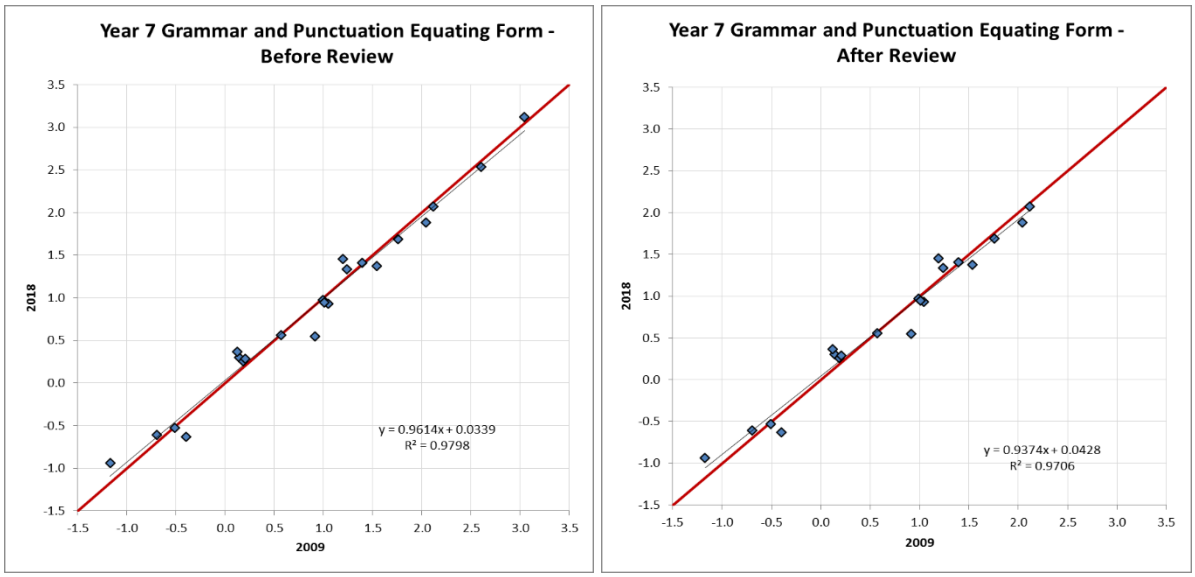

Figure 6.12. Horizontal link item Review for Grammar and Punctuation equating form Year 7 (2018 vs. 2009)

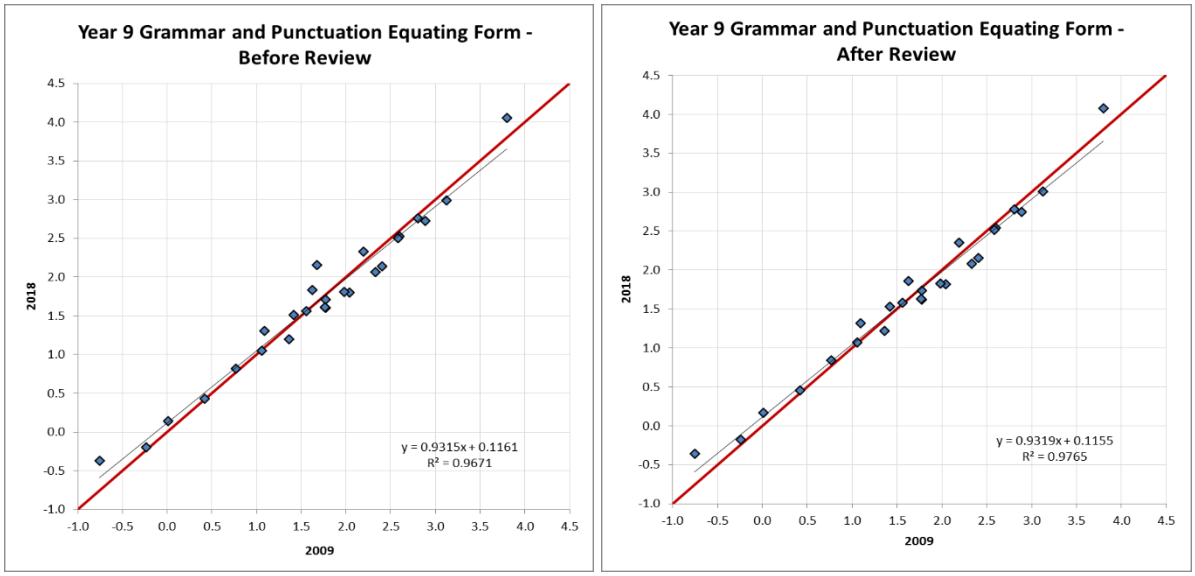

Figure 6.13. Horizontal link item review for Grammar and Punctuation equating form Year 9 (2018 vs. 2009)

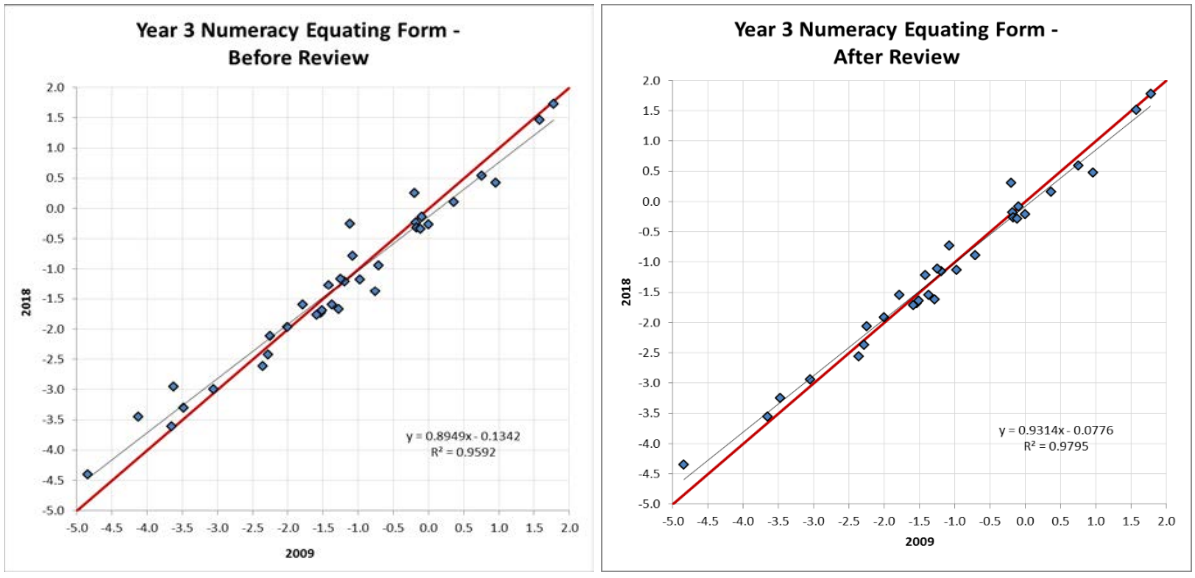

Figure 6.14. Horizontal link item review for Numeracy equating form Year 3 (2018 vs. 2009)

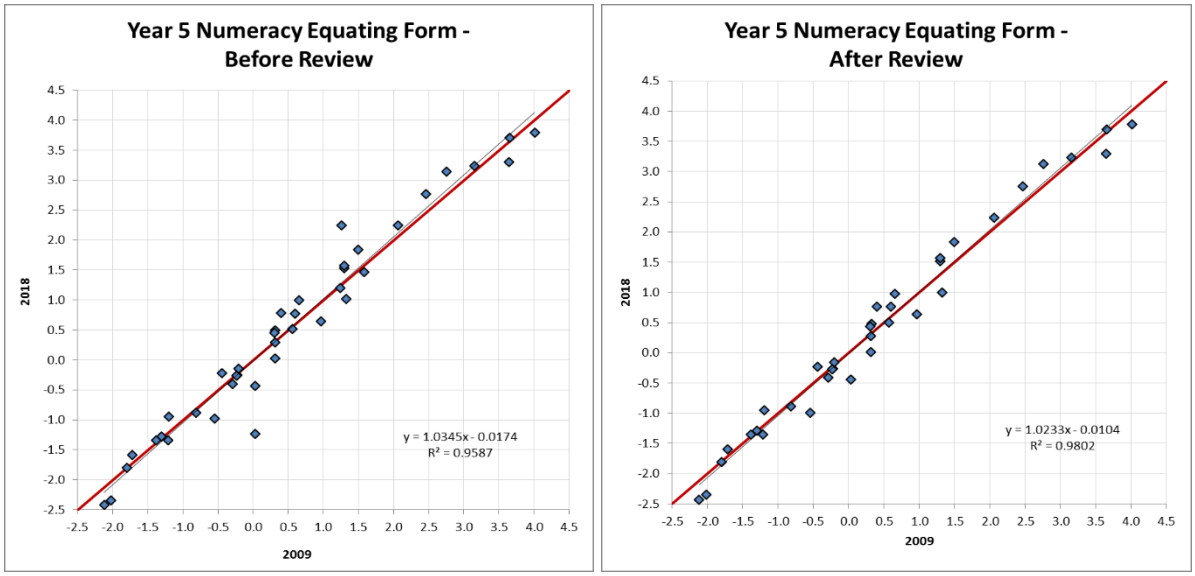

Figure 6.15. Horizontal link item review for Numeracy equating form Year 5 (2018 vs. 2009)

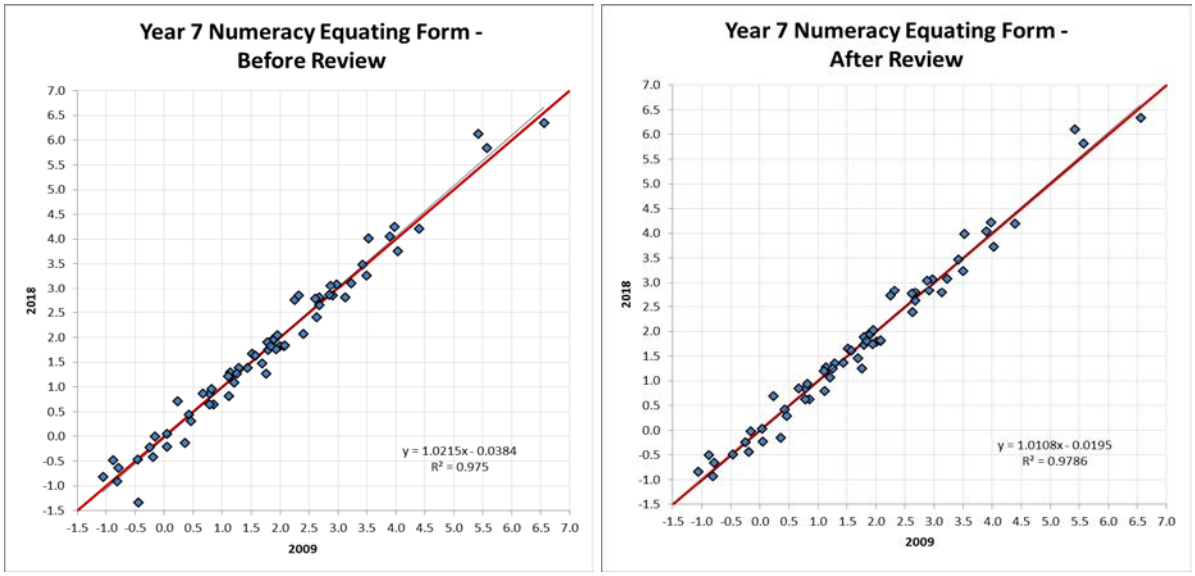

Figure 6.16. Horizontal link item review for Numeracy equating form Year 7 (2018 vs. 2009)

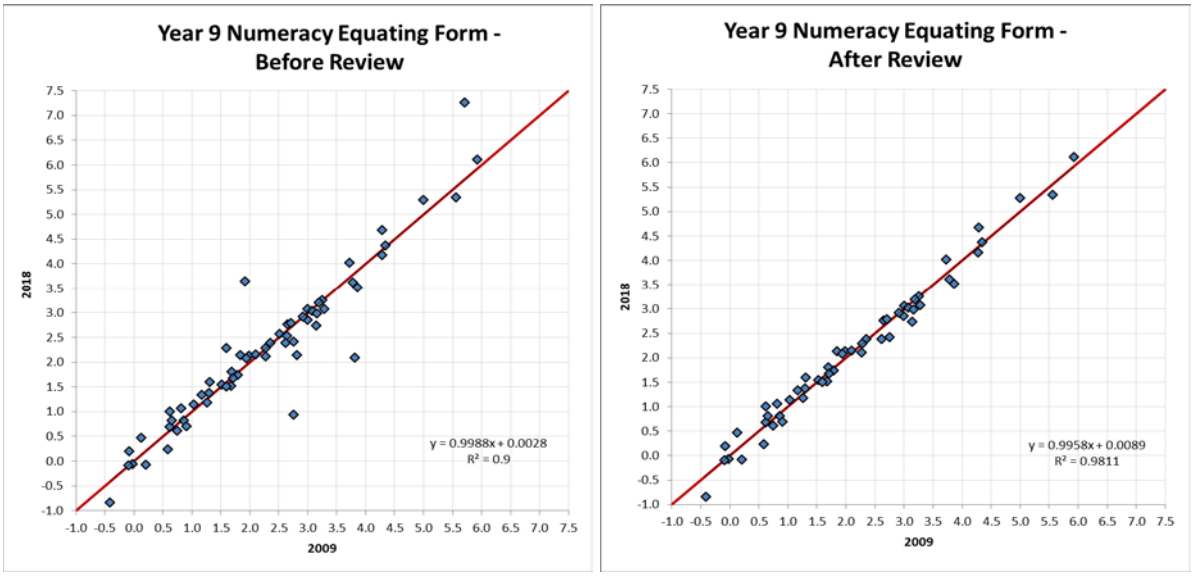

Figure 6.17. Horizontal link item review for Numeracy equating form Year 9 (2018 vs. 2009)

After the review and evaluation of the equating items, a final set of link items was identified for each domain and year level. The final sets of link items were used to calculate the shift to equate the 2018 equating forms onto the historical NAPLAN reporting scale, thus aligning the NAPLAN 2018 tests on the historic NAPLAN reporting scale. However, as mentioned earlier, these shifts were improved in a second step by taking the estimated vertical equating shifts into account (see next sections).

Table 6.1 shows the horizontal shift-constants for each domain at each year level. Each of the shifts, calculated based on the final set of link items, would put the 2018 equating test on the same NAPLAN historic domain scale that the 2009 equating test is on.

Table 6.1. Horizontal Equating shifts Shifts between 2018 Item Locations and 2009 Item Locations

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy
Year 3	0.109	-0.541	0.316	-1.067
Year 5	1.220	1.179	1.104	0.593
Year 7	1.928	2.194	1.366	1.833
Year 9	2.123	3.471	2.474	2.954

The horizontal equating of each of the NAPLAN 2018 domain scales in reading, spelling, grammar and punctuation and numeracy to the corresponding historical NAPLAN scales had provisionally put each of the tests on the vertical NAPLAN scales. The locations of the year-level tests on the scale based on the horizontal equating results were compared with their relative locations based on the vertical equating results. Both sets of results were taken into consideration in determining the final shifts. The vertical equating of the 2018 tests is described in the next section.

6.3 Vertical Equating Shifts for the NAPLAN 2018 Paper and Online Tests

As in previous years of testing, the NAPLAN 2018 reading, spelling, grammar and

punctuation and numeracy tests were vertically linked across Years 3, 5, 7 and 9 by common items embedded in tests in adjacent year levels; i.e., Year 3 and Year 5, Year 5 and Year 7, and Year 7 and Year 9 in both the paper tests and online tests.

In 2018, it was decided to take advantage of the two sources of data, paper and online, to estimate the vertical equating shifts. This was possible because for each domain and year level, most of the items on the paper tests were also on the online tests. More specifically, the NAPLAN paper test items were developed largely as a subset of the NAPLAN Online items. In reading, between 80-92% (depending on year level) of items in the paper test were also in the online tests; in numeracy, between 98-100% of items in the paper test were also in the online tests; and, in grammar and punctuation, between 84-100% of items in the paper test were also in the online tests. Spelling featured a lower percentage of items in common due to the inclusion of dictation items in the online test, with 56-68% of items in the paper test also included in the online tests.

The link items from both sources could be used for a combined vertical equating only if they were on the same scale. Prior to the equating to the paper scales by anchoring, the common items between the paper and online tests for each domain and each year level were reviewed to make sure that the linking set used contained good link items. Separate Rasch calibrations were conducted for the online and paper tests and the item parameters for common items were compared across the two modes. The results of the analysis showed that the item parameters were highly correlated (Pearson correlation range from .96 to .99), supporting the conclusion that both modes measured the same construct.

Following confirmation of the invariance of the item functioning, each online domain test (other than writing) at each year level (including all testlets) was calibrated anchored on the paper year-level delta-centred item parameters to put the online parameters on the same scale as the paper tests.

The quality of these common items in functioning as equating links between year levels was then systematically reviewed for each domain. Only items that showed satisfactory and similar psychometric properties in the adjacent year levels were used as link items when scaled separately for each year level.

A common item was considered for omission (i.e. not to be used for vertical linking purposes) based on the fit of the item and evidence for Differential Item Functioning (DIF). As there were usually not many common items in the paper tests between year levels, it was usually agreed to maximize the number of links retained where possible as in previous years. Review of the vertical link items was undertaken in steps outlined below:

Step 1. Initial cross-year scatterplots with all items were examined to ascertain the overall correlation and to note any patterns and outliers.

Step 2. Each item was checked for misfit at each year level based on how well items discriminate between high and low performing students. Discrimination was checked by inspection of the ICC and graphical fit, fit statistics and the item-rest correlations. Items that show pronounced misfit in either year level form were omitted from the linking set.

Decisions to omit items due to misfit were not based on any one indicator in isolation; rather, decisions were based on all available evidence concerning the functioning of each item. Items that fail some criteria are normally excluded from the linking set but may have been retained

if the total number of functioning links was relatively small.

Step 3. Items were omitted if they showed cross year-level DIF. The impact was judged based upon changes in the shift constant and the slope of the best fit line. Items were considered for exclusion from the linking based on DIF if the absolute adjusted difference was greater than 0.3 and if the absolute standardised difference was greater than the criterion set. In such cases, these items were treated as different items in each of the year levels.

After each stage, the cross-year level scatterplot was evaluated with a focus on the agreement of bivariate data with the identity line. The ratio of the standard deviations of the item locations was checked for each adjacent year level (e.g., Year 3 SD/Year 5 SD). Ideally the ratio should fall between 0.9 and 1.1.

This link-item review procedure was the same for NAPLAN paper tests and online test.

Three sets of link items (Year 3/Year 5, Year 5/Year 7, Year 7/Year 9) were reviewed for each of the four domains. In each domain, the items administered to each year level were calibrated separately. The reviews identified sets of good link items for the vertical equating of tests in adjacent year levels. The review was performed for the paper tests and then for the online tests.

After the online items were placed on the paper scale for each domain and year level, the three sets of vertical equating of adjacent year-level scales proceeded using both the paper vertical linking items and the online vertical linking items in each set of equating. The incorporation of online items into the vertical equating increased the robustness of the vertical equating when compared with previous years. This is because the vertical equating was based on larger numbers of link items than had been the case in previous NAPLAN cycles (refer to Table 6.2 for a summary of the numbers of vertical link items by domain and year level in 2018).

For each set of adjacent year-level scales, mean item parameters of the link items were calculated for each of the two-year levels. The vertical shift is the difference between the two means.

For each pair of adjacent tests, one set of item parameters (e.g. of Year 3 link items from both paper and online tests) was then plotted against the other set of item parameters (of Year 5 link items from both paper and online tests.) Two plots are presented below for each review: one plot for the set of link items to be reviewed and one plot for the retained link items after review. On the plots, each dot represents a common item. The 24 plots are shown in Figure 6.18 to Figure 6.29.

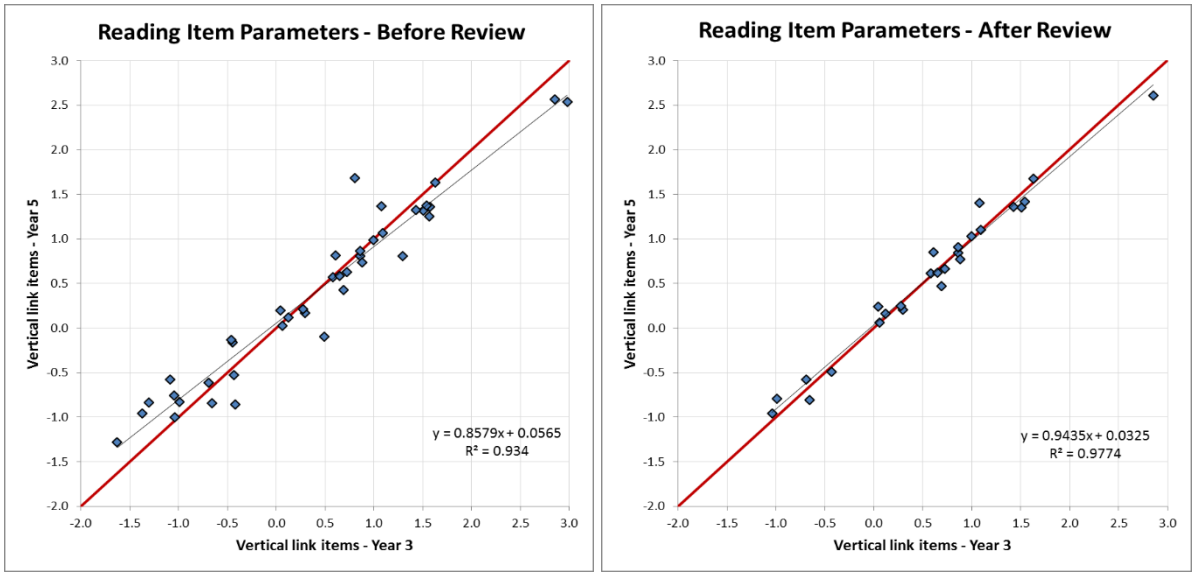

Figure 6.18. Vertical link item review for Reading between Year 3 and Year 5

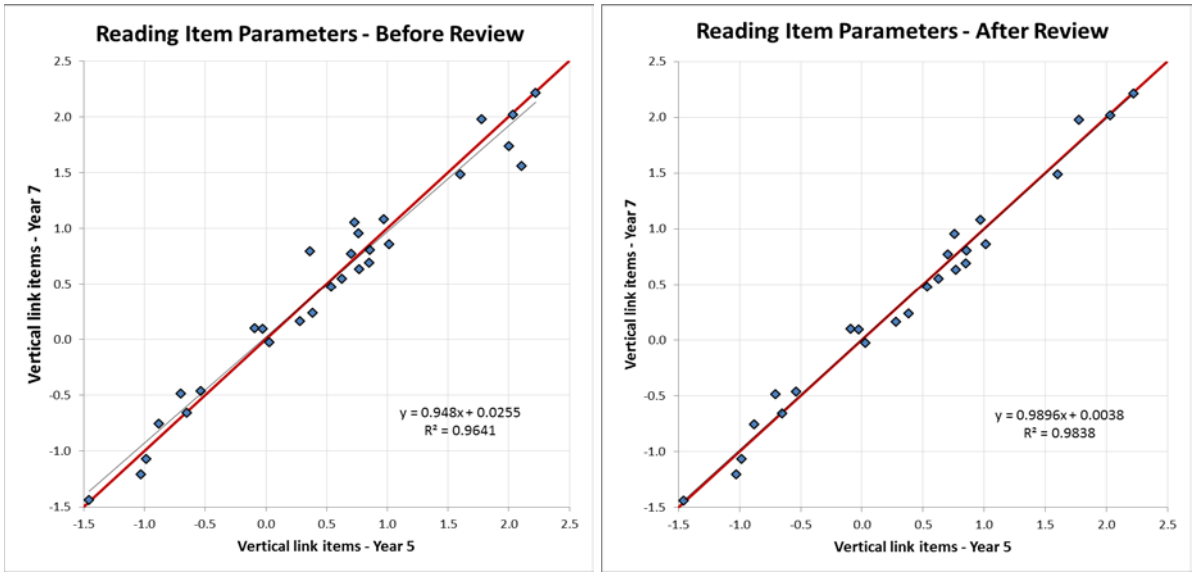

Figure 6.19. Vertical link item review for Reading between Year 5 and Year 7

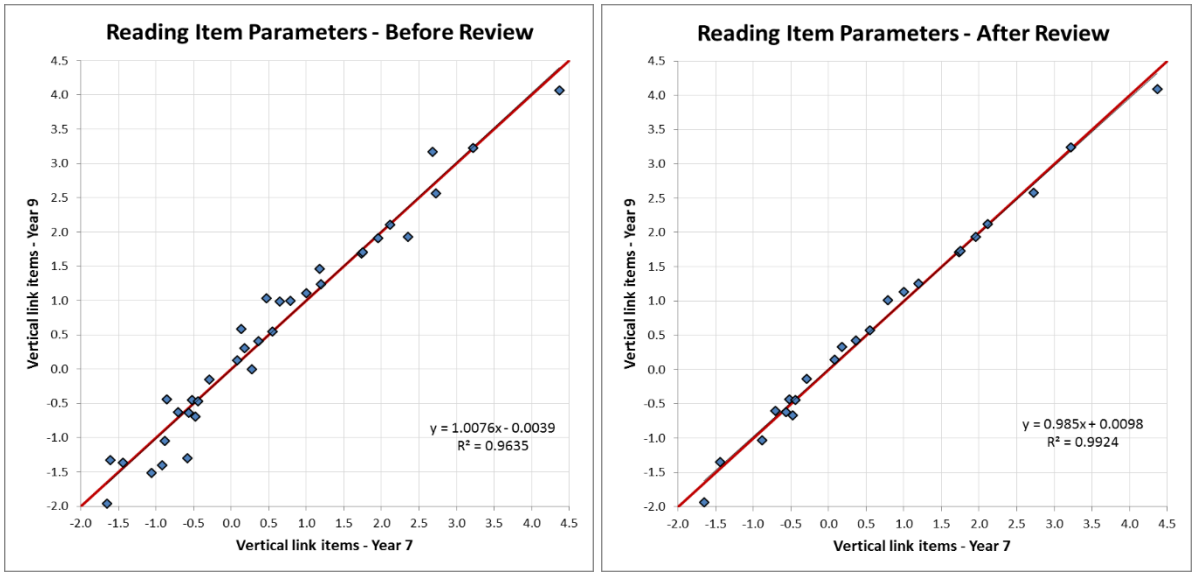

Figure 6.20. Vertical link item review for Reading between Year 7 and Year 9

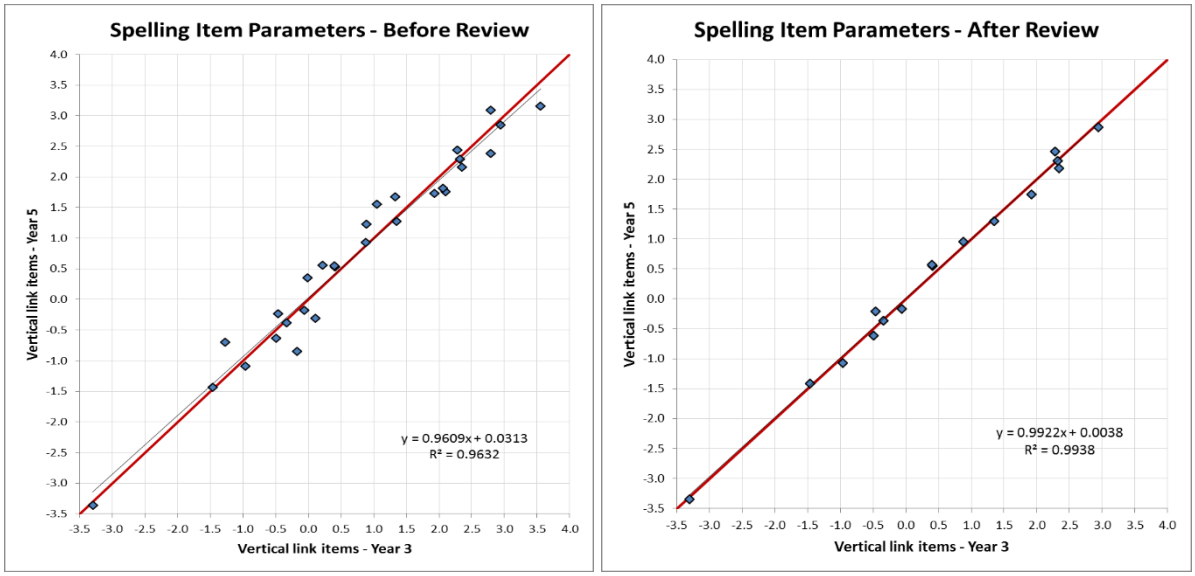

Figure 6.21. Vertical link item review for Spelling between Year 3 and Year 5

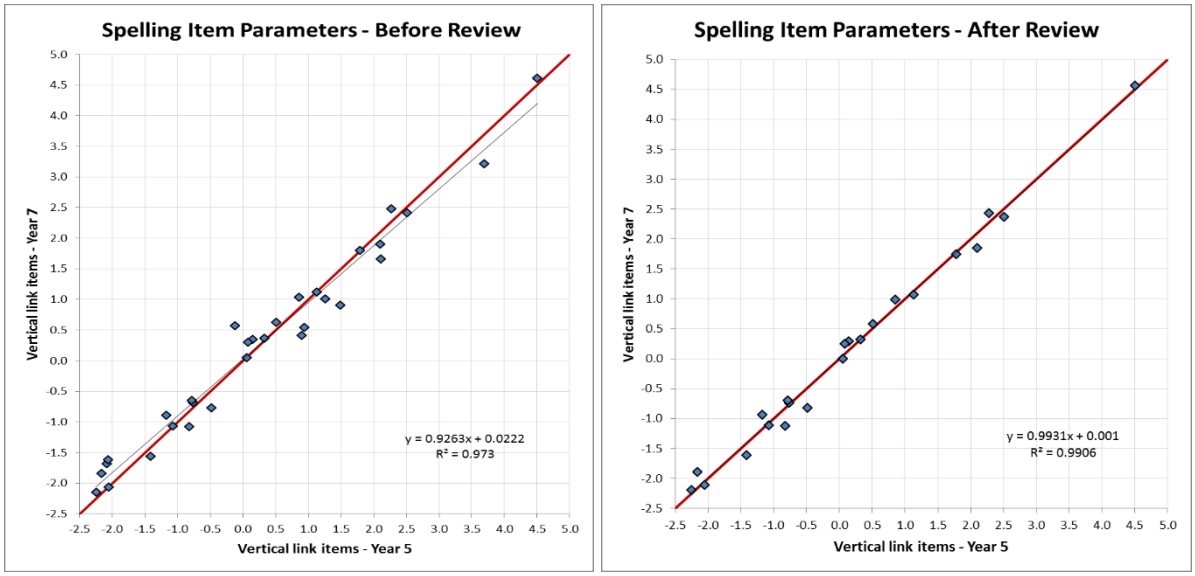

Figure 6.22. Vertical link item review for Spelling between Year 5 and Year 7

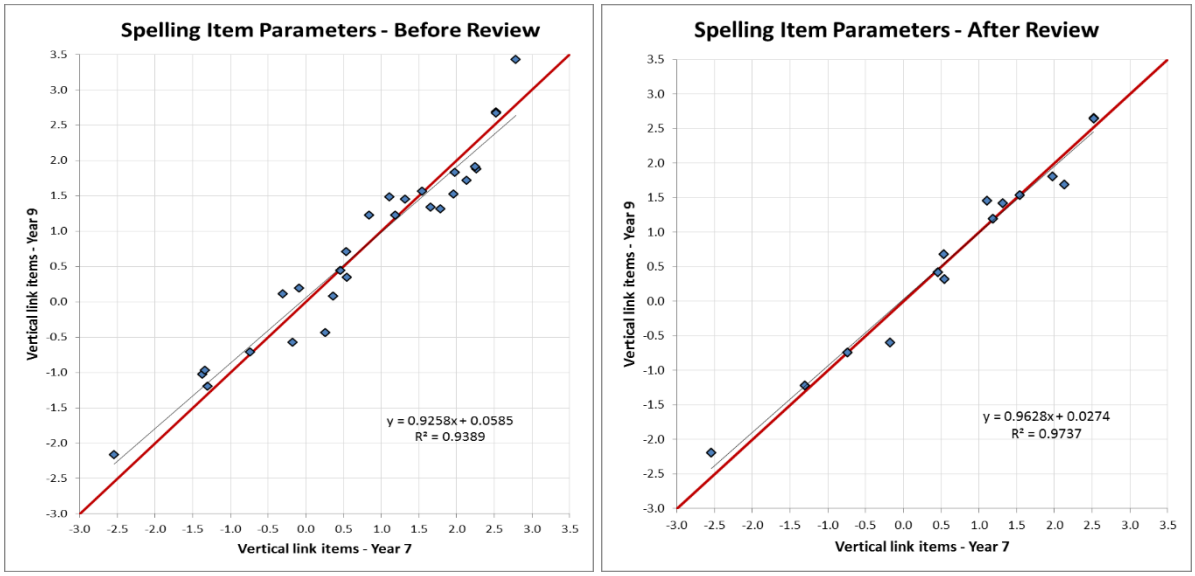

Figure 6.23. Vertical link item review for Spelling between Year 7 and Year 9

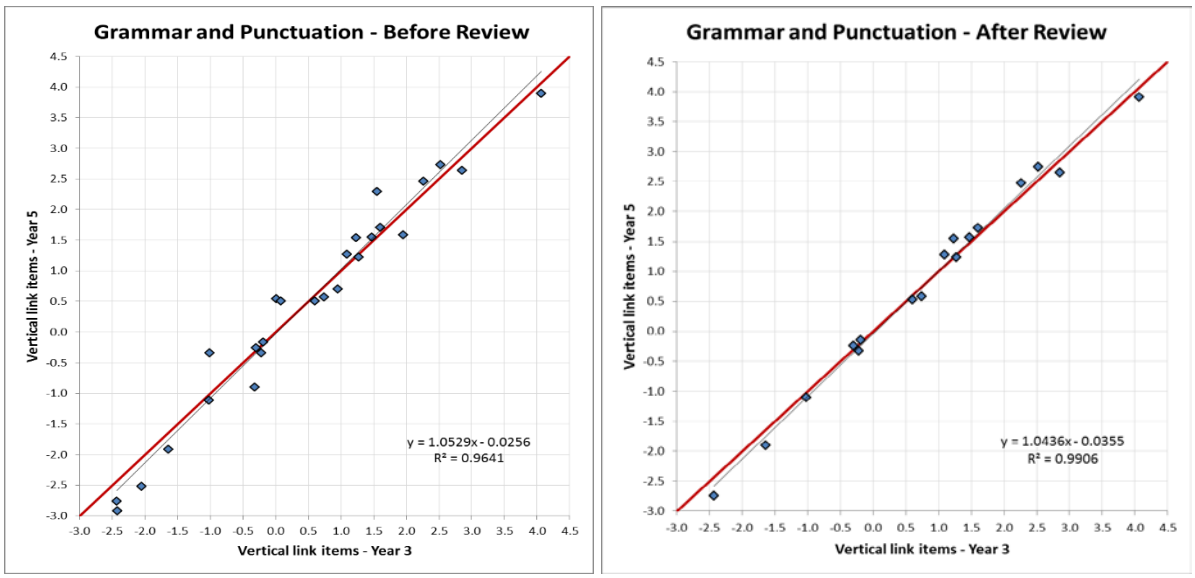

Figure 6.24. Vertical link item review for grammar and punctuation between Year 3 and Year 5

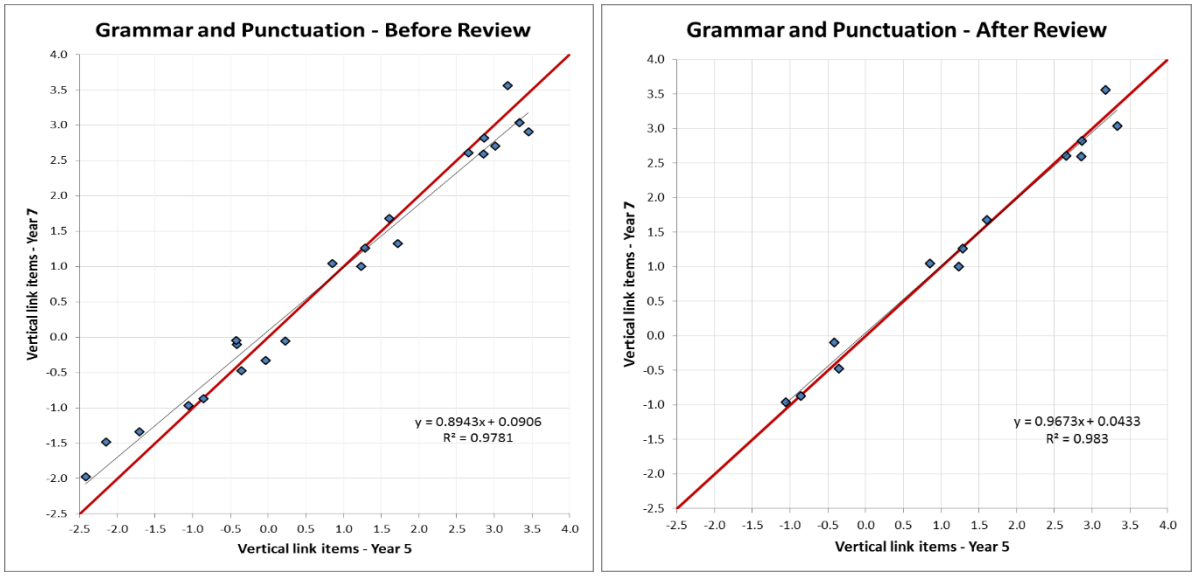

Figure 6.25. Vertical link item review for grammar and punctuation between Year 5 and Year 7

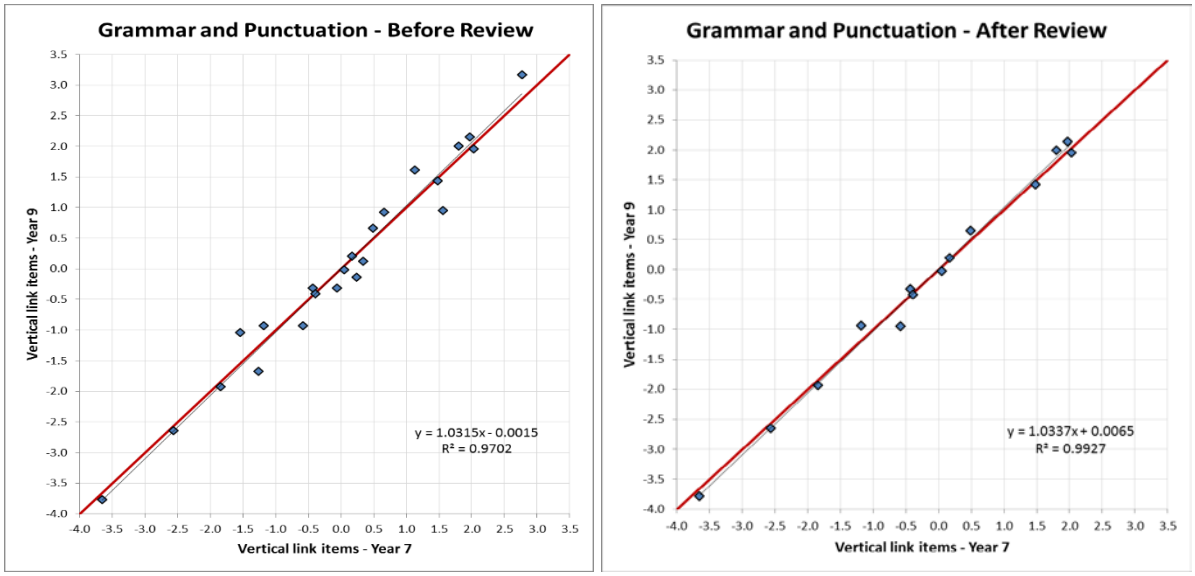

Figure 6.26. Vertical link item review for Grammar and Punctuation between Year 7 and Year 9

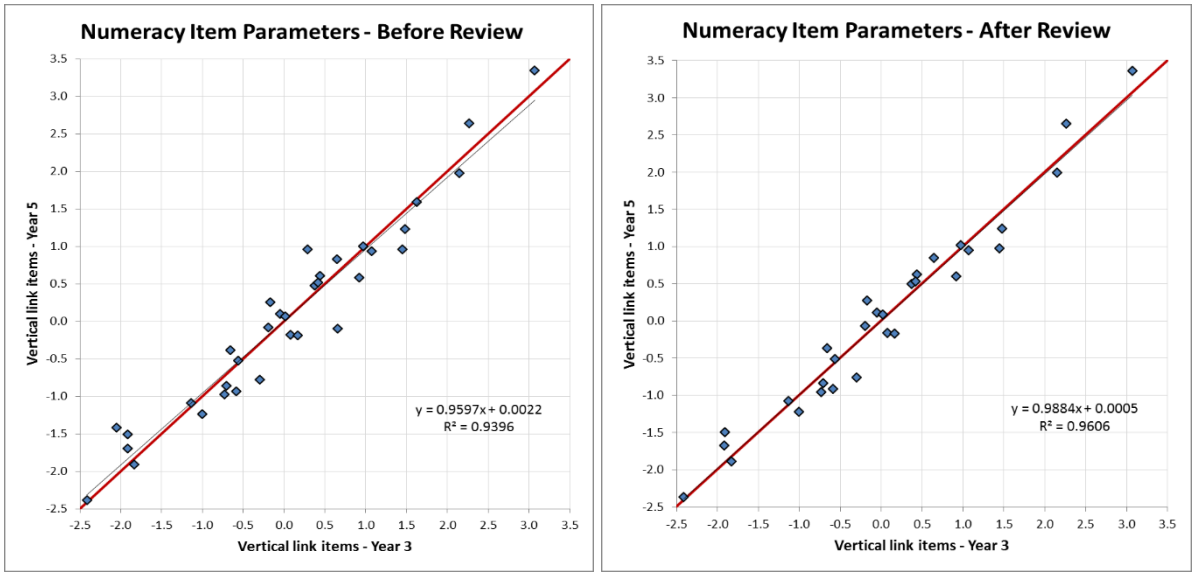

Figure 6.27. Vertical link item review for Numeracy between Year 3 and Year 5

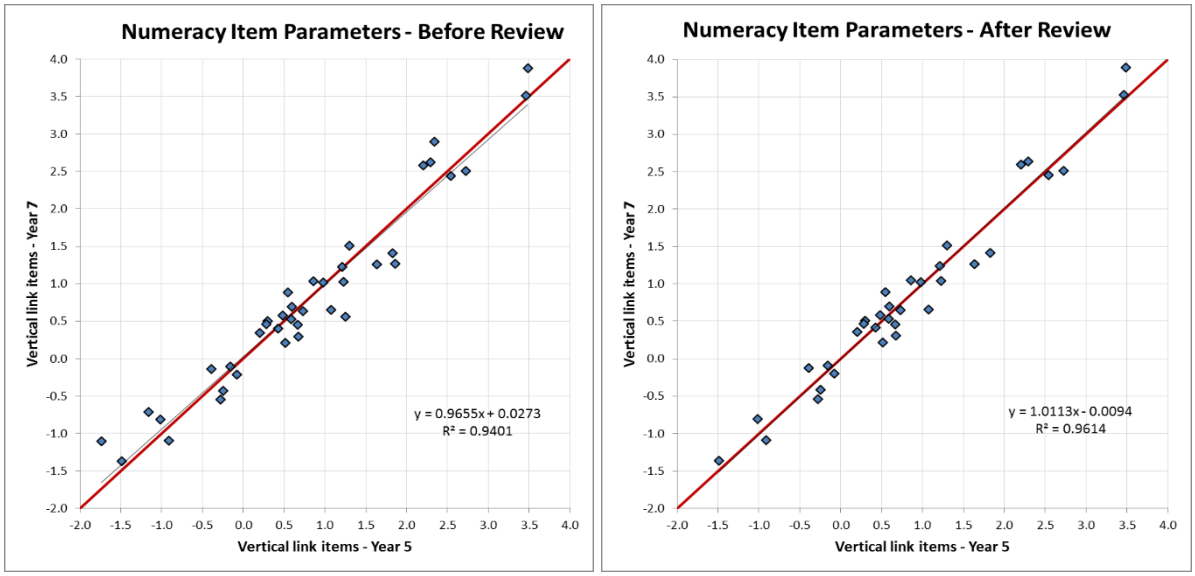

Figure 6.28. Vertical link item review for Numeracy between Year 5 and Year 7

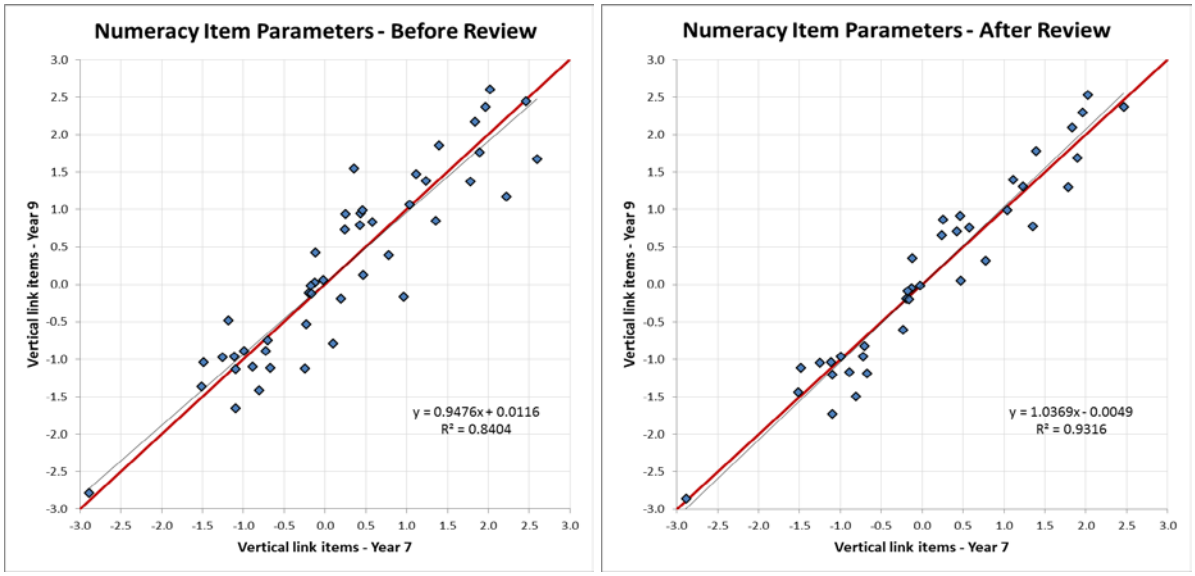

Figure 6.29. Vertical link item review for Numeracy between Year 7 and Year 9

The numbers of vertical links used and retained for each adjacent pair of year levels are shown in Table 6.2. Appendix J presents the 2018 item locations (Rasch difficulty parameters), standard errors, and differences in the item locations by domain for each adjacent pair of year levels.

Table 6.2. Vertical Link Review Summary

Domain	Year 3 / 5		Year 5 / 7		Year 7 / 9	
	No. Links Retained	Total No. of Links	No. Links Retained	Total No. of Links	No. Links Retained	Total No. of Links
Reading	26	40	25	29	23	35
Spelling	16	29	22	31	15	28
Grammar and Punctuation	17	26	13	22	14	23
Numeracy	30	34	34	39	38	47

The mean shifts between two adjacent year levels for each of the four domains are shown in Table 6.3.

Table 6.3. Vertical Shift Constants

Shift	Reading	Spelling	Grammar and Punctuation	Numeracy
Year 3 to 5	-0.817	-1.656	-0.937	-1.490
Year 5 to 5	0.000	0.000	0.000	0.000
Year 7 to 5	0.760	0.927	0.601	1.180
Year 9 to 7	0.291	1.053	0.832	1.108
Year 9 to 5	1.051	1.980	1.433	2.288

The final equating parameters to place the 2018 tests on each of the historical NAPLAN domain scales were determined by taking both of the horizontal equating shifts and the vertical equating shifts into consideration. The procedure and results are described in Section 6.4.

6.4 Comparing and Combining Horizontal and Vertical Equating Shifts

The NAPLAN scale spanning Years 3, 5, 7 and 9 was established in 2008 through vertical equating of the year level tests. The horizontal equating forms for each year level provide one basis for placing the NAPLAN 2018 tests on the vertical scale for each domain. The horizontal equating forms were first used in 2009 and re-used every subsequent year.

It is useful to check the relative locations of the NAPLAN 2018 tests for each year level on the NAPLAN scale by comparing the horizontal shifts with the vertical shifts. Figure 6.1 depicts the horizontal and vertical equating design schematically. In principle, each year-level test can be equated directly on to the NAPLAN scale through the horizontal equating shifts without the vertical equating shifts. The vertical equating, however, served as a quality assurance check and as a tool to fine tune the horizontal shifts.

The equating process that has been used in previous years of NAPLAN was designed to take into consideration both vertical equating and horizontal equating. In 2018, this process was used again to establish final locations of the reading, spelling, grammar and punctuation and numeracy tests on the NAPLAN reporting scales. By first equating the online tests to the paper tests through the previously described common item anchoring method for each domain at each year level, the equating shift estimated by the regression method described below was applied to online tests as well.

In this section, the results of the horizontal equating shifts of paper tests to the NAPLAN historic scale are compared with the vertical equating shifts using a combination of paper and online vertical link items. Specifically, the vertical and horizontal shift constants are plotted for each of the four year-level tests in each domain. The regression-based comparison indicates where there is any divergence. Ideally, any case of divergence between the horizontal and vertical equating shifts would be resolved to the degree possible through checking each specific component of the linking process.

Figure 6.30 shows the plots of the relative positions of the four 2018 tests (Years 3, 5, 7 and 9) based on the common-person horizontal equating to the NAPLAN scale (vertical axes) against their relative positions centred at Year 5 based on the common-item vertical equating (horizontal axes). The regression equation and *R*-square are shown at the bottom-right corner of each plot. There is one plot for each of reading, spelling, grammar and punctuation, and numeracy.

Ideally, each regression line would have a slope of 1.0 and pass through all four points, showing perfect correspondence of the two methods. It can be seen from the plots that this is not always the case. The best fit lines for Spelling and Numeracy show that the horizontal equating and vertical equating align well. For Reading, Year 5 was a bit further from the line, and it was decided to base the regression on equating results from Years 3, 7 and 9 and based the Year 5 shift on horizontal equating. For grammar and punctuation, Year 7 was the outlier and the regression was based only on year 3, 5 and 9 while Year 7 shift was extrapolated.

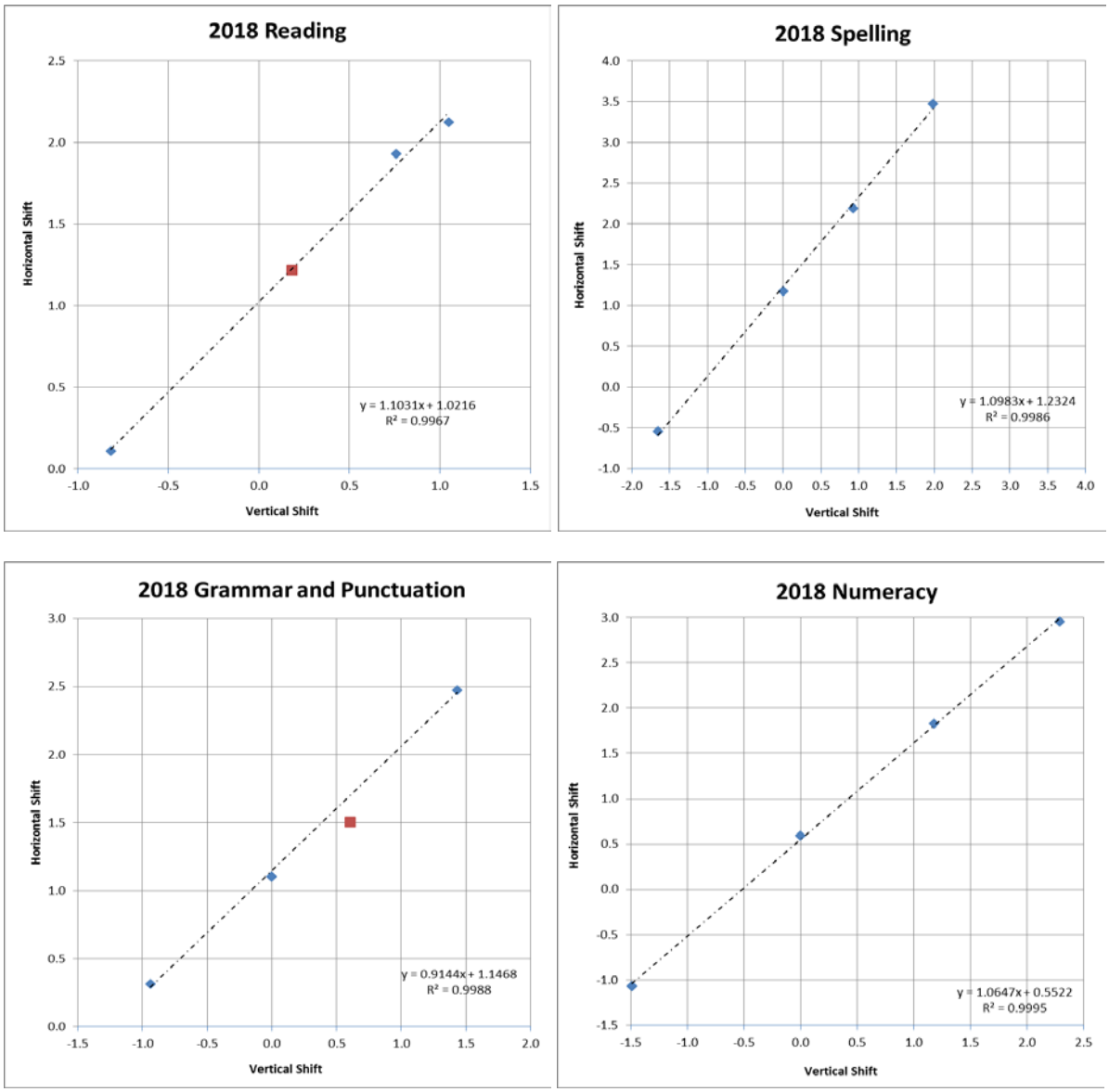

Figure 6.30. Comparisons of horizontal and vertical shifts

Table 6.4 displays the intercepts and slopes for the regression-based combination of the vertical and horizontal equating shifts.

Table 6.4. Regression Intercepts and Slopes

Regression Coefficient	Reading	Spelling	Grammar and Punctuation	Numeracy
Intercept	1.022	1.232	1.147	0.552
Slope	1.103	1.098	0.914	1.065

As in previous years, the final equating shifts were calculated using the regression lines of best fit

$$y = a + b \cdot x \quad (6.1)$$

where y is the final shift onto the NAPLAN scale; x is the Year-5 centred shift based on vertical equating; b is the regression slope; and a is the regression intercept. In other words, the final equating shift that places the 2018 results for each year level onto the historical scale is equal to the *estimated* horizontal shift from a regression of the *observed* (computed) horizontal shifts onto the observed (computed) vertical shifts.

The final, regression-based shifts for each domain calculated using Equation 6.1 are shown in Table 6.5 by year level. These equating shifts were applied to paper tests and online tests in Years 3, 5, 7 and 9 to put the tests on the NAPLAN historic scale.

Table 6.5. Final Shifts Applied for Equating NAPLAN 2018 onto the NAPLAN Historic Scale

Year Level	Reading	Spelling	Grammar and Punctuation	Numeracy
3	0.120	-0.586	0.290	-1.035
5	1.220	1.232	1.147	0.552
7	1.860	2.250	1.507	1.808
9	2.181	3.408	2.457	2.988

Examination of Online Achievement Results

On application of the equating shifts to the online tests, the performance of the cohort of schools undertaking the online tailored tests could be compared to the performance of that same cohort of schools in NAPLAN 2017. Additionally, ACT had 85% of their schools participating in the NAPLAN 2018 online tailored test, and so the ACT's 2018 online results in each domain and year level were compared to its NAPLAN 2017 results.

Following application of the standard equating methodology and the shifts described in the previous section, mean scale scores for the cohort of online schools were found to be outside of the historical bounds of year-on-year variation for that same cohort of schools. The extent of these inconsistencies varied by year level and domain. To address this variability, the decision was made by ACARA to rescale the NAPLAN 2018 online cohort scale score distributions to have the same mean that was observed in NAPLAN 2017 for that same cohort of schools. This decision was taken on the basis of historical evidence supporting the assumption that population estimates should not change significantly in consecutive years. This mean-shift adjustment was applied to each year level for each domain other than Writing. Additionally, a scaling factor was applied to the distributions of online scores,

consistent with the method used to scale the paper results each year. Details of the process of calculating and applying scaling factors are provided in Section 7.2. These two transformations, when applied in combination, are generally known as a linear transformation or linear shift.

While some differences were expected between performance scores on the paper and the online tests because the adaptive nature of the online test which in theory improves estimation of performance at the top and bottom end of the scales, further investigation revealed that the initial linear adjustment did not sufficiently resolve inconsistencies with historical performance at higher distributional moments for some domains and year levels, with certain standard deviation and percentile values identified as being outside of historical levels of variation. Specifically, it was determined that for Year 7 Reading, Year 9 Numeracy, and all year levels for Grammar and Punctuation, a different equating process should be applied to account for the larger than expected distributional differences that were observed.

Two-moment steady-state equating was applied to these selected year levels and domains. A preliminary step was undertaken to calculate (but not apply) a linear transformation between the 2017 and 2018 score distributions for the cohort of schools that undertook NAPLAN tests on paper in both 2017 and 2018. The linear transformation derived from this preliminary step was then applied to the 2017 scale score distribution for the online cohort of schools (who had also undertaken the tests on paper in 2017) to establish a projected mean and standard deviation for the 2018 online cohort. This step was undertaken to ensure that any systematic change observed for the cohort undertaking the tests on paper between successive calendar years was also applied to the online cohort, thus mitigating the introduction of additional systematic variation between outcomes across the two test modes. In other words, the projected (Gaussian) distribution reflected the distribution of scores that the online cohort would have been expected to attain had they undertaken the 2018 tests on paper. An inverse normal transformation of percentile ranks was then applied to transform the online students' scale scores onto the projected scale score distributions. The same transformation was applied to the item parameters in each of these domains and year levels to ensure that both students' scales scores and item difficulty scale locations were appropriately aligned.

Further scrutiny of the comparability of online school cohort performance with historical performance across the full score distribution and across jurisdictions led to an additional adjustment to the Grammar and Punctuation scale score distributions. Specifically, ACARA determined that scale scores falling below the national minimum standard were to be upwardly adjusted by the equivalent of around one standard error in order to address changes in the distribution of scores near the national minimum standard that were outside of the bounds of historical variation, but only to the extent that these adjustments were still within the bounds of measurement error associated with student scale scores. These adjustments were applied to both the Plausible Values and the WLE estimates to maintain consistency across all levels of NAPLAN reporting.

While NAPLAN results are comparable between assessment modes and previous years, individual student experiences of NAPLAN may differ due to a range of factors, including the mode of delivery or a student's performance on the day. For example, the Year 9 writing results appeared, on average, to favour online students. This is likely attributable to students' ability to revise, edit and improve their writing which is an identified advantage of online testing. It was agreed not to make any adjustments to the online scale for writing. More detail about equating of writing is included in the next section.

6.5 Calibration and Scaling of Writing

Background

As noted earlier, in 2018 two sets of two persuasive writing tasks were administered as part of NAPLAN. The rating of NAPLAN 2018 writing for all participating year groups was based on the same 10 criteria and the same marking guide used from 2011 through 2015 and 2017.

Raw score summary

Table 6.6 present the distributions of raw scores by year level for both calibration sample and census data. The distributions of raw scores shown were very similar from 2011 to 2018.

Table 6.6. NAPLAN 2011 – 2018 Writing Raw Score Distribution by Year Level

		Calibration Sample			Census Data		
Test Year	**Year Level**	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**
2011	3	1066	18.14	5.08	252901	19.42	5.12
	5	1131	23.56	5.90	258563	24.74	5.79
	7	2510	26.95	7.05	261475	28.67	6.53
	9	2401	30.31	8.10	244772	31.97	7.54
2012	3	10487	18.73	5.15	259654	19.43	4.96
	5	9644	23.70	5.71	240421	24.28	5.58
	7	20751	27.56	6.45	263986	27.72	6.36
	9	29151	30.60	7.45	253924	30.76	7.46
2013	3	10178	18.83	5.31	262679	19.43	5.25
	5	10008	23.80	5.97	258562	24.35	5.68
	7	19321	27.53	6.64	261373	27.60	6.45
	9	30230	30.69	7.61	254470	30.76	7.66
2014	3	10709	18.23	5.16	274335	18.41	5.24
	5	10337	23.52	5.54	263872	23.57	5.59
	7	19038	27.18	6.24	242127	27.16	6.37
	9	28305	30.67	7.04	255770	30.47	7.50
2015	3	11399	18.86	5.00	285722	19.46	5.03
	5	10671	23.91	5.53	267506	24.36	5.34
	7	26411	27.01	6.34	258921	27.12	6.44
	9	28348	26.07	6.38	253216	30.18	7.48
2016	3	11570	18.94	4.63	292494	19.46	4.57
	5	10879	23.19	5.02	279513	23.54	4.90
	7	27197	26.69	5.72	264959	26.62	5.83
	9	26360	29.50	6.54	235206	29.36	6.74
2017	3	11533	18.63	5.11	291019	19.23	4.90
	5	11410	23.50	5.62	290808	23.88	5.21
	7	26809	27.24	6.68	268162	27.29	6.53
	9	26958	30.54	7.92	252034	30.63	7.72
2018	3	10111	17.85	5.47	249623	18.73	5.23
	5	9967	22.44	5.90	251759	23.23	5.48

7	24901	26.11	6.34	236083	26.57	6.32
9	26014	29.13	7.49	213770	29.67	7.40

Equating Methodology

The equating of NAPLAN 2018 writing to the NAPLAN writing scale was conducted by the University of Western Australia (UWA) using a pairwise comparison methodology. Appendix K provides a summary of the UWA NAPLAN 2018 Pairwise Equating Summary. In previous years, identity equating had been recommended and employed. Identity equating implies that no scale shift is warranted. In 2017, the narrative writing calibration was performed by anchoring on the item difficulty locations to the values estimated in 2015.

Figure 6.31 shows the comparison graph of criterion delta locations between 2011 and 2018 and Figure 6.32 shows the comparison graph of criterion delta locations between 2015 and 2018. The graphs, with identity lines, show that the 2018 deltas are very similar to those from 2011 and those from 2015.

The decision was taken to use 2015 item parameter estimates and the corresponding raw score to scale score estimates for person locations for the purpose of reporting.

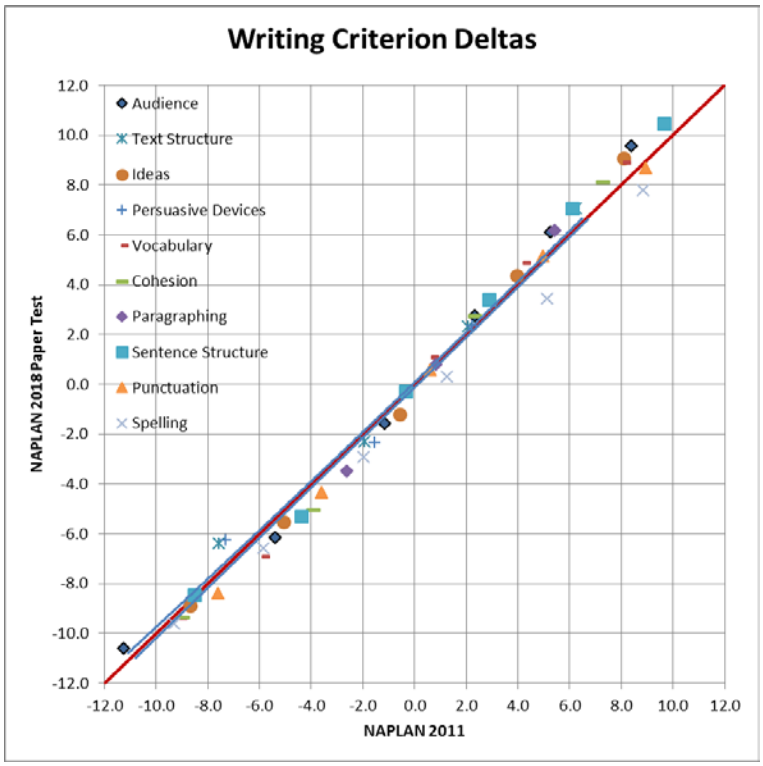

Figure 6.31. Writing deltas for 2018 against 2011

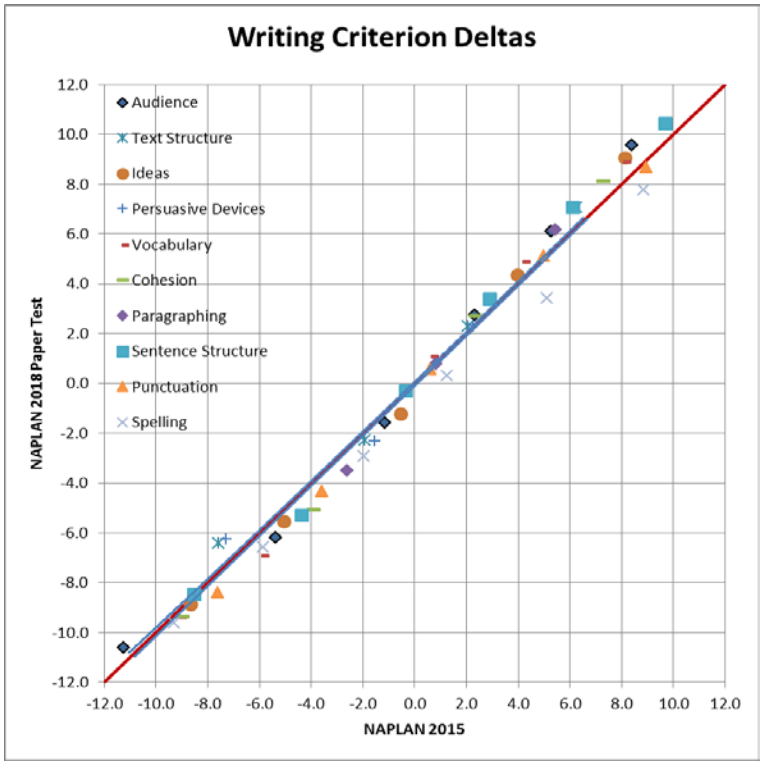

Figure 6.32. Writing deltas for 2018 against 2015

6.6 Estimating Standard Errors of Equating

Multiple steps were involved in the equating of reading, spelling, grammar and punctuation and numeracy. A standard error was estimated for each step. The standard errors were combined on the assumption that the errors from the steps are independent.

The errors considered in the equating processes over the course of the program are shown in Figure 6.33.

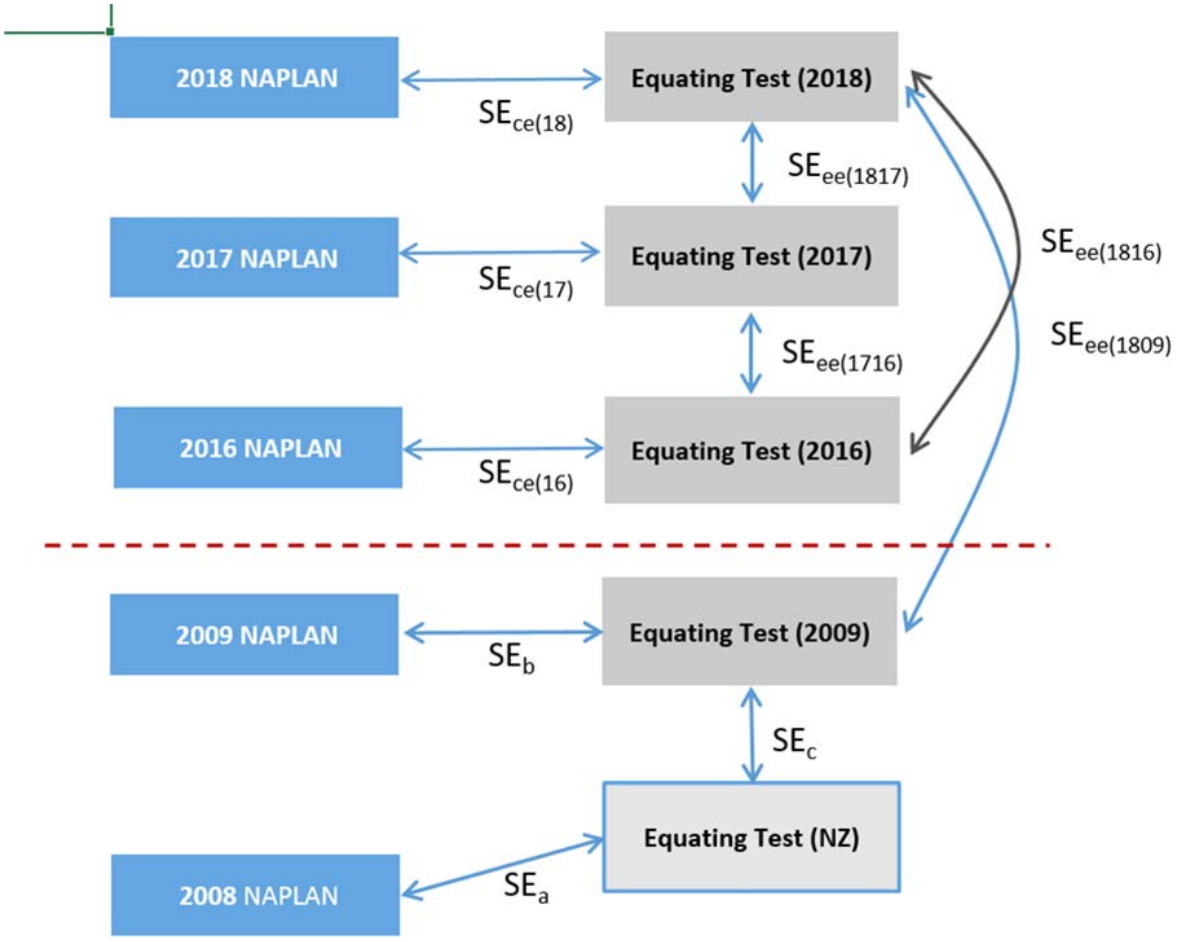

Figure 6.33. A schematic of the equating errors accumulated across NAPLAN administrations.

For each domain and year level:

- SE_a is the standard error associated with equating the offshore equating form and the 2008 NAPLAN test;
- SE_b is the standard error associated with equating the onshore equating form and the 2009 NAPLAN test;
- SE_c is the standard error associated with equating the offshore and onshore equating forms;
- $SE_{ce(18)}$ is the standard error associated with equating the NAPLAN 2018 test with the equating test (calibration to equating);
- $SE_{ce(17)}$ is the standard error associated with equating the NAPLAN 2017 test with the equating test (calibration to equating);
- $SE_{ce(16)}$ is the error associated with equating the NAPLAN 2016 test with the equating test; and
- $SE_{ee(1817)}$ is the standard error associated with equating the 2017 and 2018 administrations of the equating test (equating to equating); and so forth

For reporting results of NAPLAN 2018, the equating errors for equating the 2018 scale to the 2017, 2016 and 2008 scales are estimated by combining the relevant standard errors as follows:

$$SE_{2018to2017} = \sqrt{SE_{ce(17)}^2 + SE_{ce(18)}^2 + SE_{ce(1817)}^2}$$

$$SE_{2018to2016} = \sqrt{SE_{ce(16)}^2 + SE_{ce(18)}^2 + SE_{ce(1816)}^2}$$

$$SE_{2018to2008} = \sqrt{SE_a^2 + SE_c^2 + SE_{ee(1809)}^2 + SE_{ce(18)}^2}$$

It was decided in 2011 to include component *c* of equating error, associated with the offshore testing, in equating back to 2008. The reason is that even though most items are in common with the equating form in 2009 and subsequent years, a different population of persons attempted the items in the offshore equating exercise. Component *c* was included again in 2018.

Table 6.7 shows the standard errors of equating associated with each test domain and year level in logits.

Table 6.7. Standard Errors of Equating

Domain	Year	2018 to base	2018 to 2017	2018 to 2016
Reading	3	0.070	0.053	0.050
	5	0.072	0.075	0.056
	7	0.052	0.035	0.033
	9	0.056	0.036	0.034
Writing	3	0.137	0.201	0.191
	5	0.137	0.201	0.191
	7	0.137	0.201	0.191
	9	0.137	0.201	0.191
Spelling	3	0.089	0.063	0.070
	5	0.106	0.060	0.061
	7	0.102	0.052	0.056
	9	0.099	0.054	0.055
Grammar and Punctuation	3	0.108	0.086	0.085
	5	0.107	0.076	0.061
	7	0.093	0.052	0.058
	9	0.081	0.055	0.051
Numeracy	3	0.081	0.065	0.065
	5	0.075	0.044	0.041
	7	0.054	0.039	0.033
	9	0.058	0.040	0.048

*The base year for grammar & punctuation, numeracy, reading and spelling is 2008; base year for writing is 2011.
**The Writing equating error was calculated based on the pairwise equating data in a manner consistent with keeping the item parameters constant.

The equating errors are taken into account, together with sampling and measurement errors, in estimating the standard errors used to determine statistical significance in the comparisons between mean scores across years in NAPLAN reports. The equating errors are not included

when estimating standard errors of estimates used to determine statistical significance in the comparisons between mean scores of different subgroups on NAPLAN 2018. In estimating standard errors for percentages at or above minimum standards, the equating errors were applied to the cut-points for proficiency bands.

CHAPTER 7 REPORTING OF NAPLAN PERFORMANCE IN 2018

NAPLAN 2018 achievement scores for reading, numeracy, spelling and grammar and punctuation were reported on the NAPLAN vertical scales as they were for NAPLAN administrations 2008 through 2017. The NAPLAN 2018 writing achievement scores were reported on the same scale as the writing assessments from 2011 through 2017. This was made possible by applying the equating shifts and scale transformations necessary to bring the 2018 logit scores for each test in each domain onto the NAPLAN reporting scale, the details of which are reported in previous chapters. As in previous years, student results were reported against proficiency bands. The cut-points for proficiency bands established for NAPLAN 2008 reporting were used for NAPLAN 2018 as in previous cycles. The scale equating enabled achievement scores to be compared across NAPLAN administration years for reading, numeracy, spelling and grammar and punctuation and across 2011 to 2018 for writing. Additionally, it enabled the achievement scores from sitting the 2018 online tests to be compared with scores obtained from sitting the paper tests.

7.1 Proficiency Estimates

As for previous NAPLAN cycles, population statistics for the reporting of NAPLAN 2018 achievement at the state/territory and national levels were estimated using *plausible values*. In this approach, student achievement is not estimated as a single value or point estimate such as one would do using weighted likelihood estimates (WLEs). Instead, a range of values from the posterior distribution is generated for each student. The plausible values represent a random selection from this distribution.

Using plausible value methodology to obtain proficiency estimates for populations and subpopulations is a standard approach in large scale national assessment programs, as well as in international assessment programs such as the Programme for International Student Assessment (PISA). An introduction to the conceptual basis of plausible values and calculations involving them in the context of PISA is described in a report from the Organisation for Economic Co-operation and Development (OECD, 2009).

Paper tests

Five plausible values were drawn for each student in each domain using *ACER ConQuest*. The plausible values for reading, spelling, grammar and punctuation and numeracy were drawn concurrently, based on a multidimensional item response model with latent regression (Wu, et al, 2007). In drawing the plausible values, conditioning variables were used as regressors in the model. The regression model used 2018 was the same as that used in previous NAPLAN cycles. The conditioning variables used in the model were gender, LBOTE status, Indigenous status, parental education, parental occupation, school geolocation, school sector, and the school reading WLE average score as a measure of average proficiency at the school level. A diagrammatic representation of the model is shown in Figure 7.1.

The categorical variables (gender, LBOTE status, Indigenous status, parental education, parental occupation, school geolocation and school sector) were included in the model using what are referred to as *indicator variables*. In this approach, a single categorical variable is recoded by multiple indicator variables that are coded with a “1” to denote the presence of a category level, and a “0” to denote the absence of the category level. In general, it takes $k - 1$

indicator variables to recode *k* category levels. For example, the variable gender was designated as having three categories, namely, *male*, *female*, and *missing*. The categories of gender were recoded for each student using one indicator variable to denote *female*, and a second indicator variable to denote *missing*. If the pair of indicator variables had the values 1 and 0 respectively, this meant that the gender category for the student was *female*; when the indicator variables had the values of 0 and 1, then the gender category was *missing*. When both indicators were 0, this indicated that the gender category for the student was *male*. In a similar fashion, this approach was applied to the other categorical variables used in the model.

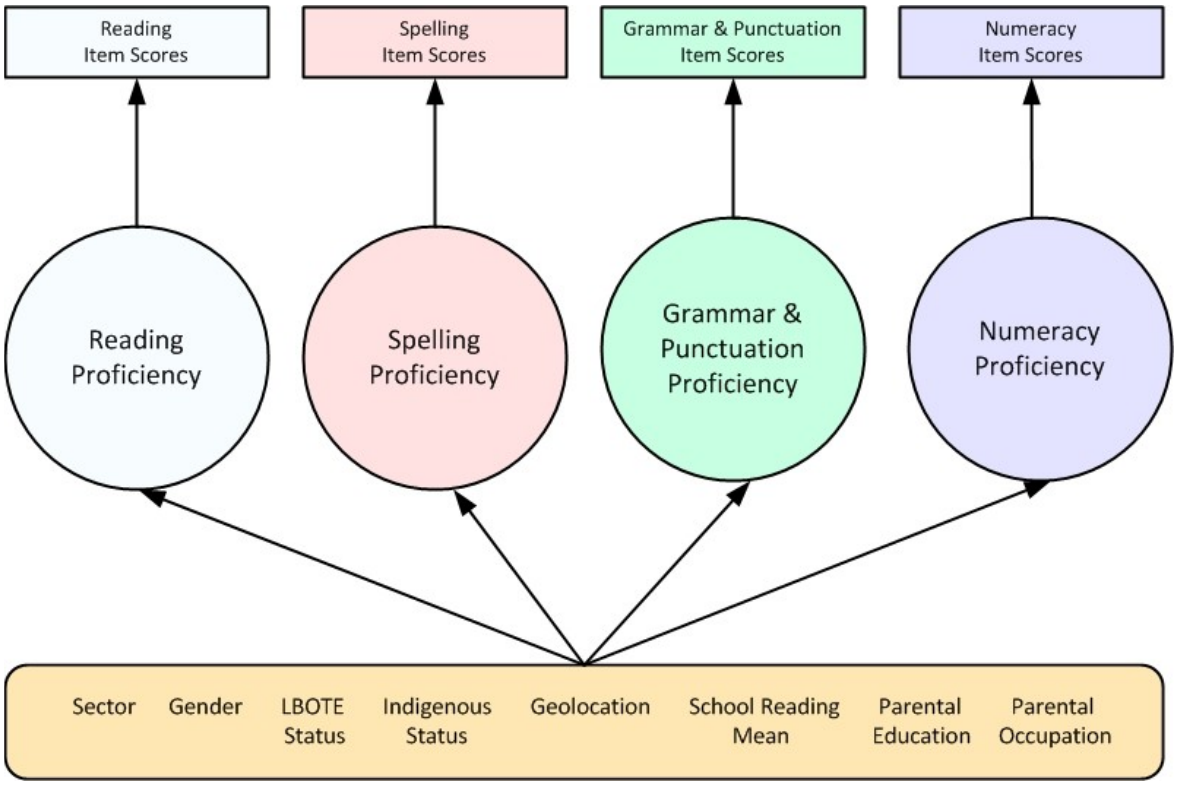

Figure 7.1. Conditioning variables for the multidimensional item response model with latent regression (paper tests)

Due to differences between states/territories with respect to the distributions of students across these variables, some categories of these conditioning variables may not have been observed or may have been perfectly correlated with other conditioning variables. For example, during one NAPLAN administration, in year level 3, the indicator for school geolocation indicating whether this information was missing was perfectly correlated with school sector indicator for home-schooled students. In these cases, categories of conditioning variables were combined or conditioning variables were removed from the generation of plausible values for the state/territory in question.

The plausible values were drawn separately for each jurisdiction to allow for the possibility of different relationships between proficiency estimates and conditioning variables across the jurisdictions. Plausible values were drawn for all students, including absent students and

students that had withdrawn from taking the test. Exempt students were not included.

The plausible values for writing were drawn concurrently for Years 3, 5, 7 and 9 and separately for each state/territory. In this analysis, school sector, gender, LBOTE status, Indigenous status, parental education, parent occupation, school geolocation, year level and the school writing WLE mean score were included as conditioning variables. The WLE mean score of a school was calculated based on students who participated in the writing test. For schools with no student who participated in the writing test, the school WLE average score was set at the jurisdiction mean.

Online tests

For the online tests, two new conditioning variable were added to the model as described in section 4.4. The PVs were drawn concurrently for the six participating jurisdictions. This made it necessary to include jurisdiction in the set of conditioning variables. Another conditioning variable that was only added specifically for online grammar and punctuation (G&P) was information about which test the student sat as that was determined by their third testlet in the reading test. A representation of the model is shown in Figure 7.2.

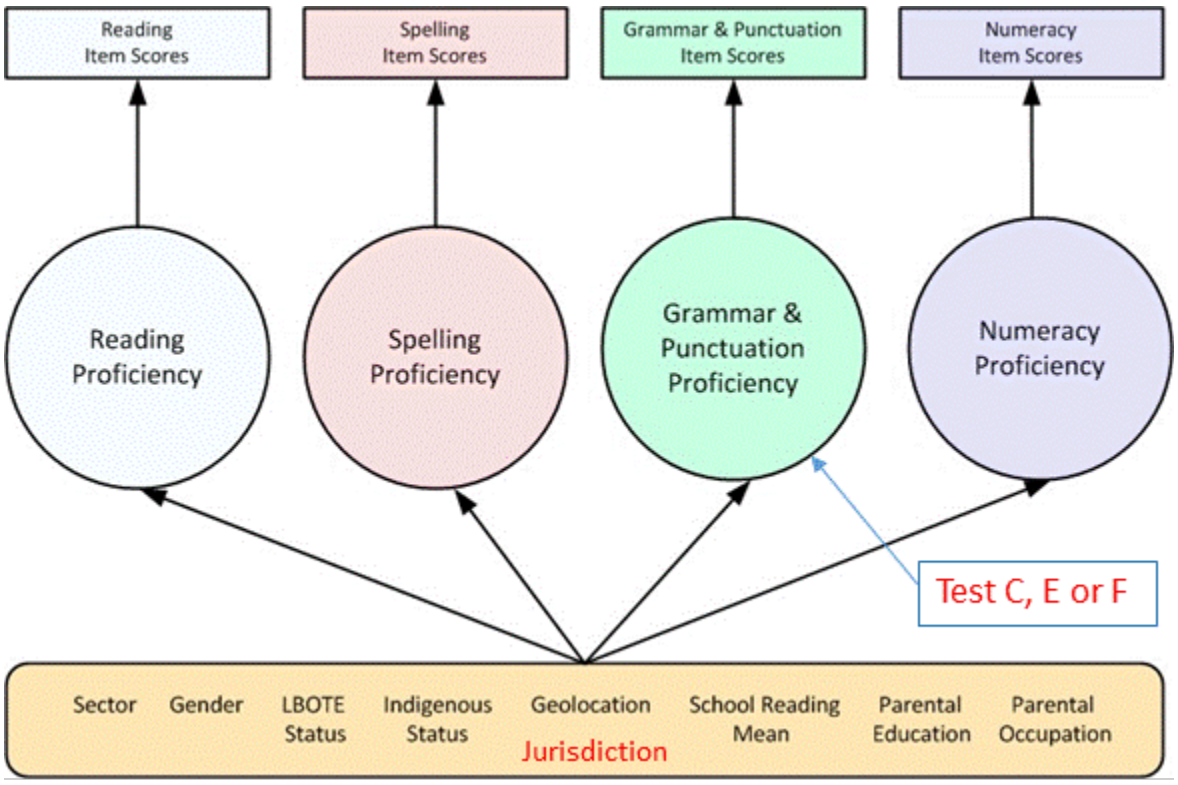

Figure 7.2. Conditioning variables for the multidimensional item response model with latent regression (Online tests)

The PVs for writing were drawn for online students in Years 3, 5, 7 and 9 concurrently as for the paper students. The PVs were also drawn concurrently for the six participating jurisdictions, with jurisdiction added to the set of conditioning variables.

For each domain and each year level, the five sets of plausible values were used to calculate means, standard deviations, percentile

s and percentages of students within proficiency bands at the jurisdictional and national levels. The statistics were calculated for the full population of students and by selected background variables, such as gender, language background and aboriginal status, and including the absent students and the students that had withdrawn from taking the test. The plausible values were also used to obtain estimations of measurement errors.

Estimates of sampling and measurement errors were combined to obtain final standard errors for the performance statistics reported for the census data. The standard errors were used to determine statistical significance of mean differences and percentage differences in NAPLAN 2018 performance in the reports. Relevant equating errors were taken into consideration, in addition to sampling and measurement errors, to estimate standard errors and evaluate statistical significance of mean and percentage differences between 2018 and 2017 as well as 2018 and 2008 for reading, numeracy, spelling, and grammar and punctuation and between 2018 and 2017 as well as 2018 and 2011 for writing.

7.2 Reporting NAPLAN 2018 Student Achievement on NAPLAN Reporting Scales

For each domain at each year level, a linear transformation was applied to scores on the delta-centred logit scale to correct for the spread in the scores and to apply the appropriate equating constant to put the scores onto the NAPLAN vertical domain logit scale.

The transformation formulae were determined using plausible values drawn on the delta-centred scale for each test based on the 2018 national scientific sample before the full cohort data were available. The 2018 preliminary latent distributions of student achievement were estimated based on the 2018 scientific sample on the paper-based test, with the student weights applied. The means and standard deviations calculated provided preliminary estimates of the population latent distributions.

The standard deviations obtained from the preliminary results based on the scientific sample were then compared to the population standard deviations of the domain's *base year*. For reading, spelling, grammar and punctuation, and numeracy, the base year was 2009, while for writing, the base year was 2011.The ratio of the base year standard deviation to the 2018 standard deviation was calculated for each domain at each year level. A ratio that was greater than 1.0 indicated that the base year test spread the students out more than the 2018 test did for that domain at the particular year level. Conversely, a ratio that was less than 1.0 indicated that the 2018 test spread the students out more than the base year test for that domain at that particular year level. These ratios of standard deviations were used as scaling factors for paper tests to correct for the different distributions.

For the online test, the same linear transformations were used except that a different set of scale factors were applied. The online scale factors were calculated based on comparing the preliminary latent distribution standard deviations for the ACT with the standard deviations reported in 2017 NAPLAN National Report for the ACT. As per the additional adjustments described under the heading *Examination of online achievement results*, an additional transformation process was applied to Year 7 Reading, Year 9 Numeracy and all year levels for Grammar and Punctuation. Specifically, this transformation was applied to the Plausible Values distributions, but this time by calculating z scores from the Plausible Values distributions as opposed to applying an inverse normal transformation to percentile ranks (which was the approach described in Chapter 6 for transforming the discrete distributions of

student scale scores).

For each domain at each year level, a first linear transformation was applied to scores on the delta-centred logit scale to correct for the spread in the scores and to apply the appropriate equating constant to put the scores onto the NAPLAN vertical domain logit scale. The scaling factor was applied for each domain at each year level, with the estimated population mean as the pivot point of the transformation.

For each domain at each year level in 2018, the first transformation of a logit score to put it on the NAPLAN domain scale in logit is given by:

$$TranformedLogitScore = SF \cdot (LogitScore - LocalMean) + LocalMean + EqShift \quad (7.1)$$

where

LocalMean = the mean of the latent distribution estimated using the 2018 scientific sample based on the delta-centred item parameters,

SF = the scale factor that was calculated from the ratio of the base year standard deviation to the 2018 standard deviation.

EqShift = the equating constant pertinent for the domain at the particular year level.

The values for *LocalMean*, *SF*, and *EqShift* are presented in Table 7.1 for each year level by domain.

The same transformation was applied to the WLE ability logit scores in the score equivalence table, the item parameters and the plausible values. For writing, the scaling factor and equating shifts were set to one and zero, respectively, as shown in Table 7.1.

For each domain, estimates in logits were transformed to the NAPLAN reporting scale scores established in NAPLAN 2008 as follows:

$$NAPLANScaleScore = 100 \cdot (Score_{logit} - DomainMean)/(DomainStdDeviation) + 500 \quad (7.2)$$

where *DomainMean* and *DomainStdDeviation* are the estimated overall domain mean and overall domain standard deviation calculated using the 2008 scientific sample. These are presented in Table 7.2.

It should be noted that for each domain, the standard error (SE) in logits associated with each WLE estimate was transformed to the NAPLAN scale metric as follows:

$$SE_{NAPLANScale} = 100 \cdot \frac{SE_{logit}}{DomainStdDeviation}$$

Table 7.1. Parameters for transforming the 2018 logit scores to the NAPLAN Scales

Year	Domain	Local Mean (paper)	Local Mean (online)	Scaling Factor (paper)	Scaling Factor (online)	Equating Shift (online and paper)	Online shift to Paper
Year 3	Reading	0.0467	-0.3323	1.4918	1.2716	0.1201	0.3447
	Writing	—*	—*	1.0000	1.0000	0.0000	0.0000
	Spelling	-0.6481	-0.9919	1.0159	0.9050	-0.5864	0.3364
	Grammar and Punctuation	0.0137	-0.0197	1.3805	0.7050	0.2899	0.1458
	Numeracy	0.3165	0.1492	0.9165	0.9637	-1.0347	0.1893
Year 5	Reading	0.1047	-0.1984	1.4915	1.3581	1.2201	0.2316
	Writing	—*	—*	1.0000	1.0000	0.0000	0.0000
	Spelling	-0.2194	-0.3694	0.9869	0.8469	1.2324	0.1402
	Grammar and Punctuation	0.1654	0.0101	1.3673	0.5911	1.1468	0.1011
	Numeracy	0.1751	-0.0369	0.8682	0.8988	0.5522	0.1938
Year 7	Reading	-0.1033	-0.2503	1.1116	1.3436	1.8599	0.2535
	Writing	—*	—*	1.0000	1.0000	0.0000	0.0000
	Spelling	-0.1911	-0.0290	1.0453	1.0100	2.2500	0.0676
	Grammar and Punctuation	0.3104	0.1793	1.0836	0.5750	1.5073	0.1644
	Numeracy	-0.2473	-0.3855	0.9990	0.9864	1.8082	0.3115
Year 9	Reading	0.1954	0.0596	1.0497	0.9322	2.1810	0.1874
	Writing	—*	—*	1.0000	1.0000	0.0000	0.0000
	Spelling	-0.3219	-0.1663	1.1059	0.9384	3.4075	-0.0758
	Grammar and Punctuation	-0.1476	-0.2851	1.1470	0.5426	2.4571	0.1260
	Numeracy	-0.6355	-0.9755	0.9149	0.7411	2.9881	0.3745

*Not applicable.

Table 7.2. Domain Mean and Standard Deviation for Transforming Logits to NAPLAN Scale Scores

Domain	Domain Mean	Domain SD
Reading	1.1629	1.4867
Writing	1.1160	3.3679
Spelling	0.9406	2.6241
Grammar and Punctuation	1.2529	1.3605
Numeracy	0.8102	1.6652

7.3 Score Equivalence Tables

To facilitate rapid generation of student and school reports, score equivalence tables for converting raw scores to weighted likelihood estimates (WLEs) and their corresponding NAPLAN scale scores were generated for each test and provided to the jurisdictions' Test Administration Authorities. The equivalence tables enable the TAAs to locate individual students on NAPLAN reporting scales using the raw scores for each test (paper and online). The NAPLAN 2018 score equivalence tables for the paper tests are presented in Appendix I. The tables show the scores and the associated standard errors in logits and in NAPLAN scale scores.

The preliminary national mean, the 20th percentile score and the 80th percentile score (to give the approximate range of the middle 60 percent) based on the national scientific sample were provided for each domain and year level for reporting to schools and parents.

7.4 Reporting against Proficiency Bands

As in previous NAPLAN administrations, student achievement was also reported against proficiency bands for each domain. The ten proficiency bands on the NAPLAN reporting scales had the cut-points set at equal intervals apart. Year 3 results were reported against Band 1 to Band 6, Year 5 results reported against Band 3 to Band 8, Year 7 results reported against Band 4 to Band 9, and Year 9 results reported against Band 5 to Band 10. The cut-points for the proficiency bands were developed in 2008 and used in reporting the NAPLAN 2018 results.

The NAPLAN reporting scale for each domain was standardized to be similar in length. Each scale has the same number of proficiency bands and the same nine cut-points on the transformed scales. The performance distribution at each year level could span approximately six bands. A student whose proficiency fell within a specific band would be expected to score at least 50% correct on a test made up of items that fell into that band.

The cut scores separating the proficiency bands are presented in Table 7.3. The cut scores are different on the logit scales for the domains but are the same on the transformed NAPLAN scales.

Table 7.3. Proficiency Bands Cut Scores

Band Cut Score	Scale Score	Logits				
		Reading	Writing	Spelling	Grammar and Punctuation	Numeracy
9/10	686	3.928	7.380	5.821	3.783	3.907
8/9	634	3.155	5.629	4.457	3.076	3.042
7/8	582	2.382	3.878	3.092	2.369	2.176
6/7	530	1.609	2.126	1.728	1.661	1.310
5/6	478	0.836	0.375	0.363	0.954	0.444
4/5	426	0.063	-1.376	-1.001	0.246	-0.422
3/4	374	-0.710	-3.128	-2.366	-0.461	-1.288
2/3	322	-1.483	-4.879	-3.730	-1.169	-2.154
1/2	270	-2.257	-6.630	-5.095	-1.876	-3.020

Figure 7.3 depicts how student results are reported against the proficiency bands. Results in each year level are reported against six bands. For Year 3, scores above Band 6 are reported against Band 6. For Year 5, scores above Band 8 are reported against Band 8 and scores below Band 3 are reported against Band 3. For Year 7, scores above Band 9 are reported against Band 9 and scores below Band 4 are reported against Band 4. For Year 9, scores below Band 5 are reported against Band 5.

The yellow band for each year level in Figure 7.3 is identified as the national minimum standard for that year level. Band 2 is the national minimum standard for Year 3, Band 4 for Year 5, Band 5 for Year 7 and Band 6 for Year 9. Students are deemed to have performed above national minimum standard if their scores fall in the green bands at their respective year level and below national minimum standard if their scores fall in the orange band.

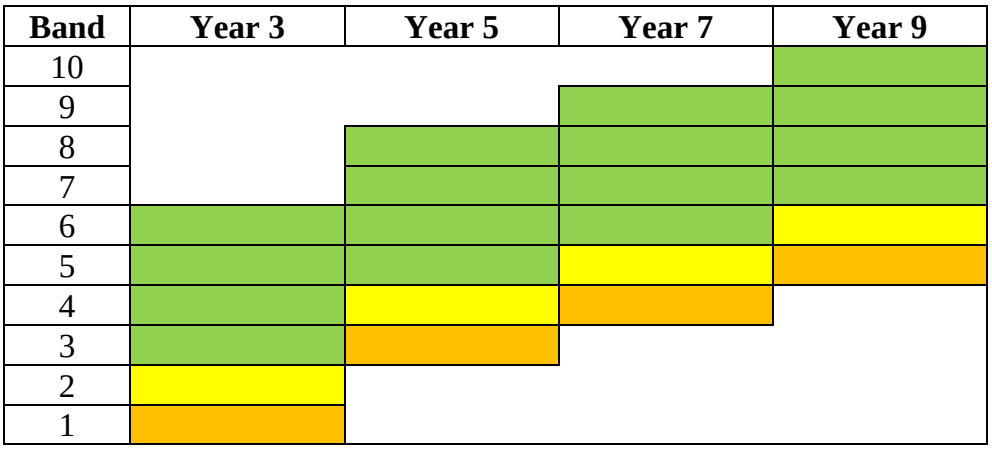

Figure 7.3. Reporting against the NAPLAN proficiency bands

7.5 National Reports

The NAPLAN 2018 Summary Information was released in August 2018. The summary information provides results in each domain at each year level and by state/territory and nationally. This information was released around the same time that student reports were distributed to parents. The NAPLAN 2018 National Report released in early 2019 includes subgroup results by gender, language background, Indigenous status, geolocation, parental education and parental occupation.

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APPENDIX A. NAPLAN 2018 SAMPLING REPORT FOR CALIBRATION SAMPLE AND EQUATING SAMPLE

NAPLAN 2018

Sampling Report for Calibration Sample and Equating Sample

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PREPARED FOR:
AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY
OCTOBER 2018

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Purpose

The purpose of this report is to provide information regarding the 2018 NAPLAN Calibration and Equating Samples that complements existing NAPLAN technical documentation. It should be read in conjunction with the *NAPLAN Calibration Sample Weighting* document.

These samples relate to the paper based version of NAPLAN. Schools and students participating in the online assessment were excluded from the calibrating and equating samples in 2018.

Sample Frames

The NAPLAN calibration and equating studies each consisted of two samples: primary and secondary. For the calibration sample, one sample was one drawn based on the primary year levels (Year 3/Year 5) and one drawn based on the secondary year levels (Year 7/Year 9). This same procedure was followed for the NAPLAN equating sample. Figure 1 illustrates the relationship between NAPLAN year levels and primary and secondary schools by state jurisdiction.

Figure *1*: Relationship between state/territory, NAPLAN year levels and Primary/Secondary schooling.

<table>
<tr><td>State/Territory</td><td>Year 3</td><td>Year 5</td><td>Year 7</td><td>Year 9</td></tr>
<tr><td>ACT</td><td colspan="2" rowspan="7">Primary</td><td colspan="2" rowspan="7">Secondary</td></tr>
<tr><td>NSW</td></tr>
<tr><td>NT</td></tr>
<tr><td>TAS</td></tr>
<tr><td>VIC</td></tr>
<tr><td>QLD</td></tr>
<tr><td>WA</td></tr>
<tr><td>SA</td><td colspan="3">Primary</td><td>Secondary</td></tr>
</table>

As shown in Figure *1*, South Australia (SA) is the only state to continue to treat Year 7 as a primary year level.

Source data

ACARA provided a list of Australian schools which included the number of students enrolled at each school in Years 3, 5, 7 and 9 in 2017. Additional demographic information such as state, sector, geographic location and aggregate NAPLAN performance data were also provided.

Exclusions

Schools were excluded from the calibration and/or equating sample if any of the following conditions were met:

Calibration Primary and Secondary Samples	Equating Primary and Secondary Samples
ACT	ACT
2018 NAPLAN online schools	2018 NAPLAN online schools
2018 Trial schools	2018 Trial schools
2017 Equating schools	2017 Equating schools
Missing NAPLAN Total Cohort or 2017 NAPLAN performance data	Missing NAPLAN Total Cohort or 2017 NAPLAN performance data
	Steiner, Montessori and Brethren (M.E.T) schools
Very remote schools in NSW or WA	Remote and very remote schools in all jurisdictions
Special schools	Special schools
Distance schools	Distance schools
Schools with no enrolments in all relevant year levels	Enrolments < 15 in all relevant year levels
Schools sampled in the 2018 Equating samples	
	Schools sampled in the TIMSS field trial and main study
	Schools sampled in the PISA main study

In 2018, ACT was excluded from both the calibration and equating samples, as directed by ACARA, due to a very high proportion of schools participating in the online version of the assessment.

Measures of enrolment size

The measures of enrolment size for a particular year level was based on the enrolment size in the equivalent year level for the calendar year prior. That is, the 2017 enrolment numbers given in the source data were used to estimate 2018 enrolment sizes.

Calibration sample frames

The calibration primary sample frame consisted of 5300 schools and the calibration secondary sample frame consisted of 1378 schools.

Equating sample frames

The equating sample frames comprised of 3502 primary schools and 841 secondary schools.

Sampling methodology

Once schools meeting the exclusion criteria were removed from the sample frame, four samples were drawn: Calibration Primary, Calibration Secondary, Equating Primary and Equating Secondary.

The following outlines the sampling methodology applied to select schools for each of the calibration and equating samples.

Calibration sample

Both the primary and secondary calibration samples were explicitly and implicitly stratified (as described in the following section) and sorted. Schools were then selected using random

start, systematic sampling where schools within each explicit stratum had equal probability of selection. This equal probability methodology was used at the school level within explicit stratum because all students in the target year levels in selected schools were to be selected in the sample.

Equating sample

Both the primary and secondary samples were explicitly and implicitly stratified (as described in the following section) and sorted. Schools were then selected using random start, systematic sampling where schools within each explicit stratum were selected using probability proportional to size (PPS). The PPS methodology was used because for each sampled school, only one class per target year level was to be selected. Selecting schools based on equal probability, the method used for the calibration samples, would bias the sample towards students from smaller schools.

Explicit stratification

Calibration sample

For the calibration samples, the sample frames were explicitly stratified by state/territory[1] (n=7) and school sector[2] (n=3), resulting in 21 explicit strata. There were only seven jurisdictions available for sampling, instead of the usual eight, because ACT schools were excluded from both the calibration and equating samples.

Equating sample

For the equating samples, the sample frames were explicitly stratified by state/territory (n=7) and school sector (n=3), except in the case of Northern Territory (NT) and Tasmania (TAS) where sector was not used for explicit stratification[3]. This resulted in a total of 17 explicit strata.

Implicit stratification

Within each explicit stratum, for all four samples, schools were implicitly stratified by the variables detailed in Table 1.

Table 1 Implicit stratification variables

Implicit Stratification Variable	Description
Sector	School sector (Catholic, Government, Independent).
SchtypeID	An indicator denoting the inclusion (or absence of) year 7 students in the sample.
Geolocation	Geographic location based on ABS remoteness code provided by ACARA.
NAPLAN performance	A numeric value provided by ACARA for each school, representing NAPLAN performance across all year levels and domains at the school.
MeanENR	Average of student enrolments across the target year levels within each school.

[1] NSW, NT, QLD, SA, TAS, VIC, WA
[2] Catholic, Government, Independent
[3] Combining sectors for sampling purposes for these states was an operational decision made in 2016 to reduce survey burden on schools in smaller jurisdictions.

Sector

Sector was included as an implicit stratification variable only where it was not used as an explicit stratification variable.

SchtypeID

SchtypeID was named PriSchtypeID for the primary samples and SecSchtypeID for the secondary samples. The coding scheme was consistent with 2017 procedures.

PriSchtypeID

PriSchtypeID was set to 1 if the primary school had only Year 7 students enrolled and no Year 3 or 5 students (by definition this only occurs in SA). It was set equal to 2 for all other primary schools.

SecSchtypeID

SecSchtypeID was set to 1 if the secondary school had no Year 7 students but had more than five Year 9 students (by definition this can only occur in states other than SA). It was set equal to 2 for all other secondary schools.

Geolocation

The geolocation value was based on the ABS remoteness code:

ABS Remoteness Code	Description
0	Major Cities of Australia
1	Inner Regional Australia
2	Outer Regional Australia
3	Remote Australia*
4	Very Remote Australia*

*excluded from the equating sample

NAPLAN performance

Within each state/territory, the NAPLAN performance values for schools were used to determine quintiles for NAPLAN performance levels. The quintile cut scores used to determine the performance levels within each state are included in Table 2.

Table 2 NAPLAN performance value cut-points for percentile groups

Calibration Primary Percentiles (within state)				
State/Territory	**20**	**40**	**60**	**80**
NSW	-0.4576	-0.1663	0.0753	0.3449
NT	-2.8201	-2.4024	-1.8499	-0.8962
QLD	-0.5368	-0.3015	-0.0905	0.1511
SA	-0.6458	-0.3534	-0.1793	0.0740
TAS	-0.5879	-0.3565	-0.1444	0.1221
VIC	-0.2819	-0.0717	0.1232	0.3203
WA	-0.4634	-0.2325	0.0055	0.2857

Calibration Secondary Percentiles (within state)				
State/Territory	**20**	**40**	**60**	**80**
NSW	-0.4854	-0.1695	0.0912	0.4010
NT	-3.1061	-2.6996	-2.3880	-1.0688
QLD	-0.5867	-0.3202	-0.0964	0.1414
SA	-0.7383	-0.3850	-0.1741	0.0891
TAS	-0.6248	-0.4136	-0.2765	0.2375

VIC	-0.3663	-0.1502	0.0692	0.2957
WA	-0.4101	-0.0988	0.0878	0.3428

Equating Primary Percentiles (within state)				
State/Territory	**20**	**40**	**60**	**80**
NSW	-0.3753	-0.1136	0.1222	0.3764
NT	-0.9358	-0.6597	-0.3121	-0.1522
QLD	-0.4574	-0.2077	-0.0162	0.2013
SA	-0.4944	-0.2539	-0.0880	0.1281
TAS	-0.5908	-0.3243	-0.0730	0.1542
VIC	-0.2375	-0.0263	0.1758	0.3636
WA	-0.4401	-0.1997	0.0777	0.3098

Equating Secondary Percentiles (within state)				
State/Territory	**20**	**40**	**60**	**80**
NSW	-0.4669	-0.1625	0.1106	0.3801
NT	-0.9696	-0.5367	-0.4313	
QLD	-0.3827	-0.1976	-0.0382	0.1821
SA	-0.5867	-0.3441	-0.0898	0.1049
TAS	-0.5878	-0.4274	-0.1863	0.0285
VIC	-0.3775	-0.1685	0.0276	0.3445
WA	-0.3730	-0.0921	0.1297	0.3569

MeanENR

For each sample, the mean enrolment size determined by estimating the mean of enrolments for each target year level, where the enrolment size was greater than zero. For example, the primary enrolment size for a school in SA was equal to the mean enrolment across Years 3, 5 and 7 while for the other states/territories it was equal to the mean enrolment across Years 3 and 5.

Sample selection

Selecting schools

Further explanation of the technical aspects of selecting schools, including relevant sampling parameters, are detailed in Appendix B.

Sample sizes

The following table outlines the sample sizes for the Calibration and Equating samples:

	Calibration Sample		**Equating Sample**	
	Primary	**Secondary**	**Primary**	**Secondary**
NSW	48	48	33	42
NT	25	17	6	2
QLD	48	48	19	28
SA	45	46	8	11
TAS	30	30	6	6
VIC	48	48	26	33
WA	45	46	11	15
Total	**289**	**283**	**109**	**137**

Equating samples

For the Equating samples, sampled schools were also assigned to one of the three assessment domains: Reading (R), Language Conventions (LC) or Numeracy (N)[4].

	Primary Sample			Secondary Sample		
	R	LC	N	R	LC	N
Year 3	36	37	36			
Year 5	36	37	36			
Year 7	3	2	3	42	42	42
Year 9				45	46	46

Substitute schools

Up to two substitute schools were selected for each sampled school. The overall numbers of first substitute and second substitute schools was the same, or slightly less than the number of selected schools (as shown in Table 3). In some cases, only one substitute school could be selected. Selection of substitute schools is consistent with the methodology used in PISA (OECD, 2012).

Table 3 Number of selected and substitute schools

Sample type	Selected	First Substitute	Second Substitute	Total
Calibration Primary	289	289	289	867
Calibration Secondary	283	267	210	760
Equating Primary	109	109	109	327
Equating Secondary	137	134	126	397

Expected sample sizes

The expected number of students sampled for the Calibration Sample was equivalent to the sum of all enrolments at the target year levels for selected schools. The expected Calibration Sample sizes for 2018 are shown in Table 4. For example, approximately 10000 students were expected to be included in the calibration sample for Year 3 while 28000 students were expected to be included at Year 9. Secondary schools, in general, have higher enrolment numbers per school than primary schools and hence more secondary school students were expected to be included in the sample, given that the number of schools selected at each level (primary and secondary) was approximately equal.

Table 4 Expected Calibration Sample sizes by year level

Year	Sum ENR
Year 3	10435
Year 5	10388
Year 7[5]	25678
Year 9	27850

[4] The Equating Sample does not include the Writing domain.
[5] Comprised of 1261 Year 7 students from SA within the Primary Calibration Sample and 24417 students from the Secondary Calibration Sample.

For the equating sample, an indication of the likely number of students included in the sample was estimated by multiplying the number of schools by the target cluster size for each year level. These figures assume 25 students per class for the primary sample and 20 students per class for the secondary sample.

As shown in Table 5, approximately 2700 students are sampled at each year level across the 3 domains.

Table 5 Expected equating sample sizes by year level

Year	Number of Schools	Expected Total Sample Size (R and LC and N)	Expected Sample Size Per Domain
Year 3	109	2725	908
Year 5	109	2725	908
Year 7	134	2680	893
Year 9	137	2740	913

Table 6 Equating sample number of schools by domain and year level

Year	R	LC	N
Year 3	36	37	36
Year 5	36	37	36
Year 7[6]	45	44	45
Year 9	45	46	46

[6] Comprising 3 R, 2 LC and 3 N primary schools and 42 R, 42 LC and 42 N secondary schools.

Appendix A.1

Sample Frame

The ACARA sample frame totals displayed in Table 7 and Table 8 are based on the original file from ACARA after the exclusions from both the calibration and equating samples have been removed. Hence, totals for ACT are not available.

The original sample frame provided by ACARA contains 2017 enrolment information. The number of schools per state/territory is shown in Table 7 compared to ABS 2017 totals. At the time of sampling, schools participating in NAPLAN online had been confirmed in ACT (n=108), NSW (n=561) QLD (n=171), SA (n=141), VIC (n=131) and WA (n=277) and were excluded from the sample frame. Both NT and TAS did not participate in NAPLAN online.

Table 7 Number of schools per state/territory

State/Territory	ABS All (2017)	ACARA Calibration Primary Sample Frame	ACARA Calibration Secondary Sample Frame	ACARA Equating Primary Sample Frame	ACARA Equating Secondary Sample Frame
ACT	129	-	-	-	-
NSW	2920	1635	431	1439	330
NT	184	118	65	21	4
QLD	1659	1058	290	700	147
SA	690	371	124	199	38
TAS	255	172	60	94	43
VIC	2125	1475	297	1074	236
WA	1010	471	111	320	43

(ABS, 2018a)

Table 8 contains student enrolment totals by year level and state/territory while

Table 8 ACARA Sample Frames enrolment totals by year level and state/territory

ACARA Calibration Primary Sample Frame containing 2017 enrolment information

State/Territory	Pre Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
ACT	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW	66415	65525	65457	64511	65006	62649	60380	7842	7529	7290	6971	6063	5651
NT	2159	2122	2191	2045	1986	1914	1875	776	712	710	486	327	234
QLD	44143	44868	45910	45326	45566	43755	42356	8502	8234	7946	5750	7075	6761
SA	11852	11714	11869	12028	12116	11731	11330	10454	3224	3211	3202	2944	2642
TAS	4849	4716	4963	5090	5073	4932	4850	1041	1045	1099	1026	414	284
VIC	58942	58232	57903	57240	57695	55873	53526	6970	6889	5998	5629	5130	4746
WA	17682	17705	17764	17716	17859	17738	16966	4343	4271	4096	4068	3619	3402

ACARA Calibration Secondary Sample Frame containing 2017 enrolment information

State/Territory	Pre Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
ACT	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW	4833	5000	4998	5137	5219	5760	5935	43278	42861	42338	42225	34895	30840
NT	803	807	818	798	738	746	793	1410	1374	1388	1144	844	622
QLD	5233	5308	5597	5687	5942	6802	6834	32448	31694	30481	21933	29367	27062
SA	1576	1622	1605	1735	1705	1857	2056	3183	10767	10463	10884	10098	9418
TAS	607	645	628	731	737	809	908	3302	3344	3523	3518	868	625
VIC	3934	3822	3842	3942	4178	4798	4923	30369	30111	29582	28717	27013	23728
WA	1733	1882	1886	2025	2316	2589	2602	13349	13142	12670	12584	11250	10229

ACARA Equating Primary Sample Frame containing 2017 enrolment information													
State/Territory	**Pre Year 1**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**
ACT	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW	79918	78718	78741	78358	78438	75798	72588	6710	6516	6322	6355	5370	5002
NT	1161	1053	989	1018	1056	970	918	0	0	0	0	0	0
QLD	45697	46343	47705	47114	47204	45065	43587	4809	4647	4349	3317	4158	4061
SA	9252	9067	9194	9227	9381	8891	8530	7671	836	800	793	704	659
TAS	3679	3585	3743	3839	3739	3688	3526	210	197	198	202	205	183
VIC	56881	56162	55985	55769	55795	54462	51859	6697	6437	5578	5176	4731	4246
WA	15256	15447	15520	15485	15427	15236	14405	1552	1577	1505	1505	1163	1080

ACARA Equating Secondary Sample Frame containing 2017 enrolment information													
State/Territory	**Pre Year 1**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**
NSW	3680	3744	3658	3890	3974	4724	4747	35256	35256	34451	33746	28630	25307
NT	0	0	0	0	0	0	0	433	420	424	127	121	87
QLD	2556	2707	2842	2921	3248	4016	4120	14872	14541	13861	9814	13288	12849
SA	667	700	733	726	776	795	802	876	1913	1871	1869	1911	1754
TAS	475	488	516	582	576	723	748	3673	3651	3858	3804	1063	791
VIC	4022	3859	3937	4076	4116	4845	4987	24796	24744	24198	22604	20396	18096
WA	1018	1108	1154	1101	1175	1273	1301	3129	3002	3002	2967	2567	2278

Table 9 contains corresponding ABS totals.

Table 8 ACARA Sample Frames enrolment totals by year level and state/territory

ACARA Calibration Primary Sample Frame containing 2017 enrolment information

State/Territory	Pre Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
ACT	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW	66415	65525	65457	64511	65006	62649	60380	7842	7529	7290	6971	6063	5651
NT	2159	2122	2191	2045	1986	1914	1875	776	712	710	486	327	234
QLD	44143	44868	45910	45326	45566	43755	42356	8502	8234	7946	5750	7075	6761
SA	11852	11714	11869	12028	12116	11731	11330	10454	3224	3211	3202	2944	2642
TAS	4849	4716	4963	5090	5073	4932	4850	1041	1045	1099	1026	414	284
VIC	58942	58232	57903	57240	57695	55873	53526	6970	6889	5998	5629	5130	4746
WA	17682	17705	17764	17716	17859	17738	16966	4343	4271	4096	4068	3619	3402

ACARA Calibration Secondary Sample Frame containing 2017 enrolment information

State/Territory	Pre Year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12
ACT	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW	4833	5000	4998	5137	5219	5760	5935	43278	42861	42338	42225	34895	30840
NT	803	807	818	798	738	746	793	1410	1374	1388	1144	844	622
QLD	5233	5308	5597	5687	5942	6802	6834	32448	31694	30481	21933	29367	27062
SA	1576	1622	1605	1735	1705	1857	2056	3183	10767	10463	10884	10098	9418
TAS	607	645	628	731	737	809	908	3302	3344	3523	3518	868	625
VIC	3934	3822	3842	3942	4178	4798	4923	30369	30111	29582	28717	27013	23728
WA	1733	1882	1886	2025	2316	2589	2602	13349	13142	12670	12584	11250	10229

ACARA Equating Primary Sample Frame containing 2017 enrolment information													
State/Territory	**Pre Year 1**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**
ACT	-	-	-	-	-	-	-	-	-	-	-	-	-
NSW	79918	78718	78741	78358	78438	75798	72588	6710	6516	6322	6355	5370	5002
NT	1161	1053	989	1018	1056	970	918	0	0	0	0	0	0
QLD	45697	46343	47705	47114	47204	45065	43587	4809	4647	4349	3317	4158	4061
SA	9252	9067	9194	9227	9381	8891	8530	7671	836	800	793	704	659
TAS	3679	3585	3743	3839	3739	3688	3526	210	197	198	202	205	183
VIC	56881	56162	55985	55769	55795	54462	51859	6697	6437	5578	5176	4731	4246
WA	15256	15447	15520	15485	15427	15236	14405	1552	1577	1505	1505	1163	1080

ACARA Equating Secondary Sample Frame containing 2017 enrolment information													
State/Territory	**Pre Year 1**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**
NSW	3680	3744	3658	3890	3974	4724	4747	35256	35256	34451	33746	28630	25307
NT	0	0	0	0	0	0	0	433	420	424	127	121	87
QLD	2556	2707	2842	2921	3248	4016	4120	14872	14541	13861	9814	13288	12849
SA	667	700	733	726	776	795	802	876	1913	1871	1869	1911	1754
TAS	475	488	516	582	576	723	748	3673	3651	3858	3804	1063	791
VIC	4022	3859	3937	4076	4116	4845	4987	24796	24744	24198	22604	20396	18096
WA	1018	1108	1154	1101	1175	1273	1301	3129	3002	3002	2967	2567	2278

Table 9 ABS enrolment totals by year level state/territory

ABS 2017 measure													
State/Territory	**Pre Year 1**	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**	**Year 11**	**Year 12**
ACT	59659	58826	57820	56769	56489	56198	56085	58946	58844	58917	59046	60981	52859
NSW	1126583	1107282	1094758	1081032	1071144	1063797	1056198	1044137	1043221	1043405	1042825	906317	778359
NT	42884	42013	41321	40833	40247	39563	38706	37717	36630	34353	31593	27154	19748
QLD	661639	713393	705586	699716	695460	691150	688481	689283	693163	693296	696321	664295	578414
SA	258736	232216	230924	230243	229699	229349	230033	230805	233568	234901	241207	244163	201464
TAS	75689	75791	76141	76132	76256	76436	77147	77519	78509	79332	79936	64910	54862
VIC	852307	833274	824172	816586	811468	805873	802314	801436	802738	805931	803941	753416	653053
WA	370638	370278	366981	363926	350779	347353	344854	344027	344520	344596	343610	328427	263898

(ABS, 2018b)

Appendix A.2

Sampling Parameters

The sampling parameters used to draw the sample are provided in Table 11. These can be used in conjunction with the sample frame to replicate selection of the samples. An explanation of the sample parameter variables are included in Table 10.

To select schools within each explicit sample frame, the selected schools are those whose row numbers within the sample frame belong to the set of integers produced by the following algorithm:

for each integer (i) *in the range* $(0 \; to \; units)$ *inclusive,*

select the school if the row number for the school in the sample frame is equal to

$[(i + RN) \times interval]$ *rounded to the nearest integer*

Table 10 Sample parameters glossary

Sample	One of the 4 samples drawn: CP=Calibration Primary; CS=Calibration Secondary; EP=Equating Primary; ES=Equating Secondary
strataID	Explicit strata id
State	state/territory
Sector	C=Catholic; G=Gov; I=Indep, A=All sectors.
cases	Number of schools in sample frame
units	Number of schools sampled (desired)
interval	sampling interval which is equal to cases / units
RN	random number between 0 and 1
inclprob	school inclusion probability (each school within an explicit stratum has the same inclusion probability) = units/cases
designweight	inverse of inclprob
Nsel	Number of schools sampled
Nr1	Number of 1st replacement schools
Nr2	Number of 2nd replacement schools

Table 11 Sampling parameters

Sample	strataID	State	Sector	Cases	units	interval	RN	inclprob	designweight	Nsel	Nr1	Nr2
CP	1	NSW	C	341	11	31	0.7324	0.032258	31.00006	11	11	11
CP	2	NSW	G	1109	33	33.60606	0.7529	0.029757	33.60554	33	33	33
CP	3	NSW	I	185	4	46.25	0.377	0.021622	46.24919	4	4	4
CP	4	NT	C	7	2	3.5	0.6626	0.285714	3.500004	2	2	2
CP	5	NT	G	100	21	4.761905	0.7237	0.21	4.761905	21	21	21
CP	6	NT	I	11	2	5.5	0.7062	0.181818	5.500006	2	2	2
CP	7	QLD	C	155	7	22.14286	0.1798	0.045161	22.143	7	7	7
CP	8	QLD	G	797	37	21.54054	0.0345	0.046424	21.54058	37	37	37
CP	9	QLD	I	106	4	26.5	0.2413	0.037736	26.49989	4	4	4
CP	10	SA	C	48	6	8	0.7096	0.125	8	6	6	6
CP	11	SA	G	284	34	8.352941	0.3637	0.119718	8.352963	34	34	34

CP	12	SA	I	39	5	7.8	0.9264	0.128205	7.800008	5	5	5
CP	13	TAS	C	23	5	4.6	0.4546	0.217391	4.600006	5	5	5
CP	14	TAS	G	125	23	5.434783	0.2884	0.184	5.434783	23	23	23
CP	15	TAS	I	24	2	12	0.1554	0.083333	12.00005	2	2	2
CP	16	VIC	C	336	11	30.54545	0.3603	0.032738	30.54554	11	11	11
CP	17	VIC	G	1000	34	29.41176	0.36	0.034	29.41176	34	34	34
CP	18	VIC	I	139	3	46.33333	0.2896	0.021583	46.33276	3	3	3
CP	19	WA	C	84	9	9.333333	0.2726	0.107143	9.333321	9	9	9
CP	20	WA	G	313	31	10.09677	0.484	0.099042	10.09673	31	31	31
CP	21	WA	I	74	5	14.8	0.9462	0.067568	14.79991	5	5	5
CS	1	NSW	C	52	8	6.5	0.5755	0.153846	6.500007	8	8	8
CS	2	NSW	G	237	29	8.172414	0.701	0.122363	8.172405	29	29	29
CS	3	NSW	I	142	11	12.90909	0.4715	0.077465	12.90906	11	11	11
CS	4	NT	C	6	3	2	0.4747	0.5	2	3	3	0
CS	5	NT	G	49	11	4.454545	0.05	0.22449	4.454541	11	11	11
CS	6	NT	I	10	3	3.333333	0.312	0.3	3.333333	3	3	3
CS	7	QLD	C	35	7	5	0.0388	0.2	5	7	7	7
CS	8	QLD	G	162	33	4.909091	0.468	0.203704	4.909084	33	33	33
CS	9	QLD	I	93	8	11.625	0.3069	0.086022	11.62493	8	8	8
CS	10	SA	C	16	9	1.777778	0.3821	0.5625	1.777778	9	7	0
CS	11	SA	G	84	29	2.896552	0.2573	0.345238	2.896553	29	29	25
CS	12	SA	I	24	8	3	0.3773	0.333333	3.000003	8	8	8
CS	13	TAS	C	5	4	1.25	0.9476	0.8	1.25	4	1	0
CS	14	TAS	G	35	20	1.75	0.852	0.571429	1.749999	20	14	1
CS	15	TAS	I	20	6	3.333333	0.0675	0.3	3.333333	6	6	5
CS	16	VIC	C	37	9	4.111111	0.5901	0.243243	4.111115	9	9	9

CS	17	VIC	G	165	30	5.5	0.58	0.181818	5.500006	30	30	30
CS	18	VIC	I	95	9	10.55556	0.3447	0.094737	10.55554	9	9	9
CS	19	WA	C	17	10	1.7	0.6526	0.588235	1.700001	10	7	0
CS	20	WA	G	53	26	2.038462	0.9233	0.490566	2.038462	26	24	3
CS	21	WA	I	41	10	4.1	0.3855	0.243902	4.100007	10	10	10
EP	1	NSW	C	299	8	37.375	0.2299	0.026756	37.37479	8	8	8
EP	2	NSW	G	771	23	33.52174	0.2391	0.029831	33.52217	23	23	23
EP	3	NSW	I	102	2	51	0.9724	0.019608	50.99959	2	2	2
EP	4	NT	A	21	6	165.6667	0.6549	0.285714	3.500004	6	6	6
EP	5	QLD	C	122	3	40.66667	0.2951	0.02459	40.66694	3	3	3
EP	6	QLD	G	440	15	29.33333	0.0644	0.034091	29.33326	15	15	15
EP	7	QLD	I	60	1	60	0.8717	0.016667	59.9988	1	1	1
EP	8	SA	C	25	1	888.6667	0.1231	0.04	25	1	1	1
EP	9	SA	G	152	6	1159.222	0.4706	0.039474	25.33313	6	6	6
EP	10	SA	I	22	1	752.3334	0.962	0.045455	21.99978	1	1	1
EP	11	TAS	A	94	6	627.25	0.813	0.06383	15.66661	6	6	6
EP	12	VIC	C	283	6	2102.583	0.5012	0.021201	47.16759	6	6	6
EP	13	VIC	G	714	18	2168.417	0.5111	0.02521	39.6668	18	18	18
EP	14	VIC	I	77	2	1734.25	0.8431	0.025974	38.50004	2	2	2
EP	15	WA	C	68	2	1478.5	0.8169	0.029412	33.99973	2	2	2
EP	16	WA	G	220	8	1400.188	0.7656	0.036364	27.49973	8	8	8
EP	17	WA	I	32	1	1202	0.7823	0.03125	32	1	1	1
ES	1	NSW	C	48	8	6	0.7091	0.166667	5.999988	8	8	8
ES	2	NSW	G	179	25	7.16	0.6131	0.139665	7.15999	25	25	25
ES	3	NSW	I	103	9	11.44444	0.7147	0.087379	11.4444	9	9	9
ES	4	NT	A	4	2	2	0.2005	0.5	2	2	2	1

ES	5	QLD	C	27	6	4.5	0.6301	0.222222	4.500005	6	6	6
ES	6	QLD	G	61	14	4.357143	0.7905	0.229508	4.357147	14	14	14
ES	7	QLD	I	59	8	7.375	0.6406	0.135593	7.375012	8	8	8
ES	8	SA	C	3	2	1.5	0.66	0.666667	1.499999	2	1	0
ES	9	SA	G	18	5	3.6	0.0244	0.277778	3.599997	5	4	3
ES	10	SA	I	17	4	4.25	0.0207	0.235294	4.250002	4	4	4
ES	11	TAS	A	43	6	7.166667	0.1052	0.139535	7.166661	6	6	6
ES	12	VIC	C	33	6	5.5	0.2537	0.181818	5.500006	6	6	6
ES	13	VIC	G	132	20	6.6	0.965	0.151515	6.600007	20	20	20
ES	14	VIC	I	71	7	10.14286	0.3217	0.098592	10.14281	7	7	7
ES	15	WA	C	3	2	1.5	0.3564	0.666667	1.499999	2	1	0
ES	16	WA	G	14	6	2.333333	0.964	0.428571	2.333336	6	6	4
ES	17	WA	I	26	7	3.714286	0.9594	0.269231	3.714283	7	7	5

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APPENDIX B.P. ITEM CALIBRATION RESULTS (PAPER TEST)

B.P.1. Year 3 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00076471	-2.549	0.066	90	0.41	0.88	0.91	1.09	-2.5
x00078243	-2.670	0.069	91	0.38	0.89	0.90	1.10	-2.2
x00076474	-2.458	0.064	89	0.34	0.91	0.91	1.09	-2.1
x00076480	-1.489	0.048	78	0.36	0.94	0.95	1.05	-2.4
x00109053	-2.408	0.063	89	0.39	0.89	0.91	1.09	-2.6
x00076470	0.074	0.041	48	0.30	1.02	0.97	1.03	1.5
x00098730	-0.541	0.042	61	0.49	0.87	0.97	1.03	-8.5
x00076496	-1.566	0.049	79	0.45	0.87	0.95	1.05	-5.2
x00078247	-1.747	0.052	82	0.34	0.94	0.94	1.06	-2.1
x00098731	-1.648	0.050	81	0.44	0.87	0.94	1.06	-4.8
x00098732	-1.416	0.048	77	0.38	0.92	0.95	1.05	-3.1
x00076497	-0.253	0.041	55	0.34	1.00	0.97	1.03	-0.1
x00098729	-0.631	0.042	63	0.25	1.04	0.97	1.03	2.6
x00088578	-1.143	0.045	73	0.35	0.96	0.96	1.04	-1.9
x00088580	0.918	0.044	31	0.19	1.06	0.96	1.04	3.3
x00088582	1.051	0.045	28	0.43	0.90	0.96	1.04	-4.9
x00088583	0.438	0.042	40	0.31	1.00	0.97	1.03	0.3
x00088585	1.005	0.045	29	0.20	1.06	0.96	1.04	2.9
x00088584	0.720	0.043	35	0.22	1.07	0.97	1.03	4.2
x00093063	0.345	0.041	42	0.27	1.04	0.97	1.03	2.7
x00093066	0.131	0.041	47	0.31	1.01	0.97	1.03	0.6
x00093067	0.800	0.043	33	0.31	1.00	0.97	1.03	-0.1
x00093070	1.238	0.047	25	0.05	1.16	0.95	1.05	6.6
x00093071	-0.486	0.042	60	0.36	0.97	0.97	1.03	-1.7
x00093065	1.022	0.045	29	0.27	1.02	0.96	1.04	0.8
x00093072	-0.366	0.042	58	0.32	1.02	0.97	1.03	1.1
x00092833	0.797	0.044	33	0.23	1.06	0.97	1.03	3.4
x00092835	1.177	0.047	26	0.09	1.13	0.96	1.04	5.7
x00092826	0.874	0.044	32	0.16	1.10	0.96	1.04	5.4
x00092830	1.736	0.053	18	0.19	1.04	0.94	1.06	1.2
x00092836	0.748	0.044	34	0.25	1.04	0.97	1.03	2.3
x00092834	1.528	0.051	21	0.43	0.90	0.95	1.05	-3.8
x00088063	1.477	0.050	22	0.10	1.12	0.95	1.05	4.4
x00092884	2.192	0.062	13	0.24	1.01	0.92	1.08	0.2
x00088062	0.861	0.045	32	0.28	1.02	0.96	1.04	0.9
x00092885	1.244	0.048	25	0.16	1.08	0.95	1.05	3.4
x00088048	0.997	0.046	30	0.46	0.89	0.96	1.04	-5.4

B.P.2. Year 5 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00064537	-3.008	0.086	94	0.37	0.92	0.86	1.14	-1.2
x00064538	-1.087	0.048	71	0.37	0.94	0.96	1.04	-2.7
x00064539	-3.035	0.087	94	0.36	0.92	0.86	1.14	-1.2
x00064541	-1.642	0.055	80	0.28	0.98	0.94	1.06	-0.7
x00064540	-1.354	0.051	76	0.51	0.84	0.95	1.05	-6.5
x00064536	-0.676	0.046	64	0.37	0.96	0.97	1.03	-2.7
x00088578	-1.747	0.056	82	0.36	0.93	0.93	1.07	-2.0
x00088580	0.086	0.044	47	0.35	0.97	0.97	1.03	-2.4
x00088582	0.096	0.044	47	0.40	0.94	0.97	1.03	-4.4
x00088583	-0.172	0.044	53	0.34	0.97	0.97	1.03	-1.8
x00088585	-0.096	0.044	51	0.39	0.95	0.97	1.03	-3.7
x00088584	0.390	0.045	41	0.14	1.12	0.97	1.03	7.4
x00093063	-0.439	0.045	59	0.37	0.96	0.97	1.03	-2.8
x00093066	-0.746	0.046	65	0.46	0.89	0.96	1.04	-6.5
x00093067	0.017	0.044	49	0.40	0.94	0.97	1.03	-4.3
x00093070	0.712	0.046	34	0.24	1.04	0.96	1.04	2.2
x00093071	-1.270	0.051	75	0.34	0.95	0.95	1.05	-2.0
x00093065	-0.181	0.044	54	0.45	0.90	0.97	1.03	-7.1
x00093072	-1.247	0.051	75	0.49	0.86	0.95	1.05	-5.9
x00074098	-0.762	0.047	66	0.32	0.98	0.96	1.04	-1.3
x00074099	-0.759	0.047	66	0.29	1.00	0.96	1.04	0.0
x00074094	-0.981	0.048	70	0.24	1.03	0.96	1.04	1.2
x00074095	0.525	0.046	38	0.20	1.07	0.97	1.03	4.2
x00074102	0.664	0.046	35	0.35	0.96	0.97	1.03	-2.3
x00074101	0.754	0.047	34	0.33	0.97	0.96	1.04	-1.6
x00074100	0.424	0.045	40	0.41	0.93	0.97	1.03	-4.7
x00093013	0.342	0.045	42	0.03	1.19	0.97	1.03	12.1
x00093014	1.679	0.057	18	0.20	1.01	0.93	1.07	0.2
x00093020	0.735	0.047	34	0.16	1.09	0.96	1.04	4.8
x00093021	0.698	0.047	35	0.23	1.05	0.96	1.04	2.6
x00093022	1.178	0.050	26	0.09	1.11	0.95	1.05	4.2
x00093019	1.456	0.054	21	0.07	1.10	0.94	1.06	3.2
x00093018	1.318	0.052	24	0.07	1.12	0.95	1.05	4.4
x00092328	1.829	0.059	16	0.02	1.11	0.93	1.07	3.0
x00092331	3.682	0.121	3	0.13	1.00	0.79	1.21	0.0
x00092332	0.567	0.046	38	0.24	1.04	0.97	1.03	2.4
x00092333	0.121	0.045	47	0.36	0.96	0.97	1.03	-2.6
x00092335	0.002	0.045	50	0.39	0.94	0.97	1.03	-4.1
x00092337	1.052	0.050	28	0.05	1.13	0.96	1.04	5.6
x00100103	0.876	0.048	32	0.10	1.12	0.96	1.04	5.8

B.P.3. Year 7 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00088568	-1.564	0.042	77	0.42	0.92	0.96	1.04	-3.9
x00088571	-1.970	0.047	83	0.42	0.88	0.95	1.05	-4.3
x00088573	-2.768	0.060	91	0.34	0.90	0.91	1.09	-2.2
x00088575	-2.046	0.048	84	0.36	0.92	0.94	1.06	-3.0
x00088567	-2.152	0.049	85	0.38	0.90	0.94	1.06	-3.3
x00088570	-1.873	0.046	81	0.38	0.91	0.95	1.05	-3.4
x00072763	-2.503	0.055	89	0.31	0.94	0.93	1.07	-1.7
x00072648	-2.706	0.059	90	0.39	0.87	0.92	1.08	-3.1
x00072750	-0.491	0.037	57	0.38	0.99	0.97	1.03	-0.8
x00072751	-1.210	0.040	71	0.52	0.84	0.96	1.04	-9.4
x00098703	-1.073	0.039	69	0.39	0.95	0.97	1.03	-2.8
x00098705	2.102	0.053	12	0.21	1.01	0.93	1.07	0.2
x00074098	-1.694	0.044	79	0.31	0.98	0.95	1.05	-0.6
x00074099	-1.616	0.043	78	0.29	1.01	0.96	1.04	0.5
x00074094	-1.621	0.043	78	0.22	1.06	0.96	1.04	2.6
x00074095	0.033	0.036	46	0.30	1.06	0.97	1.03	4.7
x00074102	-0.120	0.036	49	0.44	0.94	0.97	1.03	-4.7
x00074101	-0.477	0.037	57	0.49	0.89	0.97	1.03	-8.6
x00074100	-0.659	0.037	61	0.49	0.89	0.97	1.03	-8.0
x00093013	0.222	0.037	42	0.05	1.26	0.97	1.03	18.1
x00093014	0.561	0.038	35	0.51	0.86	0.97	1.03	-9.3
x00093020	-0.127	0.036	49	0.32	1.03	0.97	1.03	2.7
x00093021	-0.017	0.036	47	0.21	1.13	0.97	1.03	9.7
x00093022	0.551	0.038	35	0.27	1.06	0.97	1.03	3.8
x00093019	0.661	0.038	33	0.33	1.00	0.97	1.03	0.3
x00093018	0.935	0.040	28	0.26	1.05	0.96	1.04	2.6
x00093483	-1.548	0.042	77	0.47	0.87	0.96	1.04	-6.2
x00093485	0.367	0.037	39	0.28	1.06	0.97	1.03	4.2
x00093484	0.173	0.037	43	0.34	1.02	0.97	1.03	1.4
x00093490	-0.912	0.038	66	0.32	1.01	0.97	1.03	0.9
x00093489	0.008	0.036	47	0.47	0.91	0.97	1.03	-7.1
x00093491	0.273	0.037	41	0.20	1.13	0.97	1.03	9.4
x00093482	1.525	0.045	19	0.49	0.84	0.95	1.05	-6.5
x00092054	0.391	0.037	39	0.36	1.00	0.97	1.03	0.2
x00092058	1.314	0.043	22	0.27	1.00	0.96	1.04	0.1
x00092056	1.151	0.042	25	0.06	1.19	0.96	1.04	8.6
x00092060	0.418	0.037	38	0.20	1.13	0.97	1.03	8.7
x00092052	1.298	0.043	22	0.04	1.19	0.96	1.04	7.8
x00088251	1.731	0.048	16	0.28	1.00	0.94	1.06	-0.1
x00088250	0.828	0.039	30	0.26	1.07	0.97	1.03	4.1
x00088237	-0.800	0.038	64	0.48	0.89	0.97	1.03	-7.5

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
00088242	0.920	0.040	29	0.28	1.04	0.96	1.04	2.1
x00088246	2.630	0.064	8	0.19	1.03	0.90	1.10	0.6
x00088240	1.485	0.045	20	0.49	0.86	0.95	1.05	-5.8
x00092657	1.652	0.047	18	0.16	1.10	0.95	1.05	3.4
x00092658	2.111	0.054	12	0.26	1.00	0.93	1.07	0.1
x00092662	0.422	0.038	38	0.27	1.07	0.97	1.03	4.9
x00092663	0.410	0.038	39	0.48	0.89	0.97	1.03	-7.9
x00092674	2.384	0.059	10	0.30	0.96	0.92	1.08	-0.8
x00092673	3.390	0.088	4	0.09	1.05	0.85	1.15	0.6

B.P.4. Year 9 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00100137	-3.350	0.096	96	0.21	0.99	0.84	1.16	-0.1
x00077666	-2.039	0.059	87	0.41	0.89	0.92	1.08	-2.9
x00077561	-3.728	0.113	97	0.26	0.97	0.80	1.20	-0.3
x00078171	2.006	0.052	17	-0.03	1.20	0.94	1.06	6.0
x00100139	-2.052	0.059	87	0.36	0.92	0.92	1.08	-2.0
x00077562	1.283	0.045	28	0.26	1.06	0.96	1.04	2.6
x00088924	-1.243	0.047	77	0.16	1.09	0.95	1.05	3.7
x00088928	-2.517	0.069	91	0.33	0.93	0.90	1.10	-1.3
x00088930	-0.606	0.043	66	0.25	1.07	0.97	1.03	3.8
x00088932	-1.007	0.045	73	0.32	1.00	0.96	1.04	0.1
x00088933	-2.087	0.060	88	0.32	0.95	0.92	1.08	-1.3
x00088938	0.527	0.041	43	0.27	1.07	0.97	1.03	4.7
x00078153	-2.027	0.059	87	0.26	0.99	0.92	1.08	-0.2
x00078174	-0.069	0.041	55	0.30	1.04	0.97	1.03	3.0
x00078158	-0.468	0.042	63	0.36	1.00	0.97	1.03	-0.3
x00078182	1.499	0.047	24	0.12	1.15	0.95	1.05	6.0
x00078176	-0.776	0.044	69	0.26	1.06	0.96	1.04	2.9
x00078159	-0.216	0.041	58	0.47	0.91	0.97	1.03	-6.2
x00075455	-0.641	0.043	67	0.48	0.89	0.97	1.03	-6.6
x00075457	0.709	0.042	39	0.38	0.97	0.97	1.03	-2.0
x00075460	-0.903	0.045	72	0.48	0.88	0.96	1.04	-6.0
x00075464	0.792	0.042	37	0.30	1.03	0.97	1.03	1.9
x00075462	-0.357	0.042	61	0.44	0.94	0.97	1.03	-4.0
x00075463	-0.008	0.041	54	0.42	0.95	0.97	1.03	-3.4
x00093483	-1.707	0.054	84	0.44	0.88	0.94	1.06	-4.0
x00093485	0.478	0.041	44	0.39	0.97	0.97	1.03	-2.2
x00093484	0.080	0.041	52	0.41	0.96	0.97	1.03	-2.9
x00093490	-0.748	0.044	69	0.27	1.05	0.96	1.04	2.4
x00093489	-0.232	0.041	59	0.49	0.89	0.97	1.03	-7.5
x00093491	0.330	0.041	47	0.18	1.15	0.97	1.03	10.2
x00093482	1.365	0.045	27	0.54	0.82	0.96	1.04	-8.7
x00088077	0.346	0.041	47	0.17	1.16	0.97	1.03	10.7
x00088212	-0.695	0.043	68	0.42	0.93	0.96	1.04	-3.7
x00088208	-0.925	0.045	72	0.48	0.89	0.96	1.04	-5.7
x00088210	0.218	0.041	49	0.14	1.18	0.97	1.03	12.4
x00088214	0.105	0.041	52	0.33	1.02	0.97	1.03	1.6
x00088215	2.998	0.073	8	0.18	1.00	0.89	1.11	0.1
x00088251	1.517	0.047	24	0.33	0.98	0.95	1.05	-0.8
x00088250	0.594	0.041	42	0.35	1.01	0.97	1.03	0.4
x00088237	-1.142	0.047	76	0.48	0.87	0.95	1.05	-5.7
x00088242	0.857	0.042	36	0.37	0.97	0.97	1.03	-1.8

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00088246	2.984	0.072	8	0.20	1.00	0.89	1.11	0.1
x00088240	1.195	0.044	30	0.51	0.86	0.96	1.04	-7.3
x00092697	0.335	0.041	47	0.38	0.98	0.97	1.03	-1.6
x00092698	-0.126	0.041	57	0.42	0.95	0.97	1.03	-3.4
x00092699	0.606	0.042	41	0.29	1.04	0.97	1.03	2.6
x00092703	1.218	0.045	29	0.12	1.16	0.96	1.04	7.6
x00092702	2.381	0.059	13	0.17	1.05	0.92	1.08	1.2
x00092704	1.455	0.047	25	0.27	1.03	0.95	1.05	1.1
x00092696	3.792	0.101	4	0.18	0.99	0.83	1.17	-0.1

B.P.5. Year 3 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00046136	-3.700	0.064	83	0.44	1.11	0.93	1.07	2.7
x00023781	-3.194	0.060	78	0.53	0.93	0.93	1.07	-2.2
x00023784	-1.983	0.053	65	0.59	1.01	0.95	1.05	0.2
x00046134	-2.138	0.053	67	0.59	0.99	0.94	1.06	-0.5
x00046140	-0.739	0.050	48	0.66	0.91	0.95	1.05	-3.7
x00011183	-0.901	0.050	50	0.59	1.06	0.95	1.05	2.2
x00102713	0.870	0.055	26	0.56	1.03	0.94	1.06	0.9
x00011184	1.039	0.056	24	0.53	1.06	0.94	1.06	2.2
x00023797	1.137	0.057	23	0.52	1.06	0.94	1.06	2.1
x00046148	2.224	0.068	13	0.47	0.99	0.92	1.08	-0.1
x00046142	2.286	0.069	13	0.48	0.94	0.92	1.08	-1.5
x00070478	2.797	0.078	9	0.33	1.18	0.90	1.10	3.4
x00090161	-4.207	0.074	88	0.41	0.95	0.91	1.09	-1.1
x00091037	-1.825	0.053	64	0.60	0.96	0.95	1.05	-1.6
x00023779	-1.685	0.052	63	0.59	0.97	0.95	1.05	-1.0
x00070420	-1.377	0.052	59	0.61	0.96	0.95	1.05	-1.6
x00046106	-0.525	0.051	47	0.67	0.87	0.95	1.05	-5.3
x00090964	-0.009	0.052	40	0.55	1.10	0.95	1.05	3.8
x00090934	0.400	0.053	34	0.57	1.02	0.95	1.05	0.8
x00046157	0.635	0.054	31	0.61	0.92	0.95	1.05	-2.9
x00091081	0.573	0.054	32	0.52	1.12	0.95	1.05	4.2
x00090957	1.994	0.066	16	0.54	0.86	0.93	1.07	-4.0
x00091044	1.989	0.066	17	0.48	1.00	0.93	1.07	0.1
x00090931	2.851	0.080	10	0.39	1.04	0.90	1.10	0.8
x00011176	3.489	0.096	7	0.37	0.98	0.87	1.13	-0.3

B.P.6. Year 5 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00100308	-4.339	0.089	91	0.40	0.88	0.89	1.11	-2.2
x00090535	-3.060	0.069	82	0.42	1.12	0.92	1.08	2.9
x00046140	-2.116	0.060	72	0.56	0.93	0.94	1.06	-2.1
x00046180	-1.081	0.054	59	0.56	1.03	0.95	1.05	1.0
x00023797	-0.312	0.053	47	0.61	0.95	0.95	1.05	-2.3
x00046208	0.427	0.054	36	0.62	0.92	0.95	1.05	-2.9
x00046176	0.518	0.055	35	0.60	0.95	0.95	1.05	-1.9
x00046148	0.414	0.054	37	0.58	1.00	0.95	1.05	0.1
x00070468	1.023	0.057	28	0.53	1.04	0.94	1.06	1.3
x00023786	0.484	0.055	36	0.43	1.28	0.95	1.05	9.8
x00046177	0.995	0.057	29	0.55	1.03	0.94	1.06	1.1
x00008415	1.614	0.062	21	0.41	1.21	0.93	1.07	5.5
x00090999	-2.338	0.062	76	0.57	0.85	0.93	1.07	-4.5
x00046106	-2.251	0.062	75	0.59	0.81	0.93	1.07	-5.8
x00090964	-1.525	0.057	66	0.54	1.03	0.94	1.06	1.0
x00046157	-0.948	0.054	58	0.58	0.97	0.95	1.05	-1.2
x00091081	-0.998	0.054	59	0.53	1.07	0.95	1.05	2.8
x00046154	-0.056	0.054	45	0.63	0.91	0.95	1.05	-4.0
x00091005	1.216	0.059	27	0.52	1.05	0.94	1.06	1.4
x00011191	1.270	0.059	26	0.58	0.92	0.94	1.06	-2.6
x00091108	1.410	0.061	25	0.56	0.95	0.94	1.06	-1.7
x00090981	1.690	0.063	22	0.43	1.14	0.93	1.07	3.8
x00091079	1.741	0.064	21	0.52	0.99	0.93	1.07	-0.2
x00012238	2.882	0.081	11	0.42	0.99	0.90	1.10	-0.2
x00011190	3.339	0.092	8	0.38	0.96	0.88	1.12	-0.6

B.P.7. Year 7 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00017024	-3.058	0.057	85	0.46	0.94	0.93	1.07	-1.7
x00046180	-2.146	0.048	76	0.50	1.00	0.95	1.05	-0.1
x00023809	-1.170	0.043	63	0.49	1.11	0.96	1.04	4.8
x00046208	-0.598	0.042	55	0.61	0.93	0.96	1.04	-3.5
x00070468	-0.256	0.042	49	0.59	0.97	0.96	1.04	-1.7
x00046235	0.050	0.042	45	0.52	1.08	0.96	1.04	4.2
x00023786	-0.765	0.042	57	0.45	1.23	0.96	1.04	10.5
x00046177	-0.048	0.042	46	0.54	1.05	0.96	1.04	2.4
x00011206	0.907	0.044	32	0.56	0.96	0.96	1.04	-1.8
x00100329	0.947	0.045	31	0.61	0.88	0.96	1.04	-5.9
x00100331	0.402	0.043	39	0.50	1.10	0.96	1.04	4.9
x00100337	1.677	0.049	22	0.44	1.08	0.95	1.05	3.1
x00091087	-2.986	0.057	85	0.46	0.91	0.93	1.07	-2.5
x00091093	-3.316	0.062	88	0.41	0.94	0.92	1.08	-1.5
x00046182	-1.286	0.044	66	0.62	0.87	0.96	1.04	-6.3
x00091010	-0.868	0.043	60	0.57	0.99	0.96	1.04	-0.7
x00091005	-0.310	0.042	51	0.59	0.97	0.96	1.04	-1.6
x00091108	0.597	0.043	37	0.59	0.93	0.96	1.04	-3.3
x00046186	0.570	0.043	37	0.64	0.84	0.96	1.04	-8.0
x00091006	0.666	0.044	36	0.59	0.92	0.96	1.04	-3.9
x00091088	1.059	0.045	30	0.39	1.23	0.96	1.04	9.5
x00091112	2.086	0.053	18	0.51	0.90	0.94	1.06	-3.3
x00091011	1.649	0.049	23	0.43	1.08	0.95	1.05	3.1
x00046216	2.867	0.063	11	0.45	0.89	0.92	1.08	-2.9
x00091091	3.330	0.072	8	0.34	1.01	0.90	1.10	0.2

B.P.8. Year 9 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00011213	-3.648	0.073	90	0.36	0.98	0.91	1.09	-0.3
x00100438	-3.184	0.066	86	0.46	0.92	0.92	1.08	-2.1
x00023809	-1.924	0.052	73	0.46	1.09	0.94	1.06	3.1
x00046235	-1.008	0.047	60	0.52	1.04	0.96	1.04	1.9
x00103074	-1.359	0.049	66	0.56	0.97	0.95	1.05	-1.3
x00011206	-0.428	0.046	51	0.58	0.94	0.96	1.04	-2.9
x00100329	-0.226	0.046	48	0.57	0.96	0.96	1.04	-1.9
x00100409	0.197	0.047	41	0.56	0.96	0.96	1.04	-2.0
x00100449	0.578	0.048	35	0.47	1.07	0.96	1.04	3.1
x00046212	1.307	0.052	24	0.40	1.13	0.95	1.05	4.5
x00100447	1.280	0.052	25	0.47	1.00	0.95	1.05	0.0
x00100457	1.229	0.051	25	0.45	1.04	0.95	1.05	1.5
x00011196	-2.330	0.056	79	0.51	0.91	0.94	1.06	-3.0
x00091010	-1.812	0.052	73	0.53	0.97	0.95	1.05	-1.3
x00091013	-1.291	0.049	65	0.54	0.98	0.95	1.05	-0.8
x00091111	-0.870	0.047	59	0.51	1.04	0.96	1.04	1.6
x00091006	-0.588	0.047	55	0.56	0.96	0.96	1.04	-1.9
x00011218	-0.008	0.047	45	0.57	0.94	0.96	1.04	-2.9
x00091112	0.673	0.048	34	0.58	0.90	0.96	1.04	-4.5
x00091011	0.831	0.049	32	0.48	1.03	0.95	1.05	1.2
x00011210	1.639	0.055	21	0.32	1.20	0.94	1.06	6.3
x00091096	3.171	0.081	8	0.33	0.98	0.89	1.11	-0.4
x00046219	1.740	0.057	20	0.51	0.88	0.94	1.06	-4.1
x00091113	1.774	0.057	20	0.33	1.15	0.94	1.06	4.6
x00091015	4.253	0.118	3	0.27	0.93	0.81	1.19	-0.8

B.P.9. Year 3 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00090241	-2.889	0.074	92	0.34	0.92	0.89	1.11	-1.4
x00070241	-2.911	0.075	93	0.31	0.93	0.89	1.11	-1.1
x00093354	-1.577	0.049	79	0.26	0.98	0.95	1.05	-0.8
x00090223	-1.300	0.046	75	0.37	0.94	0.95	1.05	-2.7
x00023527	-1.178	0.045	73	0.28	1.01	0.96	1.04	0.5
x00074771	-0.818	0.043	66	0.40	0.92	0.97	1.03	-4.4
x00090164	-1.354	0.047	76	0.40	0.91	0.95	1.05	-3.7
x00090228	-0.031	0.041	50	0.35	0.97	0.97	1.03	-2.0
x00074688	-0.244	0.041	54	0.34	0.98	0.97	1.03	-1.5
x00090193	0.055	0.041	48	0.31	1.00	0.97	1.03	0.1
x00093357	-0.024	0.041	49	0.36	0.97	0.97	1.03	-2.3
x00090180	-0.195	0.041	53	0.29	1.01	0.97	1.03	0.9
x00093352	0.065	0.041	48	0.34	0.99	0.97	1.03	-0.9
x00090578	-0.234	0.041	54	0.22	1.06	0.97	1.03	4.1
x00090197	-0.017	0.041	50	0.39	0.94	0.97	1.03	-4.1
x00090218	0.367	0.042	41	0.39	0.95	0.97	1.03	-3.7
x00074826	0.766	0.044	33	0.22	1.05	0.97	1.03	3.0
x00090221	0.857	0.044	32	0.34	0.97	0.96	1.04	-1.7
x00090542	1.234	0.048	25	0.13	1.09	0.95	1.05	3.7
x00074695	1.302	0.048	24	0.25	1.01	0.95	1.05	0.3
x00074691	1.300	0.048	24	0.30	0.98	0.95	1.05	-1.0
x00098871	2.025	0.059	14	0.09	1.06	0.93	1.07	1.7
x00090573	1.971	0.058	15	0.12	1.06	0.93	1.07	1.5
x00109466	1.425	0.050	22	-0.10	1.24	0.95	1.05	8.4
x00098727	1.405	0.050	22	0.28	0.99	0.95	1.05	-0.5

B.P.10. Year 5 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00023612	-3.067	0.091	94	0.27	0.97	0.85	1.15	-0.4
x00090223	-1.927	0.060	85	0.37	0.91	0.92	1.08	-2.3
x00093417	-1.927	0.061	85	0.39	0.90	0.92	1.08	-2.6
x00023630	-1.969	0.062	86	0.35	0.93	0.92	1.08	-1.7
x00093357	-1.022	0.049	72	0.36	0.93	0.96	1.04	-3.1
x00093353	-0.861	0.047	69	0.35	0.94	0.96	1.04	-3.0
x00090180	-0.638	0.046	64	0.27	1.00	0.97	1.03	-0.3
x00075720	-0.553	0.046	63	0.34	0.96	0.97	1.03	-2.6
x00074774	-0.859	0.048	69	0.18	1.05	0.96	1.04	2.5
x00090578	-0.515	0.046	62	0.26	1.01	0.97	1.03	0.4
x00075653	-1.307	0.052	77	0.36	0.94	0.95	1.05	-2.4
x00098858	-0.445	0.045	61	0.37	0.95	0.97	1.03	-3.5
x00075649	-0.116	0.045	53	0.36	0.95	0.97	1.03	-3.4
x00093414	0.318	0.045	44	0.24	1.03	0.97	1.03	1.8
x00090542	0.470	0.045	41	0.24	1.02	0.97	1.03	1.2
x00074691	0.802	0.047	34	0.32	0.96	0.96	1.04	-2.0
x00098871	1.096	0.049	28	0.28	0.97	0.96	1.04	-1.3
x00075728	1.064	0.049	29	0.11	1.08	0.96	1.04	3.5
x00091132	1.219	0.051	26	0.13	1.06	0.95	1.05	2.6
x00076585	1.248	0.051	26	0.05	1.10	0.95	1.05	4.0
x00090856	2.200	0.066	13	0.02	1.08	0.91	1.09	1.7
x00090889	1.631	0.056	20	0.08	1.07	0.94	1.06	2.2
x00091120	2.139	0.065	13	0.02	1.07	0.91	1.09	1.6
x00106795	1.396	0.053	23	0.12	1.07	0.95	1.05	2.4
x00098857	1.622	0.056	20	0.25	0.99	0.94	1.06	-0.1

B.P.11. Year 7 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00090863	-2.045	0.054	88	0.38	0.91	0.93	1.07	-2.6
x00023630	-2.755	0.069	93	0.30	0.93	0.89	1.11	-1.2
x00090993	-1.277	0.043	79	0.44	0.89	0.95	1.05	-4.9
x00075720	-1.342	0.044	80	0.37	0.94	0.95	1.05	-2.6
x00098952	-0.124	0.037	58	0.37	0.97	0.97	1.03	-2.1
x00076680	-0.694	0.039	69	0.40	0.95	0.97	1.03	-3.2
x00075653	-1.866	0.051	86	0.34	0.94	0.93	1.07	-1.8
x00093139	-1.057	0.042	75	0.37	0.95	0.96	1.04	-2.2
x00075385	-1.730	0.049	85	0.43	0.88	0.94	1.06	-4.1
x00075649	-0.808	0.040	71	0.45	0.91	0.96	1.04	-5.3
x00090852	-0.878	0.040	73	0.36	0.96	0.96	1.04	-2.0
x00093414	0.305	0.036	49	0.20	1.10	0.98	1.02	7.7
x00093034	0.166	0.036	52	0.35	0.99	0.98	1.02	-1.1
x00093078	0.724	0.037	40	0.43	0.92	0.97	1.03	-6.4
x00093398	0.304	0.036	49	0.37	0.97	0.98	1.02	-2.1
x00093388	-0.542	0.038	66	0.31	1.00	0.97	1.03	0.3
x00093293	0.388	0.036	47	0.36	0.98	0.98	1.02	-1.7
x00093097	0.808	0.037	39	0.19	1.10	0.97	1.03	6.8
x00075728	1.177	0.039	31	0.17	1.09	0.97	1.03	5.0
x00077611	1.497	0.041	26	-0.02	1.22	0.96	1.04	10.3
x00010034	1.674	0.043	23	0.35	0.94	0.96	1.04	-2.6
x00093298	1.889	0.045	20	-0.01	1.16	0.95	1.05	6.0
x00090856	2.097	0.047	17	0.10	1.09	0.94	1.06	2.9
x00093055	1.503	0.041	26	0.23	1.02	0.96	1.04	1.1
x00098853	2.585	0.055	12	0.18	1.01	0.92	1.08	0.2

B.P.12. Year 9 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00093270	-2.869	0.070	92	0.28	0.95	0.89	1.11	-1.0
x00093074	-2.020	0.053	84	0.40	0.89	0.94	1.06	-3.3
x00076680	-1.725	0.049	80	0.38	0.92	0.95	1.05	-3.0
x00093139	-1.970	0.052	83	0.35	0.93	0.94	1.06	-2.2
x00076628	-1.445	0.046	75	0.40	0.91	0.95	1.05	-4.2
x00023711	-0.967	0.042	67	0.33	0.97	0.97	1.03	-1.9
x00093396	-0.387	0.040	55	0.27	1.01	0.97	1.03	1.0
x00093034	-0.763	0.041	63	0.36	0.95	0.97	1.03	-3.4
x00093398	-0.610	0.041	59	0.38	0.95	0.97	1.03	-3.7
x00093388	-1.253	0.044	72	0.29	0.98	0.96	1.04	-0.8
x00075367	-0.621	0.041	60	0.32	0.98	0.97	1.03	-1.5
x00077395	-0.203	0.040	51	0.36	0.96	0.98	1.02	-3.3
x00093147	0.459	0.041	36	0.28	1.00	0.97	1.03	-0.1
x00093087	0.262	0.041	41	0.27	1.01	0.97	1.03	0.6
x00075746	0.592	0.042	34	0.25	1.01	0.97	1.03	0.7
x00093293	0.165	0.040	43	0.31	0.99	0.97	1.03	-1.1
x00075735	1.458	0.050	19	0.18	1.03	0.94	1.06	0.9
x00075742	1.233	0.047	22	0.14	1.04	0.95	1.05	1.5
x00093137	1.164	0.047	23	0.11	1.07	0.95	1.05	2.9
x00077801	1.067	0.046	25	0.15	1.06	0.96	1.04	2.6
x00093136	0.805	0.044	30	0.08	1.11	0.96	1.04	5.6
x00075740	2.211	0.063	10	0.29	0.96	0.91	1.09	-0.9
x00098769	1.457	0.050	19	0.08	1.08	0.94	1.06	2.7
x00075378	1.835	0.056	14	0.10	1.07	0.93	1.07	1.8
x00093151	2.124	0.062	11	0.02	1.07	0.91	1.09	1.6

B.P.13. Year 3 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00075163	-3.402	0.087	94	0.30	0.93	0.87	1.13	-1.1
x00085054	-2.085	0.058	85	0.39	0.96	0.93	1.07	-1.2
x00085137	-1.713	0.053	80	0.39	0.99	0.94	1.06	-0.4
x00027520	-2.597	0.066	89	0.29	1.02	0.91	1.09	0.4
x00075112	-2.584	0.066	89	0.39	0.90	0.91	1.09	-2.3
x00084926	-1.095	0.048	71	0.45	1.00	0.95	1.05	-0.2
x00085089	-0.265	0.044	57	0.53	0.93	0.96	1.04	-3.6
x00085232	-1.271	0.049	74	0.32	1.13	0.95	1.05	5.1
x00027452	-0.548	0.045	62	0.58	0.85	0.96	1.04	-8.1
x00075091	-1.496	0.051	77	0.42	0.96	0.95	1.05	-1.4
x00085025	-1.029	0.047	71	0.55	0.85	0.96	1.04	-7.0
x00093461	-1.204	0.048	73	0.44	0.99	0.95	1.05	-0.5
x00085058	-0.924	0.047	69	0.39	1.07	0.96	1.04	2.9
x00075132	-0.448	0.044	61	0.44	1.02	0.96	1.04	1.2
x00092714	-0.864	0.046	68	0.40	1.05	0.96	1.04	2.4
x00028201	-0.290	0.044	58	0.49	0.98	0.96	1.04	-0.8
x00085015	0.281	0.044	47	0.55	0.90	0.96	1.04	-5.6
x00093292	1.168	0.047	31	0.31	1.15	0.96	1.04	6.7
x00087960	-0.354	0.044	59	0.42	1.06	0.96	1.04	2.9
x00084847	1.167	0.047	32	0.50	0.92	0.96	1.04	-3.7
x00027440	0.270	0.044	48	0.50	0.96	0.96	1.04	-2.4
x00103189	0.593	0.044	42	0.41	1.08	0.96	1.04	4.2
x00087943	0.649	0.044	41	0.51	0.94	0.96	1.04	-3.2
x00085348	0.122	0.044	50	0.55	0.90	0.96	1.04	-5.5
x00027813	0.728	0.045	39	0.50	0.95	0.96	1.04	-2.5
x00076694	0.970	0.046	35	0.32	1.16	0.96	1.04	7.2
x00084920	1.072	0.046	33	0.37	1.08	0.96	1.04	3.7
x00027498	0.959	0.046	35	0.28	1.19	0.96	1.04	8.7
x00093285	-0.057	0.044	54	0.46	1.01	0.96	1.04	0.4
x00084949	1.852	0.052	22	0.41	0.97	0.95	1.05	-0.9
x00027588	0.837	0.045	38	0.39	1.07	0.96	1.04	3.6
x00027522	1.578	0.050	25	0.41	1.00	0.95	1.05	0.0
x00085139	2.519	0.061	14	0.45	0.87	0.93	1.07	-3.5
x00085021	1.914	0.053	21	0.45	0.92	0.94	1.06	-2.8
x00086064	2.689	0.065	12	0.27	1.07	0.92	1.08	1.8
x00093447	2.857	0.068	11	0.35	0.95	0.91	1.09	-1.1

B.P.14. Year 5 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00085054	-3.380	0.087	93	0.29	0.95	0.87	1.13	-0.8
x00085137	-2.925	0.075	90	0.35	0.91	0.90	1.10	-1.8
x00075132	-1.426	0.053	73	0.34	1.08	0.95	1.05	3.0
x00092714	-1.935	0.058	80	0.27	1.09	0.94	1.06	2.7
x00028201	-1.737	0.056	78	0.43	0.94	0.94	1.06	-2.0
x00087960	-2.013	0.059	81	0.44	0.89	0.94	1.06	-3.4
x00084847	-0.500	0.048	57	0.54	0.90	0.96	1.04	-5.3
x00086125	-1.603	0.054	76	0.47	0.91	0.95	1.05	-3.4
x00103189	-1.098	0.051	68	0.43	1.00	0.95	1.05	0.0
x00087784	-2.081	0.060	82	0.29	1.10	0.93	1.07	2.8
x00086808	-0.703	0.049	61	0.42	1.05	0.96	1.04	2.3
x00027737	-1.062	0.050	68	0.48	0.97	0.95	1.05	-1.2
x00087781	-1.349	0.052	72	0.38	1.05	0.95	1.05	2.0
x00087810	-1.236	0.051	70	0.32	1.13	0.95	1.05	5.1
x00087865	-1.519	0.054	75	0.40	1.00	0.95	1.05	-0.1
x00087943	-1.194	0.051	70	0.49	0.91	0.95	1.05	-3.9
x00087640	-0.595	0.048	59	0.38	1.11	0.96	1.04	5.2
x00086735	-0.391	0.048	56	0.38	1.11	0.96	1.04	5.3
x00092718	-0.179	0.048	52	0.48	0.99	0.96	1.04	-0.6
x00093574	0.052	0.048	47	0.43	1.05	0.96	1.04	2.6
x00027813	-0.896	0.050	65	0.53	0.89	0.96	1.04	-5.2
x00085987	0.161	0.048	46	0.56	0.89	0.96	1.04	-5.8
x00087706	0.193	0.048	45	0.55	0.91	0.96	1.04	-4.6
x00026973	0.318	0.049	43	0.35	1.14	0.96	1.04	6.7
x00093767	0.634	0.050	37	0.38	1.08	0.96	1.04	3.7
x00093467	0.241	0.048	44	0.45	1.02	0.96	1.04	1.0
x00027390	0.479	0.049	40	0.59	0.85	0.96	1.04	-7.3
x00027522	0.107	0.048	47	0.56	0.89	0.96	1.04	-5.8
x00027483	0.822	0.051	34	0.37	1.11	0.95	1.05	4.6
x00027195	1.297	0.054	26	0.50	0.93	0.95	1.05	-2.7
x00092939	0.659	0.050	37	0.48	0.99	0.96	1.04	-0.5
x00086064	1.598	0.057	22	0.35	1.10	0.94	1.06	3.2
x00086614	1.342	0.055	26	0.50	0.93	0.94	1.06	-2.6
x00085026	1.051	0.052	30	0.44	1.01	0.95	1.05	0.2
x00087730	1.473	0.056	24	0.34	1.05	0.94	1.06	1.7
x00087922	2.053	0.063	17	0.38	1.01	0.92	1.08	0.2
x00092124	1.899	0.061	19	0.41	0.94	0.93	1.07	-1.8
x00027463	2.525	0.072	12	0.44	0.87	0.91	1.09	-2.9
x00093496	2.820	0.079	10	0.39	0.93	0.89	1.11	-1.3
x00085479	2.566	0.073	12	0.23	1.11	0.91	1.09	2.1
x00068562	2.588	0.074	12	0.38	0.95	0.90	1.10	-1.1

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00027166	2.947	0.083	9	0.40	0.89	0.89	1.11	-1.9

B.P.15. Year 7 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00086105	-3.752	0.078	95	0.24	0.94	0.88	1.12	-0.9
x00027737	-1.838	0.043	77	0.47	0.88	0.96	1.04	-5.7
x00087781	-2.014	0.045	79	0.29	1.04	0.95	1.05	1.6
x00026946	-2.960	0.058	90	0.25	0.99	0.92	1.08	-0.2
x00092110	-2.395	0.049	84	0.33	0.96	0.94	1.06	-1.2
x00091766	-1.823	0.043	77	0.41	0.93	0.96	1.04	-3.3
x00087640	-1.804	0.043	76	0.37	0.98	0.96	1.04	-0.9
x00027251	-1.087	0.039	64	0.36	1.05	0.97	1.03	3.3
x00027280	-0.746	0.038	57	0.34	1.08	0.97	1.03	5.5
x00093467	-0.992	0.038	62	0.45	0.95	0.97	1.03	-3.6
x00092096	-0.371	0.038	50	0.50	0.92	0.97	1.03	-5.5
x00027304	-0.557	0.038	54	0.32	1.11	0.97	1.03	7.4
x00027018	-0.816	0.038	59	0.31	1.10	0.97	1.03	6.5
x00094838	-0.469	0.038	52	0.41	1.02	0.97	1.03	1.5
x00019487	-0.325	0.038	49	0.55	0.87	0.97	1.03	-9.1
x00027483	-0.325	0.038	49	0.41	1.03	0.97	1.03	1.8
x00092626	-0.156	0.038	46	0.48	0.94	0.97	1.03	-3.9
x00027739	-0.374	0.038	50	0.30	1.13	0.97	1.03	8.6
x00092519	-0.072	0.038	44	0.49	0.93	0.97	1.03	-4.6
x00092177	-0.288	0.038	48	0.46	0.96	0.97	1.03	-2.5
x00092939	-0.054	0.038	44	0.43	1.00	0.97	1.03	0.3
x00088289	0.046	0.038	42	0.32	1.12	0.97	1.03	7.3
x00094733	-0.196	0.038	47	0.28	1.17	0.97	1.03	10.8
x00092390	-0.263	0.038	48	0.42	1.01	0.97	1.03	0.9
x00092189	0.193	0.039	39	0.51	0.92	0.97	1.03	-5.0
x00092124	0.168	0.038	40	0.56	0.87	0.97	1.03	-8.6
x00092237	0.713	0.041	30	0.33	1.08	0.96	1.04	3.9
x00091795	-0.201	0.038	47	0.26	1.19	0.97	1.03	12.2
x00035662	1.132	0.044	23	0.49	0.91	0.95	1.05	-3.7
x00095711	0.826	0.042	28	0.26	1.14	0.96	1.04	6.6
x00092100	0.866	0.042	27	0.41	0.98	0.96	1.04	-0.9
x00092313	1.442	0.047	19	0.38	0.98	0.95	1.05	-0.7
x00027287	2.841	0.071	7	0.41	0.86	0.89	1.11	-2.7
x00092306	1.293	0.046	21	0.51	0.89	0.95	1.05	-4.6
x00092383	1.627	0.049	17	0.35	0.97	0.94	1.06	-1.1
x00027278	1.376	0.046	20	0.38	1.01	0.95	1.05	0.5
x00069112	1.818	0.052	15	0.43	0.95	0.94	1.06	-1.4
x00069373	2.137	0.057	12	0.23	1.08	0.92	1.08	2.0
x00092618	2.353	0.061	10	0.26	1.09	0.92	1.08	2.0
x00069514	3.707	0.099	3	0.24	0.98	0.84	1.16	-0.2
x00086808	-1.738	0.042	75	0.37	0.98	0.96	1.04	-0.9

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00085987	-1.014	0.038	63	0.52	0.87	0.97	1.03	-8.5
x00026973	-0.504	0.038	53	0.42	1.01	0.97	1.03	0.6
x00093767	-0.344	0.038	50	0.48	0.95	0.97	1.03	-3.6
x00027195	0.106	0.038	41	0.50	0.93	0.97	1.03	-4.5
x00092244	0.699	0.041	30	0.24	1.18	0.96	1.04	8.6
x00093496	1.552	0.049	18	0.47	0.92	0.94	1.06	-2.8
x00092532	2.583	0.066	8	0.49	0.79	0.91	1.09	-4.7

B.P.16. Year 9 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00026946	-3.624	0.072	92	0.22	0.98	0.90	1.10	-0.3
x00027316	-2.474	0.051	80	0.39	0.93	0.95	1.05	-2.7
x00093738	-2.203	0.048	76	0.37	0.97	0.95	1.05	-1.1
x00027280	-1.572	0.044	66	0.35	1.05	0.96	1.04	2.8
x00092096	-1.755	0.045	69	0.47	0.90	0.96	1.04	-5.4
x00094838	-1.795	0.045	70	0.47	0.90	0.96	1.04	-4.9
x00092579	-1.309	0.043	61	0.32	1.11	0.97	1.03	6.3
x00027177	0.450	0.047	28	0.50	0.94	0.95	1.05	-2.7
x00094451	-2.097	0.048	75	0.44	0.91	0.95	1.05	-4.0
x00026942	-2.116	0.048	75	0.44	0.93	0.95	1.05	-2.9
x00094750	-1.213	0.043	59	0.55	0.85	0.97	1.03	-9.0
x00092626	-1.039	0.043	56	0.46	0.96	0.97	1.03	-2.2
x00092519	-0.892	0.043	53	0.50	0.93	0.97	1.03	-4.2
x00092177	-1.336	0.043	61	0.43	0.99	0.97	1.03	-0.7
x00094733	-1.634	0.044	67	0.46	0.93	0.96	1.04	-3.8
x00092390	-1.196	0.043	59	0.41	1.01	0.97	1.03	0.5
x00095028	-1.174	0.043	58	0.19	1.26	0.97	1.03	13.9
x00093710	-1.461	0.044	64	0.20	1.21	0.96	1.04	11.1
x00027003	-0.632	0.043	48	0.30	1.16	0.97	1.03	9.2
x00026949	-0.701	0.043	49	0.34	1.12	0.97	1.03	6.8
x00092237	-0.219	0.044	40	0.44	1.00	0.96	1.04	0.1
x00068751	0.054	0.045	35	0.17	1.29	0.96	1.04	13.3
x00092100	-0.162	0.044	39	0.52	0.91	0.96	1.04	-5.1
x00093706	0.762	0.050	23	0.44	0.98	0.95	1.05	-0.7
x00092511	0.161	0.045	33	0.43	1.00	0.96	1.04	0.2
x00027116	0.899	0.051	22	0.51	0.90	0.94	1.06	-3.6
x00092383	0.290	0.046	31	0.52	0.89	0.96	1.04	-5.1
x00094257	0.802	0.050	23	0.36	1.04	0.95	1.05	1.4
x00093733	-0.503	0.043	45	0.53	0.90	0.97	1.03	-5.7
x00094301	2.570	0.082	6	0.43	0.85	0.88	1.12	-2.5
x00094358	1.286	0.056	17	0.12	1.26	0.93	1.07	7.1
x00094295	1.180	0.054	18	0.23	1.19	0.94	1.06	5.6
x00094280	1.777	0.064	12	0.45	0.90	0.92	1.08	-2.5
x00094732	2.260	0.074	8	0.35	0.97	0.89	1.11	-0.6
x00027080	2.556	0.082	6	0.29	1.00	0.88	1.12	0.1
x00027086	1.885	0.066	11	0.34	1.00	0.91	1.09	-0.1
x00027090	2.797	0.089	5	0.28	0.96	0.86	1.14	-0.6
x00094245	2.458	0.079	7	0.30	1.00	0.88	1.12	0.0
x00026947	2.862	0.092	5	0.36	0.91	0.86	1.14	-1.3
x00068319	2.914	0.094	5	0.30	0.94	0.85	1.15	-0.8
x00094393	-2.227	0.049	77	0.40	0.94	0.95	1.05	-2.5

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00035672	-1.294	0.043	61	0.38	1.02	0.97	1.03	1.4
x00092102	0.501	0.048	27	0.58	0.83	0.95	1.05	-7.4
x00092244	-0.035	0.044	37	0.25	1.21	0.96	1.04	10.1
x00026759	0.983	0.052	21	0.41	1.00	0.94	1.06	0.0
x00092532	1.596	0.061	14	0.53	0.82	0.92	1.08	-4.9
x00094133	1.309	0.057	17	0.40	0.98	0.93	1.07	-0.6
x00094414	2.312	0.077	8	0.47	0.82	0.89	1.11	-3.3

B.P.17. Year 3, 5, 7, 9 Writing Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
WQ01	0.000	0.019	48	0.91	0.75	0.97	1.03	-20.6
WQ02	0.160	0.020	49	0.85	0.93	0.97	1.03	-5.5
WQ03	-0.459	0.021	53	0.87	0.89	0.97	1.03	-8.3
WQ04	0.177	0.020	49	0.85	0.94	0.97	1.03	-4.6
WQ05	-0.297	0.022	48	0.82	0.97	0.97	1.03	-2.3
WQ06	-0.904	0.025	53	0.82	0.92	0.97	1.03	-5.3
WQ07	1.152	0.021	42	0.79	1.07	0.97	1.03	5.0
WQ08	1.132	0.019	44	0.85	1.07	0.97	1.03	5.2
WQ09	0.317	0.020	47	0.77	1.42	0.97	1.03	28.5
WQ10	-1.280	0.017	56	0.83	1.34	0.97	1.03	23.4

APPENDIX B.O. ITEM CALIBRATION RESULTS (ONLINE TEST)

B.O.1. Year 3 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00098730	-0.536	0.019	60	0.29	0.93	0.98	1.02	-9.3
x00076496	-1.851	0.024	82	0.28	0.92	0.97	1.03	-5.7
x00078247	-1.745	0.024	80	0.26	0.96	0.97	1.03	-2.7
x00098731	-1.513	0.022	77	0.31	0.89	0.98	1.02	-9.5
x00098732	-1.685	0.023	80	0.20	1.01	0.97	1.03	0.4
x00076497	-0.413	0.019	58	0.18	1.07	0.98	1.02	9.2
x00098729	-0.573	0.020	61	0.16	1.09	0.98	1.02	11.3
x00088590	0.163	0.019	46	0.12	1.12	0.99	1.01	16.6
x00088591	1.082	0.021	29	0.09	1.13	0.98	1.02	12.7
x00088595	0.693	0.020	36	0.23	0.99	0.98	1.02	-0.9
x00088589	1.084	0.021	29	0.00	1.24	0.98	1.02	23.0
x00088588	0.007	0.019	49	0.17	1.07	0.99	1.01	9.6
x00088592	2.252	0.027	13	0.22	0.97	0.96	1.04	-1.6
x00094511	-1.416	0.031	75	0.32	0.93	0.97	1.03	-4.8
x00094513	-1.713	0.033	79	0.29	0.95	0.96	1.04	-2.9
x00094514	-1.744	0.033	79	0.29	0.94	0.96	1.04	-3.3
x00094515	-1.270	0.030	72	0.26	0.96	0.97	1.03	-2.4
x00094519	-0.626	0.028	61	0.25	1.00	0.98	1.02	0.1
x00094516	-0.817	0.028	65	0.32	0.92	0.98	1.02	-6.7
x00094523	-1.029	0.029	68	0.22	1.06	0.97	1.03	4.1
x00088307	0.563	0.028	38	0.22	1.04	0.98	1.02	3.0
x00088300	0.046	0.027	48	0.11	1.23	0.98	1.02	20.0
x00088301	-0.794	0.028	64	0.28	0.97	0.98	1.02	-2.2
x00088304	0.939	0.029	31	0.31	0.93	0.97	1.03	-5.6
x00088315	1.205	0.030	26	0.23	1.03	0.97	1.03	1.8
x00088311	1.053	0.030	29	0.37	0.86	0.97	1.03	11.1
x00083501	-1.630	0.027	70	0.29	0.96	0.98	1.02	-3.1
x00083503	-0.447	0.025	46	0.25	0.98	0.98	1.02	-2.4
x00083502	-1.086	0.025	59	0.33	0.92	0.98	1.02	-8.4
x00083507	-0.460	0.025	46	0.22	1.01	0.98	1.02	1.4
x00083509	-1.048	0.025	59	0.34	0.91	0.98	1.02	-9.8
x00083510	-0.990	0.025	57	0.37	0.89	0.98	1.02	12.3
x00083511	-1.374	0.026	65	0.33	0.94	0.98	1.02	-5.2
x00095784	0.122	0.026	34	0.17	1.06	0.98	1.02	6.1
x00095776	0.609	0.028	25	0.21	1.00	0.97	1.03	0.2
x00095769	-0.691	0.025	51	0.25	1.00	0.98	1.02	0.4
x00095785	-1.302	0.026	64	0.32	0.93	0.98	1.02	-7.3
x00098644	0.063	0.026	35	0.06	1.18	0.98	1.02	16.6
x00098645	-0.969	0.025	57	0.33	0.92	0.98	1.02	-8.4
x00053456	-2.702	0.050	86	0.32	0.93	0.94	1.06	-2.3

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00053458	-2.615	0.049	85	0.25	0.99	0.94	1.06	-0.2
x00053462	-2.813	0.052	87	0.42	0.85	0.93	1.07	-4.8
x00077264	-1.499	0.038	68	0.36	0.93	0.97	1.03	-4.5
x00077265	-1.009	0.036	58	0.27	1.03	0.97	1.03	1.8
x00077268	-1.003	0.036	58	0.25	1.05	0.97	1.03	3.5
x00074047	-2.526	0.047	84	0.40	0.86	0.94	1.06	-5.0
x00074045	-1.693	0.040	71	0.38	0.90	0.96	1.04	-5.6
x00074048	-1.646	0.039	70	0.36	0.93	0.96	1.04	-4.2
x00074052	-0.577	0.036	49	0.32	0.96	0.98	1.02	-3.2
x00099834	-0.051	0.037	38	0.43	0.87	0.97	1.03	10.2
x00074055	-0.509	0.036	48	0.36	0.92	0.98	1.02	-6.9
x00074054	0.014	0.037	37	0.23	1.04	0.97	1.03	2.5
x00098695	-5.686	0.113	98	0.08	1.02	0.79	1.21	0.2
x00076471	-2.691	0.035	77	0.32	0.95	0.96	1.04	-2.7
x00078243	-2.121	0.032	67	0.35	0.94	0.98	1.02	-5.4
x00076474	-2.055	0.032	65	0.21	1.02	0.98	1.02	2.0
x00076480	-1.046	0.030	43	0.23	1.02	0.98	1.02	2.2
x00076478	-1.041	0.031	43	0.30	0.98	0.98	1.02	-2.2
x00092722	-0.964	0.031	41	0.30	0.98	0.98	1.02	-1.8
x00092723	-1.229	0.030	47	0.31	0.98	0.98	1.02	-2.7
x00092739	-1.730	0.031	59	0.40	0.92	0.98	1.02	-8.5
x00092744	-1.449	0.030	52	0.36	0.94	0.98	1.02	-6.4
x00096054	-1.766	0.031	59	0.47	0.88	0.98	1.02	12.6
x00094804	-1.257	0.030	48	0.45	0.89	0.98	1.02	12.3
x00096057	-0.961	0.031	41	0.40	0.92	0.98	1.02	-8.4
x00073506	0.671	0.028	51	0.28	0.98	0.98	1.02	-2.4
x00073511	-0.277	0.030	71	0.18	1.04	0.97	1.03	2.9
x00073515	-0.302	0.030	71	0.18	1.03	0.97	1.03	2.4
x00073516	0.220	0.028	61	0.33	0.96	0.98	1.02	-4.6
x00073517	0.514	0.028	55	0.30	0.98	0.98	1.02	-2.6
x00073526	-0.107	0.029	68	0.41	0.91	0.98	1.02	-8.2
x00073527	0.290	0.028	60	0.41	0.91	0.98	1.02	10.1
x00092833	1.748	0.030	29	0.15	1.05	0.97	1.03	3.9
x00092835	1.750	0.030	29	0.11	1.08	0.97	1.03	6.0
x00092826	1.232	0.028	39	0.21	1.02	0.98	1.02	2.2
x00092830	1.762	0.030	29	0.19	1.03	0.97	1.03	1.9
x00092836	0.791	0.028	49	0.36	0.93	0.98	1.02	-8.8
x00092834	1.356	0.029	37	0.33	0.96	0.98	1.02	-4.0
x00073762	0.493	0.039	54	0.35	0.94	0.98	1.02	-4.6
x00073742	0.726	0.039	49	0.13	1.09	0.98	1.02	6.9
x00073738	-1.038	0.050	82	0.26	0.98	0.94	1.06	-0.6
x00073743	0.298	0.040	58	0.29	0.99	0.97	1.03	-0.7
x00073786	1.616	0.043	31	0.18	1.03	0.96	1.04	1.6

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00073799	0.581	0.039	52	0.12	1.09	0.98	1.02	7.3
x00073750	-0.656	0.046	77	0.33	0.95	0.95	1.05	-2.3
x00088286	0.688	0.039	50	0.19	1.04	0.98	1.02	3.6
x00092888	1.080	0.040	41	0.42	0.89	0.97	1.03	-8.3
x00088281	0.045	0.041	64	0.27	1.00	0.97	1.03	-0.1
x00088282	0.861	0.040	46	0.24	1.01	0.98	1.02	1.1
x00088275	1.629	0.043	30	0.33	0.94	0.96	1.04	-3.3
x00094703	1.445	0.042	34	0.21	1.01	0.97	1.03	0.9
x00088578	-0.419	0.023	63	0.22	1.00	0.98	1.02	0.4
x00088580	1.090	0.025	30	0.13	1.04	0.98	1.02	3.5
x00088582	1.576	0.027	22	0.28	0.94	0.97	1.03	-3.8
x00088583	0.879	0.024	35	0.23	0.99	0.98	1.02	-0.9
x00088585	1.297	0.026	26	0.17	1.01	0.98	1.02	1.2
x00088584	0.803	0.024	36	0.09	1.07	0.98	1.02	8.5
x00093063	0.647	0.023	39	0.13	1.05	0.99	1.01	6.2
x00093066	0.277	0.023	48	0.23	0.98	0.99	1.01	-3.5
x00093067	0.999	0.024	32	0.16	1.03	0.98	1.02	3.0
x00093070	1.505	0.027	23	0.09	1.05	0.97	1.03	3.4
x00093071	-0.430	0.024	64	0.19	1.01	0.98	1.02	1.1
x00093065	1.567	0.028	22	0.16	1.01	0.97	1.03	0.7
x00093072	0.060	0.023	53	0.23	1.00	0.99	1.01	0.0
x00073201	0.211	0.032	49	0.29	0.98	0.98	1.02	-2.1
x00073196	0.064	0.032	53	0.25	1.00	0.98	1.02	0.0
x00073193	1.004	0.034	32	0.24	0.99	0.97	1.03	-0.5
x00073189	-0.832	0.035	72	0.29	0.97	0.97	1.03	-2.2
x00073197	0.308	0.032	47	0.21	1.03	0.98	1.02	2.9
x00073194	-0.472	0.033	64	0.40	0.92	0.98	1.02	-7.2
x00073200	0.679	0.033	39	0.21	1.01	0.98	1.02	1.3
x00073345	0.903	0.034	34	0.13	1.06	0.97	1.03	4.4
x00073349	1.445	0.037	24	0.18	1.02	0.96	1.04	0.9
x00073348	0.335	0.032	47	0.22	1.02	0.98	1.02	1.6
x00073351	0.851	0.034	35	0.33	0.94	0.98	1.02	-4.8
x00073352	1.350	0.037	26	0.27	0.96	0.97	1.03	-2.1
x00073353	0.174	0.032	50	0.22	1.02	0.98	1.02	2.1
x00088059	2.852	0.053	24	0.25	1.00	0.95	1.05	-0.1
x00092884	2.980	0.055	22	0.07	1.06	0.94	1.06	1.9
x00088062	1.429	0.046	54	0.22	0.98	0.98	1.02	-1.8
x00092885	1.540	0.046	51	0.29	0.96	0.98	1.02	-3.8
x00088048	0.858	0.048	67	0.19	0.98	0.97	1.03	-1.2
x00088032	0.725	0.049	69	0.26	0.95	0.96	1.04	-2.7
x00088025	0.964	0.048	64	0.15	1.00	0.97	1.03	0.2
x00088027	2.613	0.051	28	0.24	0.99	0.95	1.05	-0.3
x00088026	3.762	0.071	12	0.25	1.02	0.89	1.11	0.5

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00077317	2.204	0.047	36	0.24	0.99	0.97	1.03	-0.5
x00077323	3.110	0.057	20	0.17	1.03	0.93	1.07	0.9
x00077322	0.415	0.053	75	0.21	0.97	0.95	1.05	-1.4
x00077321	3.730	0.070	12	0.11	1.06	0.90	1.10	1.2

B.O.2. Year 5 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00094912	-2.276	0.030	90	0.16	0.99	0.96	1.04	-0.6
x00088578	-1.698	0.025	84	0.14	1.00	0.97	1.03	0.1
x00088580	0.222	0.019	50	0.18	1.02	0.99	1.01	3.8
x00088582	0.519	0.019	44	0.22	0.98	0.99	1.01	-3.8
x00088583	-0.108	0.019	57	0.18	1.00	0.99	1.01	-0.2
x00088585	-0.031	0.019	55	0.20	0.98	0.99	1.01	-2.9
x00088584	0.841	0.019	37	0.04	1.16	0.99	1.01	20.4
x00072763	-1.457	0.023	81	0.18	0.96	0.97	1.03	-2.7
x00072648	-1.594	0.024	83	0.25	0.88	0.97	1.03	-8.8
x00072750	0.535	0.019	43	0.16	1.04	0.99	1.01	5.9
x00098703	0.277	0.019	49	0.19	0.99	0.99	1.01	-2.3
x00072760	-0.380	0.019	63	0.18	1.00	0.99	1.01	-0.3
x00099975	-0.476	0.019	64	0.21	0.96	0.98	1.02	-4.8
x00072759	-0.093	0.026	56	0.15	1.08	0.98	1.02	8.3
x00072768	-0.027	0.026	55	0.20	1.03	0.98	1.02	2.9
x00072771	0.850	0.027	37	0.28	0.97	0.98	1.02	-2.9
x00072775	-0.986	0.029	73	0.24	0.95	0.97	1.03	-3.6
x00072779	-0.882	0.029	72	0.18	1.02	0.97	1.03	1.5
x00072782	-1.029	0.030	74	0.29	0.90	0.97	1.03	-7.0
x00073723	-2.174	0.040	89	0.25	0.90	0.95	1.05	-3.8
x00073762	-0.938	0.029	73	0.29	0.90	0.97	1.03	-7.7
x00073742	-0.215	0.027	59	0.19	1.03	0.98	1.02	3.0
x00073738	-1.840	0.036	85	0.26	0.90	0.96	1.04	-4.6
x00073743	-0.676	0.028	68	0.20	1.00	0.98	1.02	0.1
x00073750	-1.686	0.034	84	0.24	0.90	0.96	1.04	-4.7
x00073799	-0.269	0.027	60	0.16	1.08	0.98	1.02	7.6
x00064537	-2.313	0.043	81	0.36	0.92	0.95	1.05	-3.2
x00064538	-0.854	0.034	53	0.20	0.98	0.98	1.02	-1.9
x00064539	-2.439	0.045	83	0.36	0.92	0.95	1.05	-3.0
x00064541	-1.361	0.036	64	0.27	0.94	0.97	1.03	-4.9
x00064540	-1.007	0.035	57	0.27	0.92	0.98	1.02	-7.5
x00064536	-0.721	0.034	50	0.17	1.00	0.98	1.02	0.4
x00093063	-0.257	0.035	40	0.15	1.01	0.98	1.02	0.5
x00093066	-0.631	0.034	48	0.20	0.97	0.98	1.02	-3.1
x00093067	0.146	0.037	31	0.07	1.05	0.97	1.03	3.0
x00093070	0.473	0.039	25	-0.01	1.08	0.96	1.04	4.3
x00093071	-1.372	0.036	64	0.17	1.00	0.97	1.03	-0.3
x00093065	0.409	0.038	27	0.05	1.05	0.96	1.04	2.9
x00093072	-0.819	0.034	52	0.21	0.97	0.98	1.02	-3.1
x00093114	-0.610	0.049	47	0.24	0.96	0.97	1.03	-2.6
x00093115	-3.218	0.082	91	0.19	1.03	0.87	1.13	0.5

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00093118	-1.402	0.052	64	0.22	0.96	0.96	1.04	-2.1
x00093119	-1.994	0.057	76	0.35	0.91	0.94	1.06	-3.1
x00093121	-1.330	0.051	63	0.23	0.97	0.96	1.04	-1.8
x00093120	-1.088	0.050	58	0.19	0.98	0.97	1.03	-1.4
x00088286	-0.414	0.050	43	0.13	1.02	0.97	1.03	1.4
x00092888	0.524	0.057	24	0.20	0.96	0.94	1.06	-1.5
x00088281	-0.641	0.049	48	0.21	0.97	0.97	1.03	-2.3
x00088282	-0.035	0.052	35	0.06	1.06	0.96	1.04	3.3
x00088275	0.792	0.061	20	0.23	0.95	0.93	1.07	-1.6
x00094911	-0.536	0.050	45	0.11	1.03	0.97	1.03	1.8
x00095701	-1.422	0.052	65	0.21	0.98	0.96	1.04	-1.0
x00102866	-2.702	0.049	81	0.30	1.00	0.94	1.06	0.1
x00094968	-1.097	0.039	48	0.29	0.96	0.98	1.02	-4.0
x00083501	-2.123	0.043	71	0.36	0.96	0.96	1.04	-2.4
x00083503	-1.001	0.039	46	0.34	0.94	0.98	1.02	-6.4
x00083502	-1.422	0.039	56	0.38	0.93	0.98	1.02	-7.6
x00083507	-0.973	0.039	46	0.31	0.95	0.98	1.02	-5.7
x00083509	-1.599	0.040	60	0.40	0.93	0.98	1.02	-6.1
x00083510	-1.671	0.040	61	0.46	0.91	0.98	1.02	-8.0
x00083511	-1.802	0.041	64	0.36	0.95	0.97	1.03	-3.7
x00095784	-0.722	0.040	40	0.19	0.99	0.98	1.02	-0.8
x00095776	-0.029	0.044	26	0.21	0.97	0.96	1.04	-1.2
x00095769	-1.456	0.040	57	0.26	0.98	0.98	1.02	-2.3
x00095785	-1.674	0.040	62	0.33	0.96	0.98	1.02	-3.7
x00093013	0.727	0.021	46	-0.05	1.19	0.99	1.01	27.4
x00093014	2.107	0.026	20	0.31	0.93	0.97	1.03	-4.4
x00093020	1.014	0.022	40	0.15	1.06	0.99	1.01	7.9
x00093021	0.969	0.022	41	0.14	1.07	0.99	1.01	9.0
x00093022	1.599	0.023	28	0.12	1.07	0.98	1.02	5.8
x00093019	1.998	0.026	22	0.23	0.99	0.97	1.03	-0.5
x00093018	2.033	0.026	21	0.07	1.08	0.97	1.03	5.5
x00093015	2.222	0.027	18	0.05	1.09	0.97	1.03	5.6
x00088288	1.049	0.022	39	0.12	1.08	0.99	1.01	9.7
x00088295	1.616	0.023	28	0.33	0.94	0.98	1.02	-5.7
x00088296	2.326	0.028	17	0.14	1.04	0.97	1.03	2.2
x00088298	1.284	0.022	34	0.29	0.96	0.98	1.02	-4.2
x00088297	-0.700	0.024	76	0.20	1.00	0.98	1.02	-0.1
x00074112	-0.957	0.036	80	0.29	0.95	0.96	1.04	-2.5
x00074115	0.170	0.030	58	0.22	1.02	0.98	1.02	2.2
x00074117	0.952	0.030	41	0.27	1.00	0.98	1.02	-0.2
x00074119	0.451	0.030	52	0.36	0.94	0.98	1.02	-7.0
x00074113	0.222	0.030	57	0.24	1.01	0.98	1.02	1.5

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00074107	-0.787	0.035	77	0.17	1.02	0.96	1.04	1.1
x00077547	1.200	0.031	36	0.23	1.03	0.98	1.02	2.4
x00077541	-0.155	0.031	65	0.26	0.98	0.98	1.02	-1.4
x00077553	0.978	0.030	41	0.21	1.05	0.98	1.02	4.3
x00077545	0.159	0.030	59	0.25	1.00	0.98	1.02	-0.1
x00077540	1.095	0.031	38	0.20	1.04	0.98	1.02	3.8
x00077546	0.018	0.031	62	0.25	1.00	0.98	1.02	-0.1
x00077538	-0.311	0.032	68	0.27	0.98	0.97	1.03	-1.8
x00074098	-0.651	0.025	67	0.15	1.00	0.98	1.02	0.4
x00074099	-0.538	0.025	65	0.11	1.02	0.98	1.02	2.6
x00074094	-0.705	0.025	68	0.07	1.06	0.98	1.02	5.4
x00074095	0.759	0.025	35	0.09	1.05	0.98	1.02	5.3
x00074102	0.704	0.024	37	0.15	1.01	0.98	1.02	0.8
x00074101	0.855	0.025	33	0.16	1.01	0.98	1.02	0.6
x00074100	0.627	0.024	38	0.18	0.99	0.99	1.01	-1.3
x00088059	1.728	0.030	18	0.22	0.96	0.96	1.04	-2.1
x00092884	1.699	0.030	18	0.10	1.03	0.96	1.04	1.4
x00088062	0.479	0.024	41	0.25	0.97	0.99	1.01	-5.2
x00092885	0.534	0.024	40	0.21	0.97	0.99	1.01	-3.7
x00088048	0.026	0.024	52	0.26	0.96	0.99	1.01	-7.1
x00088063	0.564	0.024	40	0.03	1.07	0.99	1.01	9.8
x00099102	0.027	0.033	52	0.17	1.02	0.98	1.02	1.9
x00060656	1.650	0.041	19	0.23	0.96	0.95	1.05	-1.5
x00060757	1.774	0.042	18	0.03	1.06	0.95	1.05	2.1
x00099103	0.363	0.033	44	0.05	1.08	0.98	1.02	9.0
x00099098	0.769	0.034	35	0.22	0.98	0.98	1.02	-1.7
x00051807	0.769	0.034	35	0.16	1.02	0.98	1.02	1.9
x00099099	0.384	0.033	44	0.28	0.96	0.98	1.02	-4.8
x00080145	1.022	0.036	30	0.18	1.00	0.97	1.03	0.2
x00080146	1.388	0.038	23	0.18	0.99	0.96	1.04	-0.7
x00080149	-0.905	0.036	72	0.30	0.94	0.97	1.03	-3.8
x00080150	-0.043	0.033	54	0.34	0.93	0.98	1.02	-8.7
x00080152	-0.723	0.035	68	0.33	0.93	0.97	1.03	-5.1
x00080155	0.165	0.033	49	0.35	0.92	0.98	1.02	10.0
x00092328	3.018	0.038	15	0.07	1.05	0.95	1.05	2.0
x00092331	3.894	0.053	7	0.07	1.02	0.92	1.08	0.5
x00092332	1.358	0.028	44	0.21	1.02	0.98	1.02	1.9
x00092337	2.244	0.031	26	0.20	1.01	0.97	1.03	0.8
x00077332	0.356	0.029	67	0.14	1.05	0.98	1.02	4.2
x00077336	1.931	0.029	32	0.31	0.94	0.98	1.02	-4.8
x00078084	0.923	0.028	54	0.22	1.00	0.98	1.02	0.4
x00078085	2.738	0.035	18	0.23	0.98	0.96	1.04	-0.9

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00076194	0.557	0.028	62	0.31	0.95	0.98	1.02	-5.5
x00076196	0.541	0.028	63	0.32	0.94	0.98	1.02	-6.9
x00076199	1.470	0.028	42	0.40	0.92	0.98	1.02	-9.4
x00076200	2.186	0.031	27	0.39	0.90	0.97	1.03	-7.2
x00076103	0.765	0.028	58	0.30	0.96	0.98	1.02	-5.2

B.O.3. Year 7 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00077597	-1.541	0.022	79	0.12	0.99	0.98	1.02	-1.1
x00076851	-2.081	0.026	86	0.13	0.98	0.97	1.03	-1.1
x00076853	-1.215	0.021	73	0.15	0.97	0.98	1.02	-2.6
x00076854	-2.075	0.026	86	0.16	0.95	0.97	1.03	-3.1
x00072763	-2.404	0.028	89	0.11	0.98	0.96	1.04	-0.9
x00072750	-0.488	0.019	59	0.13	0.97	0.99	1.01	-4.7
x00098703	-0.799	0.019	66	0.12	0.98	0.98	1.02	-2.4
x00098705	1.805	0.024	16	0.12	0.97	0.97	1.03	-1.7
x00093013	0.090	0.018	47	-0.07	1.21	0.99	1.01	32.6
x00093014	0.594	0.019	36	0.22	0.88	0.99	1.01	16.5
x00093020	-0.104	0.018	51	0.06	1.06	0.99	1.01	9.8
x00093021	0.118	0.019	46	0.00	1.12	0.99	1.01	19.2
x00093022	0.522	0.019	38	0.05	1.07	0.99	1.01	9.2
x00093019	0.770	0.020	33	0.10	1.00	0.98	1.02	0.5
x00093018	1.052	0.020	28	0.09	1.01	0.98	1.02	1.3
x00093015	1.246	0.021	24	0.04	1.05	0.98	1.02	4.6
x00072759	-0.866	0.028	66	0.07	1.08	0.98	1.02	6.7
x00072768	-0.869	0.028	66	0.10	1.03	0.98	1.02	2.6
x00072771	-0.272	0.026	54	0.21	0.95	0.98	1.02	-5.7
x00072775	-2.033	0.035	85	0.13	0.96	0.96	1.04	-2.0
x00072777	-2.314	0.039	88	-0.01	1.08	0.95	1.05	3.1
x00072779	-1.720	0.032	81	0.14	0.96	0.96	1.04	-2.2
x00072782	-2.171	0.037	86	0.22	0.89	0.95	1.05	-4.8
x00092043	-0.659	0.027	62	0.15	1.00	0.98	1.02	0.2
x00092045	-0.071	0.026	50	0.23	0.95	0.98	1.02	-5.6
x00092046	-2.467	0.041	89	0.16	0.94	0.94	1.06	-2.0
x00092048	0.961	0.029	29	-0.02	1.17	0.97	1.03	12.7
x00099102	-0.993	0.028	69	0.14	0.99	0.98	1.02	-0.5
x00060757	1.013	0.029	28	0.15	1.02	0.97	1.03	1.7
x00099103	-0.167	0.026	52	0.17	1.01	0.98	1.02	0.9
x00099099	-0.724	0.027	64	0.21	0.93	0.98	1.02	-6.9
x00051807	-0.329	0.026	55	0.18	0.98	0.98	1.02	-1.8
x00042041	-1.875	0.031	76	0.26	0.93	0.97	1.03	-4.2
x00098743	-1.851	0.031	75	0.26	0.94	0.97	1.03	-3.7
x00042042	-2.119	0.033	80	0.25	0.94	0.96	1.04	-3.4
x00098734	-0.629	0.027	50	0.20	0.99	0.98	1.02	-1.2
x00088449	-1.597	0.030	71	0.19	0.98	0.97	1.03	-1.2
x00088463	0.072	0.028	35	0.12	1.04	0.98	1.02	4.0
x00088453	-1.484	0.029	69	0.22	0.97	0.98	1.02	-2.4
x00088456	-1.618	0.030	71	0.34	0.89	0.97	1.03	-8.8
x00088457	0.146	0.029	33	-0.03	1.13	0.98	1.02	11.1

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00074098	-1.621	0.030	71	0.21	0.97	0.97	1.03	-2.0
x00074099	-1.429	0.029	67	0.16	1.00	0.98	1.02	0.4
x00074094	-1.451	0.029	68	0.08	1.07	0.98	1.02	5.6
x00074095	-0.007	0.028	36	0.07	1.07	0.98	1.02	6.7
x00074102	-0.190	0.028	40	0.17	1.01	0.98	1.02	1.4
x00074101	-0.156	0.028	39	0.23	0.98	0.98	1.02	-2.6
x00074100	-0.414	0.027	45	0.22	0.97	0.98	1.02	-3.6
x00076972	-1.814	0.044	74	0.19	0.99	0.96	1.04	-0.5
x00076973	-3.085	0.064	90	0.33	0.90	0.90	1.10	-2.1
x00076974	-3.127	0.065	91	0.32	0.92	0.90	1.10	-1.7
x00077206	-1.887	0.045	75	0.19	0.99	0.96	1.04	-0.5
x00093943	-0.919	0.039	56	0.22	0.98	0.98	1.02	-1.4
x00093950	-0.854	0.039	54	0.25	0.94	0.98	1.02	-5.3
x00093957	-1.595	0.042	70	0.27	0.92	0.96	1.04	-4.6
x00093955	-0.578	0.039	48	0.31	0.91	0.98	1.02	-8.4
x00093960	0.548	0.044	25	0.08	1.04	0.96	1.04	1.9
x00074403	-1.439	0.041	67	0.28	0.92	0.97	1.03	-4.8
x00074402	-0.288	0.039	42	0.04	1.10	0.98	1.02	8.3
x00074407	-0.417	0.039	45	0.14	1.03	0.98	1.02	2.7
x00074412	-0.517	0.039	47	0.06	1.10	0.98	1.02	8.6
x00074413	-0.561	0.039	48	0.22	0.98	0.98	1.02	-2.0
x00074406	0.084	0.041	34	0.17	1.01	0.97	1.03	0.7
x00074408	0.148	0.041	33	0.18	1.00	0.97	1.03	0.0
x00088568	-1.276	0.041	49	0.22	0.99	0.98	1.02	-0.9
x00088571	-0.854	0.041	40	0.25	0.97	0.98	1.02	-2.2
x00088573	-1.776	0.042	61	0.36	0.94	0.98	1.02	-5.5
x00088575	-1.203	0.041	48	0.31	0.95	0.98	1.02	-5.7
x00088567	-1.263	0.041	49	0.30	0.96	0.98	1.02	-4.6
x00088570	-1.102	0.041	45	0.31	0.96	0.98	1.02	-4.4
x00055312	-3.732	0.069	91	0.28	0.99	0.89	1.11	-0.2
x00060864	-3.390	0.061	88	0.30	0.98	0.91	1.09	-0.5
x00055314	-3.058	0.055	84	0.31	0.97	0.93	1.07	-0.8
x00055340	-1.135	0.041	46	0.23	0.99	0.98	1.02	-1.4
x00092930	-1.611	0.041	57	0.24	0.98	0.98	1.02	-1.5
x00092932	-0.809	0.042	39	0.12	1.03	0.97	1.03	2.4
x00092934	-1.440	0.041	53	0.28	0.96	0.98	1.02	-3.9
x00092935	-0.889	0.041	40	0.15	1.01	0.98	1.02	1.1
x00092936	-0.632	0.043	35	0.18	1.00	0.97	1.03	0.2
x00092937	-0.349	0.045	29	0.24	0.97	0.96	1.04	-1.4
x00092054	0.313	0.024	52	0.24	0.98	0.99	1.01	-2.6
x00092058	1.451	0.027	28	0.29	0.92	0.98	1.02	-6.3
x00092056	1.382	0.026	29	0.14	1.04	0.98	1.02	3.0

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00092060	0.726	0.024	43	0.13	1.05	0.98	1.02	6.9
x00092052	1.703	0.028	24	0.12	1.04	0.97	1.03	2.4
x00092051	0.549	0.024	47	0.25	0.99	0.99	1.01	-1.4
x00093080	0.903	0.025	39	0.19	1.00	0.98	1.02	0.4
x00093081	1.390	0.026	29	0.28	0.94	0.98	1.02	-5.2
x00093084	0.404	0.024	50	0.32	0.93	0.99	1.01	10.7
x00093083	2.636	0.037	11	0.01	1.08	0.95	1.05	3.0
x00076346	0.388	0.024	50	0.18	1.02	0.99	1.01	2.3
x00076349	1.138	0.025	34	0.04	1.12	0.98	1.02	11.6
x00078555	0.371	0.024	51	0.22	0.99	0.99	1.01	-0.8
x00078550	1.127	0.025	34	0.24	0.97	0.98	1.02	-2.9
x00078553	1.647	0.028	24	0.18	1.02	0.97	1.03	1.5
x00094665	2.723	0.038	11	0.13	1.01	0.94	1.06	0.5
x00076106	0.421	0.034	49	0.26	0.98	0.98	1.02	-2.4
x00076107	-0.274	0.036	64	0.21	1.00	0.97	1.03	0.1
x00077028	1.030	0.036	36	0.30	0.94	0.97	1.03	-4.4
x00076108	2.597	0.052	12	0.08	1.05	0.93	1.07	1.4
x00076176	0.641	0.035	44	0.28	0.95	0.98	1.02	-4.7
x00076994	-0.109	0.035	61	0.24	0.98	0.98	1.02	-1.5
x00076995	0.306	0.034	51	0.11	1.08	0.98	1.02	7.4
x00077100	0.711	0.035	43	0.32	0.93	0.98	1.02	-6.4
x00076996	-1.087	0.041	79	0.33	0.91	0.96	1.04	-4.1
x00077102	0.177	0.034	54	0.24	0.99	0.98	1.02	-1.0
x00077103	0.420	0.034	49	0.32	0.93	0.98	1.02	-6.7
x00044730	0.789	0.035	41	0.30	0.94	0.98	1.02	-4.8
x00044734	0.666	0.035	43	0.29	0.96	0.98	1.02	-3.6
x00061065	0.341	0.034	51	0.22	1.01	0.98	1.02	1.0
x00044735	-0.148	0.035	61	0.34	0.92	0.98	1.02	-6.9
x00044738	-0.085	0.035	60	0.28	0.96	0.98	1.02	-3.7
x00093483	-1.606	0.026	80	0.25	0.96	0.97	1.03	-2.6
x00093485	0.647	0.023	33	0.11	1.03	0.98	1.02	4.0
x00093484	0.364	0.022	39	0.16	1.00	0.99	1.01	-0.1
x00093490	-0.861	0.022	67	0.15	1.00	0.98	1.02	0.5
x00093489	0.178	0.021	43	0.24	0.95	0.99	1.01	-9.1
x00093482	2.113	0.033	11	0.24	0.94	0.95	1.05	-2.3
x00088251	1.737	0.029	15	0.11	1.01	0.96	1.04	0.4
x00088250	1.000	0.024	26	0.08	1.05	0.98	1.02	4.1
x00088237	-0.711	0.022	64	0.25	0.95	0.99	1.01	-6.8
x00088242	1.176	0.025	23	0.16	1.00	0.97	1.03	0.0
x00088246	2.678	0.042	7	0.08	1.01	0.93	1.07	0.3
x00088240	1.757	0.030	15	0.27	0.95	0.96	1.04	-2.7
x00094499	0.472	0.022	37	0.16	1.02	0.99	1.01	2.4

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00094503	1.191	0.025	23	0.13	1.00	0.97	1.03	0.2
x00094504	0.133	0.021	44	0.10	1.04	0.99	1.01	7.5
x00094507	0.792	0.023	30	0.10	1.03	0.98	1.02	2.8
x00076037	-0.477	0.031	58	0.20	1.00	0.98	1.02	0.4
x00076034	-0.881	0.032	67	0.32	0.94	0.98	1.02	-5.2
x00076159	-1.061	0.033	71	0.33	0.92	0.97	1.03	-5.5
x00076035	-0.441	0.030	58	0.27	0.96	0.98	1.02	-4.5
x00076036	-1.657	0.038	81	0.25	0.95	0.96	1.04	-2.3
x00076156	0.271	0.031	41	0.33	0.92	0.98	1.02	-9.3
x00058038	-0.185	0.030	52	0.04	1.10	0.98	1.02	11.9
x00046704	0.898	0.033	28	0.27	0.95	0.97	1.03	-3.3
x00046718	-0.186	0.030	52	0.20	1.01	0.98	1.02	1.0
x00046710	1.417	0.038	20	0.16	0.99	0.96	1.04	-0.3
x00058039	2.015	0.045	12	0.08	1.02	0.94	1.06	0.5
x00046712	0.595	0.032	34	0.15	1.02	0.98	1.02	2.1
x00076039	-0.437	0.031	58	0.30	0.94	0.98	1.02	-6.7
x00076191	0.555	0.032	35	0.21	1.00	0.98	1.02	-0.1
x00076040	-1.485	0.036	78	0.34	0.93	0.96	1.04	-3.6
x00076224	0.987	0.034	27	0.22	0.97	0.97	1.03	-1.6
x00092649	3.892	0.070	6	0.12	0.99	0.89	1.11	-0.1
x00092652	1.440	0.036	42	0.25	0.98	0.98	1.02	-2.3
x00092654	1.988	0.038	30	0.23	0.98	0.97	1.03	-1.1
x00092657	2.131	0.039	27	0.13	1.03	0.96	1.04	1.6
x00092658	2.145	0.039	27	0.14	1.03	0.96	1.04	1.4
x00092674	2.071	0.039	28	0.26	0.97	0.97	1.03	-1.8
x00092673	4.227	0.081	5	0.04	1.01	0.86	1.14	0.2
x00092664	0.667	0.036	60	0.35	0.92	0.98	1.02	-8.3
x00092675	3.083	0.051	13	0.07	1.04	0.93	1.07	1.2
x00092678	2.135	0.039	27	0.09	1.04	0.96	1.04	2.3
x00092680	2.288	0.041	24	0.22	1.00	0.96	1.04	-0.1
x00092681	1.035	0.035	51	0.20	1.02	0.98	1.02	1.9
x00092703	2.353	0.041	23	0.10	1.04	0.96	1.04	1.8
x00092702	3.218	0.054	12	0.12	1.01	0.92	1.08	0.3
x00092704	1.954	0.038	31	0.17	1.02	0.97	1.03	1.2
x00092696	4.371	0.086	4	0.11	0.99	0.85	1.15	-0.1

B.O.4. Year 9 Reading Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00078153	-2.294	0.030	89	0.10	1.02	0.96	1.04	0.8
x00078174	-0.173	0.019	57	0.07	1.08	0.99	1.01	11.7
x00078158	-0.472	0.020	63	0.10	1.05	0.98	1.02	6.0
x00078182	1.509	0.022	24	0.01	1.13	0.98	1.02	11.2
x00078159	-0.188	0.019	57	0.20	0.92	0.99	1.01	11.4
x00075457	0.584	0.019	41	0.13	1.02	0.99	1.01	2.3
x00075460	-1.107	0.022	74	0.22	0.88	0.98	1.02	11.4
x00075464	0.561	0.019	41	0.13	1.03	0.99	1.01	4.5
x00075462	-0.552	0.020	64	0.19	0.94	0.98	1.02	-7.5
x00075463	-0.339	0.020	60	0.12	1.01	0.99	1.01	1.4
x00075458	-1.417	0.023	79	0.24	0.85	0.97	1.03	12.0
x00094315	-0.050	0.019	54	0.06	1.08	0.99	1.01	12.0
x00094317	1.238	0.021	28	0.07	1.09	0.98	1.02	9.4
x00094318	1.088	0.021	31	0.09	1.08	0.98	1.02	8.4
x00094320	1.256	0.021	28	0.03	1.14	0.98	1.02	13.8
x00094323	0.405	0.019	45	0.15	1.02	0.99	1.01	2.5
x00093943	-1.766	0.036	83	0.17	1.02	0.96	1.04	0.9
x00093944	-1.017	0.030	73	0.25	0.98	0.97	1.03	-1.6
x00093955	-1.669	0.035	82	0.25	0.90	0.96	1.04	-5.1
x00093960	0.185	0.027	49	0.39	0.89	0.98	1.02	11.4
x00076037	-1.055	0.030	73	0.17	1.04	0.97	1.03	2.8
x00076034	-1.416	0.033	79	0.27	0.90	0.96	1.04	-5.4
x00076159	-1.881	0.037	85	0.26	0.87	0.95	1.05	-5.7
x00076035	-0.834	0.029	69	0.25	0.97	0.97	1.03	-2.1
x00076036	-2.326	0.042	89	0.24	0.89	0.94	1.06	-3.7
x00076156	-0.365	0.028	61	0.31	0.92	0.98	1.02	-7.9
x00076872	0.316	0.027	47	0.28	1.00	0.98	1.02	-0.5
x00076874	0.561	0.028	41	0.38	0.90	0.98	1.02	10.1
x00079725	-0.978	0.030	72	0.21	1.05	0.97	1.03	3.4
x00079726	0.435	0.027	44	0.14	1.13	0.98	1.02	12.6
x00079729	-1.639	0.035	82	0.24	0.91	0.96	1.04	-4.8
x00079732	-0.054	0.027	54	0.12	1.15	0.98	1.02	14.8
x00082883	-2.308	0.041	81	0.32	0.90	0.95	1.05	-4.2
x00077686	-1.959	0.038	76	0.32	0.90	0.96	1.04	-5.2
x00077691	-1.521	0.035	68	0.28	0.92	0.97	1.03	-5.7
x00082884	-0.893	0.033	55	0.19	0.99	0.98	1.02	-0.6
x00077687	-1.571	0.035	69	0.27	0.94	0.97	1.03	-4.3
x00088924	-1.634	0.036	70	0.16	1.03	0.97	1.03	2.2
x00088928	-2.331	0.042	81	0.29	0.94	0.95	1.05	-2.6
x00088930	-0.614	0.033	48	0.15	1.02	0.98	1.02	1.9
x00088932	-0.963	0.033	56	0.19	0.98	0.98	1.02	-1.8

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00088933	-1.745	0.036	72	0.29	0.93	0.97	1.03	-4.3
x00088938	0.053	0.034	34	0.10	1.05	0.97	1.03	4.1
x00088077	0.122	0.035	32	0.05	1.08	0.97	1.03	5.9
x00088212	-0.646	0.033	49	0.15	1.02	0.98	1.02	1.9
x00088208	-0.957	0.033	56	0.19	0.99	0.98	1.02	-1.1
x00088210	-0.418	0.033	44	0.11	1.05	0.98	1.02	5.4
x00088214	0.056	0.034	34	0.11	1.05	0.97	1.03	3.8
x00077570	-1.955	0.054	76	0.25	0.93	0.95	1.05	-2.5
x00077573	-1.020	0.047	57	0.22	0.97	0.97	1.03	-2.2
x00077651	-1.509	0.049	68	0.36	0.86	0.96	1.04	-7.3
x00077663	-0.610	0.046	48	0.21	0.95	0.97	1.03	-3.4
x00077664	-2.264	0.058	81	0.33	0.90	0.93	1.07	-3.1
x00077665	-1.687	0.051	71	0.36	0.87	0.95	1.05	-5.9
x00074403	-1.734	0.051	72	0.30	0.91	0.95	1.05	-3.9
x00074402	-0.520	0.046	46	0.08	1.08	0.97	1.03	5.8
x00074412	-0.819	0.046	53	0.08	1.07	0.97	1.03	5.0
x00074413	-1.005	0.047	57	0.20	0.98	0.97	1.03	-1.3
x00074406	-0.241	0.047	40	0.16	1.01	0.97	1.03	0.6
x00094067	-0.011	0.048	35	0.04	1.10	0.97	1.03	5.4
x00094070	0.638	0.054	23	0.11	1.01	0.95	1.05	0.4
x00094073	0.201	0.050	31	0.08	1.05	0.96	1.04	2.7
x00094074	-0.231	0.047	40	0.02	1.12	0.97	1.03	7.8
x00094066	-0.324	0.047	42	0.20	0.96	0.97	1.03	-2.6
x00076947	-1.020	0.041	45	0.20	1.02	0.98	1.02	1.5
x00076948	-3.016	0.055	84	0.44	0.90	0.93	1.07	-2.8
x00076949	-1.662	0.041	60	0.41	0.92	0.98	1.02	-6.6
x00076950	-2.122	0.044	69	0.48	0.89	0.96	1.04	-6.5
x00077082	-3.033	0.055	84	0.39	0.92	0.93	1.07	-2.2
x00077558	-3.191	0.058	86	0.34	0.94	0.92	1.08	-1.6
x00077666	-1.493	0.041	56	0.34	0.95	0.98	1.02	-4.2
x00077561	-2.808	0.051	81	0.36	0.94	0.94	1.06	-2.1
x00077560	-1.250	0.041	50	0.34	0.95	0.98	1.02	-4.7
x00077117	-0.961	0.041	44	0.36	0.94	0.98	1.02	-5.7
x00077118	-1.311	0.041	52	0.41	0.92	0.98	1.02	-7.6
x00078080	-0.581	0.042	35	0.18	1.01	0.97	1.03	0.8
x00077031	-0.918	0.041	43	0.18	1.02	0.98	1.02	1.4
x00078076	-0.803	0.041	40	0.09	1.07	0.98	1.02	5.3
x00077034	-1.203	0.041	49	0.33	0.95	0.98	1.02	-4.4
x00077032	-1.440	0.041	55	0.34	0.95	0.98	1.02	-4.8
x00075769	0.428	0.023	53	0.32	0.94	0.99	1.01	-8.9
x00075800	2.177	0.029	19	-0.04	1.14	0.97	1.03	7.9
x00075799	0.967	0.023	41	0.09	1.10	0.98	1.02	12.3

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00075802	1.562	0.025	29	0.26	0.97	0.98	1.02	-2.6
x00075803	0.500	0.023	51	0.14	1.07	0.99	1.01	9.7
x00093564	0.896	0.023	42	0.37	0.90	0.99	1.01	14.0
x00093566	-0.114	0.023	64	0.41	0.88	0.98	1.02	14.3
x00093572	0.708	0.023	46	-0.02	1.18	0.99	1.01	24.5
x00093573	1.280	0.024	34	0.14	1.05	0.98	1.02	5.7
x00093646	1.169	0.023	36	0.14	1.06	0.98	1.02	6.4
x00093652	0.157	0.023	59	0.29	0.96	0.99	1.01	-4.9
x00093659	1.219	0.024	35	0.17	1.04	0.98	1.02	4.4
x00093577	1.348	0.024	33	0.23	1.00	0.98	1.02	0.2
x00093579	2.378	0.030	16	0.31	0.91	0.96	1.04	-4.6
x00094215	2.426	0.031	15	0.18	1.00	0.96	1.04	-0.1
x00094665	2.194	0.029	18	0.20	0.99	0.97	1.03	-0.4
x00078516	0.878	0.033	42	0.14	1.10	0.98	1.02	8.4
x00077463	1.829	0.038	24	0.25	0.99	0.96	1.04	-0.5
x00077465	0.071	0.033	60	0.22	1.02	0.98	1.02	2.2
x00078517	-0.305	0.034	67	0.16	1.06	0.97	1.03	4.2
x00078521	0.327	0.033	54	0.27	0.99	0.98	1.02	-0.7
x00077486	0.986	0.033	40	0.10	1.12	0.98	1.02	9.7
x00077490	1.064	0.033	38	0.31	0.97	0.98	1.02	-2.6
x00077494	-0.581	0.036	73	0.37	0.90	0.97	1.03	-6.1
x00077492	-0.523	0.036	72	0.25	0.98	0.97	1.03	-1.1
x00077491	-0.201	0.034	65	0.23	1.01	0.97	1.03	0.4
x00078518	1.217	0.034	35	0.28	0.99	0.97	1.03	-0.5
x00077108	-0.759	0.037	76	0.40	0.88	0.96	1.04	-6.7
x00076982	0.724	0.033	45	0.34	0.95	0.98	1.02	-5.0
x00076985	0.287	0.033	55	0.38	0.91	0.98	1.02	-8.4
x00076986	-0.115	0.034	64	0.35	0.92	0.98	1.02	-6.3
x00077111	1.208	0.034	35	0.44	0.87	0.97	1.03	10.7
x00093483	-1.690	0.032	83	0.23	0.97	0.96	1.04	-1.6
x00093485	0.624	0.025	36	0.18	0.99	0.98	1.02	-0.9
x00093484	0.039	0.024	49	0.18	0.99	0.99	1.01	-1.0
x00093490	-0.812	0.026	68	0.13	1.03	0.98	1.02	3.0
x00093489	-0.060	0.024	52	0.26	0.95	0.99	1.01	-7.6
x00093482	1.739	0.032	17	0.31	0.91	0.96	1.04	-4.5
x00088251	1.324	0.028	23	0.15	0.99	0.97	1.03	-0.4
x00088250	0.743	0.025	34	0.16	1.02	0.98	1.02	2.2
x00088237	-0.990	0.027	72	0.28	0.95	0.98	1.02	-4.4
x00088242	1.093	0.027	27	0.22	0.97	0.98	1.02	-2.1
x00088246	2.800	0.047	7	0.08	1.00	0.92	1.08	0.1
x00088240	1.340	0.029	22	0.29	0.94	0.97	1.03	-4.1
x00094499	0.664	0.025	35	0.15	1.03	0.98	1.02	3.7

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00094503	0.868	0.026	31	0.16	1.01	0.98	1.02	0.9
x00094504	0.224	0.024	45	0.15	1.03	0.99	1.01	5.1
x00094507	0.628	0.025	36	0.16	1.01	0.98	1.02	1.3
x00094194	1.357	0.040	22	0.11	1.01	0.96	1.04	0.3
x00094196	-0.038	0.034	51	0.17	1.01	0.98	1.02	1.5
x00094197	0.171	0.034	46	0.18	1.01	0.98	1.02	1.2
x00094198	-0.421	0.034	60	0.22	0.97	0.98	1.02	-2.7
x00094199	-0.571	0.035	63	0.26	0.96	0.98	1.02	-3.5
x00094200	-0.922	0.037	70	0.20	1.00	0.97	1.03	-0.3
x00092973	0.397	0.034	41	0.03	1.08	0.98	1.02	8.1
x00092977	-0.839	0.036	69	0.25	0.96	0.97	1.03	-2.8
x00092979	1.275	0.039	23	0.16	0.98	0.96	1.04	-1.1
x00092970	1.635	0.043	18	0.08	1.00	0.95	1.05	0.2
x00092971	0.451	0.034	40	0.12	1.03	0.98	1.02	3.1
x00093003	0.719	0.035	34	0.07	1.05	0.97	1.03	3.9
x00093007	0.206	0.034	45	0.24	0.97	0.98	1.02	-3.1
x00093008	0.756	0.036	33	0.16	1.03	0.97	1.03	1.9
x00093010	0.863	0.036	31	0.08	1.03	0.97	1.03	2.3
x00093011	-0.220	0.034	55	0.15	1.01	0.98	1.02	1.4
x00094685	2.861	0.038	16	0.05	1.04	0.95	1.05	1.7
x00092692	1.629	0.029	38	0.29	0.95	0.98	1.02	-4.9
x00092694	1.392	0.029	43	0.19	1.00	0.98	1.02	0.4
x00092699	0.652	0.029	60	0.32	0.94	0.98	1.02	-6.7
x00092703	1.565	0.029	40	0.18	1.01	0.98	1.02	0.6
x00092702	2.858	0.038	16	0.15	1.01	0.95	1.05	0.3
x00092704	1.545	0.029	40	0.26	0.97	0.98	1.02	-3.1
x00092696	3.700	0.051	8	0.15	0.99	0.92	1.08	-0.2
x00092708	2.337	0.033	24	0.28	0.96	0.97	1.03	-2.3
x00092711	1.543	0.029	40	0.36	0.93	0.98	1.02	-8.7
x00094656	1.757	0.030	35	0.12	1.05	0.98	1.02	4.3
x00095099	1.216	0.029	48	0.15	1.03	0.99	1.01	4.2
x00079845	2.401	0.034	23	0.17	1.00	0.97	1.03	0.3
x00079854	0.850	0.029	56	0.30	0.95	0.98	1.02	-6.7
x00079850	1.521	0.029	41	0.14	1.03	0.98	1.02	4.0
x00079852	4.093	0.061	6	0.18	0.97	0.90	1.10	-0.5

B.O.5. Year 3 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00011177	-3.518	0.043	82	0.48	0.89	0.95	1.05	-4.4
x00102573	-1.766	0.030	75	0.48	1.11	0.97	1.03	6.2
x00046130	-1.597	0.033	56	0.42	1.03	0.97	1.03	2.0
x00091038	-0.657	0.033	39	0.36	1.05	0.97	1.03	3.8
x00046144	-0.627	0.033	39	0.37	1.06	0.97	1.03	4.1
x00011171	-0.133	0.027	55	0.48	1.14	0.97	1.03	10.0
x00091041	0.405	0.037	22	0.31	0.97	0.96	1.04	-1.9
x00070480	1.351	0.047	11	0.18	1.04	0.94	1.06	1.4
x00091103	2.277	0.064	5	0.16	1.00	0.90	1.10	-0.1
x00091026	3.555	0.039	12	0.44	0.94	0.95	1.05	-2.4
x00076738	-3.302	0.041	79	0.48	0.96	0.95	1.05	-1.7
x00069870	-2.722	0.035	84	0.49	0.87	0.96	1.04	-6.7
x00011180	-1.795	0.033	58	0.44	1.02	0.97	1.03	1.2
x00011179	-1.303	0.032	50	0.38	1.09	0.97	1.03	6.0
x00064028	-0.559	0.033	37	0.37	0.99	0.97	1.03	-1.0
x00091036	-0.516	0.033	36	0.31	1.10	0.97	1.03	6.9
x00091102	0.493	0.027	46	0.51	0.98	0.97	1.03	-1.7
x00091025	1.051	0.044	14	0.18	1.08	0.95	1.05	2.8
x00091080	2.346	0.068	5	0.18	0.98	0.89	1.11	-0.3
x00091105	4.365	0.047	7	0.37	0.99	0.94	1.06	-0.5
x00046134	-0.847	0.055	91	0.22	1.02	0.92	1.08	0.5
x00090964	0.888	0.037	69	0.28	1.12	0.97	1.03	7.1
x00091081	1.925	0.035	51	0.44	1.01	0.97	1.03	1.0
x00090957	2.555	0.036	39	0.50	0.96	0.97	1.03	-2.7
x00046148	2.792	0.037	35	0.44	1.02	0.97	1.03	1.4
x00090931	3.936	0.044	19	0.32	1.14	0.95	1.05	5.0
x00070478	4.652	0.053	12	0.29	1.10	0.93	1.07	2.9
x00046140	0.397	0.040	77	0.38	0.99	0.96	1.04	-0.5
x00046157	1.330	0.035	62	0.44	0.99	0.97	1.03	-0.7
x00102713	2.400	0.036	43	0.35	1.13	0.97	1.03	8.0
x00023797	2.322	0.035	44	0.49	0.97	0.97	1.03	-1.9
x00011184	1.858	0.035	52	0.39	1.07	0.97	1.03	4.7
x00091044	2.748	0.037	37	0.45	1.02	0.97	1.03	1.2
x00011176	4.427	0.050	15	0.42	0.97	0.94	1.06	-0.9
x00018436	-2.618	0.042	83	0.36	1.15	0.95	1.05	5.8
x00085910	-2.081	0.039	78	0.49	0.80	0.96	1.04	-9.8
x00085905	-0.628	0.033	60	0.42	0.92	0.97	1.03	-4.8
x00085976	-0.460	0.033	58	0.36	1.10	0.97	1.03	6.0
x00086004	-0.015	0.033	52	0.39	1.05	0.97	1.03	3.0
x00085898	0.492	0.033	45	0.43	0.95	0.97	1.03	-2.7
x00016914	-2.338	0.040	80	0.46	0.93	0.95	1.05	-3.1

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00018400	-1.984	0.038	77	0.41	1.03	0.96	1.04	1.6
x00085893	-1.298	0.035	69	0.42	0.97	0.96	1.04	-1.5
x00016990	-0.059	0.033	52	0.39	1.09	0.97	1.03	5.2
x00085926	-0.140	0.033	54	0.38	1.09	0.97	1.03	5.7
x00070379	0.217	0.033	48	0.43	0.91	0.97	1.03	-5.6
x00007968	-2.910	0.045	85	0.48	0.81	0.95	1.05	-7.5
x00085891	-2.149	0.039	79	0.42	0.98	0.96	1.04	-0.7
x00085900	-0.758	0.034	63	0.35	1.22	0.97	1.03	11.8
x00085911	-0.809	0.034	63	0.39	0.98	0.97	1.03	-1.3
x00085999	0.112	0.033	51	0.40	1.02	0.97	1.03	1.3
x00085939	0.876	0.033	40	0.43	0.99	0.97	1.03	-0.5
x00016942	-5.078	0.064	91	0.39	0.94	0.92	1.08	-1.6
x00085948	-4.177	0.052	84	0.47	0.96	0.94	1.06	-1.5
x00085902	-2.729	0.040	66	0.62	0.83	0.96	1.04	-8.9
x00018394	-1.894	0.038	53	0.53	0.97	0.97	1.03	-1.5
x00018424	-3.848	0.048	81	0.41	1.10	0.95	1.05	3.4
x00016930	-1.638	0.038	48	0.60	0.87	0.97	1.03	-7.9
x00018474	-1.468	0.038	45	0.49	1.01	0.97	1.03	0.9
x00085920	-0.966	0.027	36	0.52	0.93	0.98	1.02	-5.7
x00018484	-1.278	0.038	42	0.40	1.13	0.97	1.03	7.6
x00018422	-4.922	0.061	90	0.38	0.97	0.93	1.07	-0.8
x00085890	-3.708	0.046	79	0.47	0.96	0.95	1.05	-1.7
x00085950	-5.257	0.066	92	0.39	0.92	0.92	1.08	-1.8
x00018432	-2.516	0.039	62	0.49	1.04	0.96	1.04	2.1
x00085913	-1.795	0.038	50	0.55	0.94	0.97	1.03	-3.5
x00085896	-1.166	0.038	39	0.49	0.99	0.97	1.03	-0.7
x00016924	-0.174	0.042	23	0.43	0.98	0.96	1.04	-0.7
x00008447	-0.493	0.040	28	0.43	1.01	0.96	1.04	0.7
x00018418	0.206	0.033	70	0.41	0.95	0.97	1.03	-3.0
x00016926	0.849	0.032	60	0.42	1.05	0.97	1.03	3.5
x00008006	1.077	0.031	56	0.48	0.98	0.97	1.03	-1.6
x00007976	1.308	0.031	52	0.51	0.94	0.97	1.03	-4.4
x00085914	1.758	0.032	44	0.50	0.99	0.97	1.03	-0.6
x00016974	2.104	0.032	39	0.48	1.02	0.97	1.03	1.3
x00008032	2.427	0.033	34	0.57	0.90	0.97	1.03	-6.3
x00085990	3.552	0.040	19	0.53	0.91	0.95	1.05	-4.0
x00085925	3.426	0.039	20	0.47	1.00	0.96	1.04	0.0
x00070148	-0.338	0.036	78	0.38	0.95	0.96	1.04	-2.8
x00085899	0.833	0.032	60	0.53	0.88	0.97	1.03	-8.7
x00085930	1.018	0.032	56	0.42	1.06	0.97	1.03	4.2
x00018406	1.291	0.031	52	0.43	1.07	0.97	1.03	4.9
x00085923	1.900	0.032	42	0.58	0.89	0.97	1.03	-7.9

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00018420	1.728	0.032	44	0.47	1.04	0.97	1.03	2.4
x00018416	2.063	0.033	39	0.55	0.94	0.97	1.03	-4.0
x00086002	2.789	0.035	28	0.61	0.84	0.96	1.04	-9.1
x00085972	2.940	0.036	26	0.56	0.92	0.96	1.04	-4.2

B.O.6. Year 5 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00091078	-4.009	0.057	85	0.43	0.98	0.93	1.07	-0.5
x00090999	-2.249	0.042	61	0.57	0.86	0.96	1.04	-7.6
x00091085	-1.411	0.040	46	0.47	0.96	0.97	1.03	-2.6
x00091041	-1.194	0.041	42	0.46	0.98	0.97	1.03	-1.5
x00046172	-0.251	0.044	26	0.40	0.95	0.96	1.04	-2.3
x00070480	-0.451	0.043	29	0.30	1.09	0.96	1.04	4.4
x00046188	0.325	0.050	18	0.28	1.02	0.95	1.05	0.8
x00091103	0.711	0.055	14	0.27	0.99	0.93	1.07	-0.3
x00091084	2.512	0.029	25	0.51	0.96	0.97	1.03	-2.3
x00102577	4.296	0.041	9	0.37	1.04	0.95	1.05	1.4
x00076738	-5.091	0.079	93	0.37	1.10	0.88	1.12	1.6
x00011202	-2.086	0.042	59	0.47	0.94	0.96	1.04	-3.2
x00103062	-2.476	0.043	66	0.39	1.04	0.96	1.04	2.0
x00090962	-1.692	0.041	52	0.42	0.99	0.97	1.03	-0.4
x00091086	-0.125	0.045	24	0.28	1.06	0.96	1.04	2.8
x00091025	-0.175	0.045	25	0.24	1.10	0.96	1.04	4.5
x00091080	0.431	0.051	17	0.30	0.98	0.94	1.06	-0.6
x00012230	0.896	0.059	12	0.23	1.00	0.92	1.08	-0.1
x00090984	3.209	0.032	17	0.44	1.01	0.96	1.04	0.8
x00046190	3.831	0.037	12	0.38	1.06	0.96	1.04	2.4
x00090964	-0.503	0.036	84	0.25	1.07	0.96	1.04	3.5
x00091081	0.001	0.032	77	0.36	0.98	0.97	1.03	-1.0
x00046208	1.257	0.028	57	0.43	1.02	0.98	1.02	1.8
x00046148	1.365	0.028	55	0.42	1.06	0.98	1.02	4.8
x00070468	1.784	0.029	47	0.43	1.06	0.97	1.03	4.9
x00091108	2.274	0.029	39	0.46	1.04	0.97	1.03	2.6
x00091079	2.680	0.031	33	0.49	0.99	0.97	1.03	-0.5
x00012238	3.695	0.036	19	0.42	1.04	0.96	1.04	1.8
x00046140	-1.179	0.043	90	0.26	1.00	0.94	1.06	0.0
x00046180	0.052	0.032	76	0.28	1.09	0.97	1.03	5.6
x00046157	-0.054	0.032	78	0.31	1.02	0.97	1.03	1.4
x00023797	0.559	0.030	68	0.43	0.96	0.98	1.02	-3.4
x00091005	2.105	0.029	41	0.43	1.06	0.97	1.03	4.1
x00046177	2.101	0.029	41	0.38	1.12	0.97	1.03	8.6
x00090981	2.694	0.031	32	0.40	1.09	0.97	1.03	5.4
x00011190	4.295	0.042	12	0.37	1.02	0.95	1.05	0.8
x00085976	-1.959	0.040	82	0.39	1.00	0.95	1.05	-0.1
x00086004	-1.375	0.037	76	0.40	0.98	0.96	1.04	-0.8
x00085973	-0.091	0.033	60	0.41	0.86	0.97	1.03	-8.7
x00086032	0.142	0.032	57	0.35	1.16	0.97	1.03	9.4
x00018446	0.079	0.032	58	0.40	0.91	0.97	1.03	-5.7

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00086052	0.853	0.032	47	0.46	0.90	0.97	1.03	-7.0
x00018478	-2.056	0.042	83	0.37	1.03	0.95	1.05	1.1
x00016990	-1.910	0.040	82	0.37	1.01	0.95	1.05	0.2
x00070379	-1.170	0.036	75	0.38	0.94	0.96	1.04	-2.8
x00085965	-0.101	0.033	61	0.34	1.09	0.97	1.03	5.1
x00008068	0.509	0.032	52	0.38	1.00	0.97	1.03	0.3
x00086028	1.491	0.032	38	0.52	0.83	0.97	1.03	-11.6
x00070148	-2.111	0.042	84	0.37	0.88	0.95	1.05	-5.2
x00085999	-2.041	0.041	84	0.34	0.96	0.95	1.05	-1.5
x00008483	-1.176	0.036	75	0.33	1.08	0.96	1.04	3.8
x00085939	-0.794	0.034	70	0.36	0.93	0.96	1.04	-3.9
x00018412	-0.013	0.032	60	0.43	0.85	0.97	1.03	-9.9
x00086039	1.126	0.032	43	0.43	1.03	0.97	1.03	2.0
x00086003	-3.383	0.050	82	0.48	0.94	0.95	1.05	-2.3
x00018474	-3.163	0.048	79	0.42	1.04	0.95	1.05	1.5
x00085920	-2.816	0.031	74	0.49	0.96	0.97	1.03	-2.2
x00085998	-3.041	0.047	78	0.55	0.88	0.95	1.05	-4.8
x00018484	-2.427	0.042	69	0.41	1.07	0.96	1.04	3.3
x00017000	-2.167	0.041	65	0.51	0.95	0.96	1.04	-2.5
x00086015	-0.482	0.039	36	0.38	0.99	0.97	1.03	-0.3
x00086038	-0.765	0.038	41	0.45	0.95	0.97	1.03	-3.0
x00016970	-0.784	0.038	41	0.40	1.02	0.97	1.03	1.2
x00016986	-4.207	0.059	88	0.50	0.92	0.93	1.07	-2.1
x00070138	-2.884	0.045	75	0.53	0.92	0.95	1.05	-3.5
x00016924	-2.574	0.043	70	0.51	0.95	0.96	1.04	-2.3
x00008076	-2.062	0.040	62	0.43	1.06	0.96	1.04	3.3
x00008447	-2.359	0.041	67	0.52	0.94	0.96	1.04	-2.8
x00086006	-1.285	0.038	49	0.46	0.99	0.97	1.03	-0.4
x00086025	-0.827	0.039	41	0.43	1.00	0.97	1.03	0.1
x00086023	-1.071	0.038	45	0.40	1.03	0.97	1.03	1.5
x00016974	0.034	0.034	78	0.35	1.01	0.97	1.03	0.4
x00085967	0.543	0.031	71	0.38	1.03	0.97	1.03	2.5
x00085963	0.981	0.030	63	0.45	0.99	0.98	1.02	-0.8
x00018464	1.722	0.029	50	0.52	0.96	0.98	1.02	-3.3
x00085990	1.422	0.029	56	0.53	0.93	0.98	1.02	-6.0
x00085983	2.307	0.030	40	0.44	1.09	0.97	1.03	6.0
x00086050	2.505	0.022	37	0.41	1.14	0.98	1.02	12.1
x00085991	2.946	0.032	30	0.51	0.98	0.97	1.03	-1.2
x00085992	3.689	0.037	20	0.45	1.02	0.96	1.04	0.8
x00018416	0.086	0.034	77	0.42	0.96	0.97	1.03	-2.7
x00086024	0.932	0.030	64	0.50	0.95	0.97	1.03	-4.1
x00086002	0.655	0.031	69	0.51	0.91	0.97	1.03	-6.6

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00085972	1.121	0.030	61	0.50	0.96	0.98	1.02	-3.1
x00085986	1.134	0.030	60	0.48	0.98	0.98	1.02	-1.3
x00076705	2.260	0.030	41	0.51	0.99	0.97	1.03	-0.7
x00008018	1.927	0.030	46	0.52	0.98	0.97	1.03	-1.6
x00086046	4.503	0.044	12	0.29	1.11	0.94	1.06	3.9

B.O.7. Year 7 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00090999	-3.470	0.059	80	0.49	0.92	0.94	1.06	-2.5
x00091085	-2.883	0.052	72	0.49	0.91	0.95	1.05	-3.6
x00100327	-1.193	0.047	41	0.44	0.94	0.97	1.03	-3.5
x00023798	-1.303	0.046	43	0.28	1.10	0.97	1.03	5.4
x00046188	-0.957	0.047	37	0.36	1.00	0.96	1.04	-0.2
x00091009	-0.791	0.028	72	0.45	1.09	0.97	1.03	5.8
x00070408	1.111	0.076	9	0.19	1.01	0.89	1.11	0.2
x00091007	1.543	0.090	6	0.19	0.99	0.86	1.14	-0.1
x00091097	2.370	0.028	24	0.35	1.17	0.97	1.03	11.4
x00069590	2.783	0.154	2	0.10	1.02	0.72	1.28	0.2
x00011202	-3.005	0.053	74	0.45	0.94	0.95	1.05	-2.4
x00102584	-3.447	0.057	80	0.38	1.00	0.94	1.06	0.1
x00012230	-0.916	0.047	35	0.37	0.99	0.96	1.04	-0.6
x00011205	-0.573	0.049	29	0.32	1.01	0.96	1.04	0.5
x00070485	-0.175	0.053	22	0.28	1.03	0.95	1.05	0.9
x00091086	-0.752	0.048	32	0.27	1.07	0.96	1.04	3.3
x00023806	1.316	0.083	7	0.23	0.98	0.87	1.13	-0.4
x00091033	2.131	0.116	3	0.19	0.96	0.80	1.20	-0.3
x00091094	2.972	0.032	17	0.44	0.95	0.96	1.04	-2.9
x00011201	3.275	0.034	14	0.40	0.99	0.96	1.04	-0.4
x00046208	-0.316	0.030	77	0.32	0.99	0.97	1.03	-0.8
x00070468	0.474	0.027	64	0.37	1.01	0.98	1.02	1.1
x00046235	0.535	0.027	63	0.31	1.08	0.98	1.02	6.8
x00091108	1.156	0.027	52	0.43	0.97	0.98	1.02	-3.0
x00046186	1.055	0.027	54	0.46	0.92	0.98	1.02	-7.4
x00011206	1.658	0.027	43	0.40	1.02	0.98	1.02	1.6
x00091011	2.518	0.030	28	0.39	1.03	0.97	1.03	1.8
x00046216	3.769	0.039	13	0.42	0.92	0.95	1.05	-3.0
x00046180	-1.274	0.038	88	0.21	1.03	0.95	1.05	1.4
x00091010	-0.745	0.033	82	0.27	1.01	0.96	1.04	0.4
x00091005	0.337	0.028	66	0.36	1.00	0.98	1.02	-0.2
x00046177	0.578	0.027	62	0.35	1.03	0.98	1.02	2.7
x00091006	1.188	0.027	51	0.42	0.97	0.98	1.02	-2.4
x00091088	1.328	0.027	48	0.30	1.12	0.98	1.02	10.4
x00091112	2.264	0.029	31	0.50	0.90	0.97	1.03	-7.6
x00091091	3.798	0.040	12	0.37	0.99	0.95	1.05	-0.3
x00086032	-0.982	0.035	74	0.36	1.05	0.96	1.04	2.4
x00018446	-1.022	0.035	74	0.40	0.90	0.96	1.04	-5.4
x00086028	-0.416	0.032	66	0.44	0.78	0.97	1.03	-14.8
x00086062	-0.304	0.032	64	0.38	1.02	0.97	1.03	1.4
x00008072	-0.095	0.031	61	0.35	1.10	0.97	1.03	6.4

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00086026	0.337	0.031	55	0.47	0.81	0.97	1.03	-14.2
x00018478	-3.387	0.059	94	0.31	0.99	0.92	1.08	-0.1
x00008068	-0.697	0.033	70	0.35	1.00	0.97	1.03	0.1
x00086075	-0.518	0.033	67	0.32	1.09	0.97	1.03	5.1
x00018514	0.363	0.031	53	0.37	0.95	0.97	1.03	-3.3
x00008102	0.253	0.031	55	0.41	0.88	0.97	1.03	-8.8
x00017042	0.545	0.031	50	0.38	0.95	0.97	1.03	-3.3
x00008511	-2.544	0.046	89	0.29	1.11	0.94	1.06	3.8
x00008483	-2.214	0.043	86	0.31	1.07	0.95	1.05	2.6
x00017016	-0.552	0.033	68	0.37	0.95	0.97	1.03	-3.3
x00008453	0.490	0.031	52	0.47	0.85	0.97	1.03	-10.8
x00086039	-0.202	0.032	63	0.39	0.99	0.97	1.03	-0.5
x00086021	0.460	0.031	53	0.45	0.87	0.97	1.03	-9.7
x00017000	-3.170	0.050	83	0.44	0.97	0.94	1.06	-1.2
x00018490	-2.502	0.044	75	0.53	0.88	0.95	1.05	-5.3
x00086015	-2.096	0.041	69	0.49	0.93	0.96	1.04	-3.4
x00017026	-1.902	0.040	65	0.42	1.01	0.96	1.04	0.6
x00069749	-1.375	0.027	56	0.51	0.89	0.98	1.02	-9.6
x00016970	-1.977	0.040	67	0.44	0.99	0.96	1.04	-0.7
x00086029	-1.305	0.027	55	0.42	0.99	0.98	1.02	-0.7
x00086055	-1.344	0.027	56	0.39	1.03	0.98	1.02	2.4
x00086038	-2.015	0.041	67	0.50	0.92	0.96	1.04	-4.3
x00086043	-3.715	0.057	88	0.29	1.10	0.93	1.07	2.7
x00008076	-2.947	0.048	80	0.44	0.96	0.95	1.05	-1.4
x00086025	-2.402	0.043	73	0.47	0.95	0.96	1.04	-2.3
x00086023	-2.391	0.043	73	0.51	0.89	0.96	1.04	-4.9
x00086016	-1.898	0.040	65	0.46	0.97	0.96	1.04	-1.6
x00086052	-0.290	0.039	36	0.38	0.96	0.97	1.03	-2.3
x00086036	0.502	0.031	69	0.37	1.03	0.97	1.03	2.1
x00086050	1.091	0.021	58	0.31	1.11	0.98	1.02	12.5
x00086071	0.836	0.030	63	0.34	1.08	0.98	1.02	6.1
x00008084	1.459	0.029	51	0.51	0.92	0.98	1.02	-7.2
x00086058	1.133	0.029	57	0.36	1.07	0.98	1.02	5.7
x00085992	1.894	0.029	43	0.47	0.97	0.98	1.02	-2.9
x00008088	1.975	0.029	41	0.50	0.93	0.98	1.02	-5.7
x00086040	1.956	0.029	42	0.38	1.06	0.98	1.02	4.8
x00086054	2.689	0.032	29	0.36	1.07	0.97	1.03	4.6
x00086024	-0.784	0.040	87	0.30	1.00	0.95	1.05	-0.1
x00070358	0.005	0.033	77	0.41	0.95	0.97	1.03	-2.7
x00086045	0.370	0.031	71	0.42	0.96	0.97	1.03	-2.5
x00086084	2.245	0.030	36	0.39	1.04	0.97	1.03	2.9
x00086060	1.788	0.029	45	0.33	1.09	0.98	1.02	7.7

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00086090	2.497	0.031	32	0.34	1.07	0.97	1.03	4.9
x00086057	2.518	0.031	32	0.33	1.08	0.97	1.03	5.5
x00086046	3.283	0.036	20	0.33	1.04	0.96	1.04	2.1

B.O.8. Year 9 Spelling Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00011212	-4.355	0.081	93	0.31	0.94	0.88	1.12	-1.1
x00100446	-2.084	0.046	69	0.34	0.98	0.96	1.04	-1.0
x00102852	-2.783	0.052	79	0.30	1.04	0.94	1.06	1.3
x00102619	-1.594	0.043	60	0.24	1.05	0.96	1.04	2.7
x00076744	-0.199	0.044	33	0.22	1.00	0.97	1.03	0.0
x00070408	0.600	0.050	20	0.20	1.03	0.95	1.05	1.1
x00091007	0.683	0.051	19	0.20	1.01	0.94	1.06	0.4
x00100411	1.181	0.025	43	0.38	1.15	0.98	1.02	12.4
x00069590	2.549	0.098	4	0.13	1.01	0.84	1.16	0.1
x00100839	3.985	0.041	9	0.32	1.01	0.95	1.05	0.3
x00091092	-4.987	0.096	95	0.29	0.93	0.86	1.14	-1.0
x00046200	-3.085	0.055	81	0.27	1.05	0.93	1.07	1.6
x00070485	-1.453	0.043	56	0.31	1.00	0.97	1.03	0.3
x00023823	0.709	0.053	18	0.22	0.98	0.94	1.06	-0.8
x00023806	0.568	0.051	20	0.19	0.99	0.95	1.05	-0.2
x00091033	0.834	0.055	16	0.20	0.97	0.94	1.06	-0.9
x00076740	1.621	0.070	9	0.16	0.97	0.90	1.10	-0.5
x00100444	1.494	0.026	37	0.52	0.97	0.98	1.02	-2.6
x00012258	2.340	0.029	25	0.50	0.96	0.97	1.03	-3.0
x00069584	1.739	0.074	8	0.10	1.04	0.89	1.11	0.8
x00023809	-1.147	0.043	90	0.22	1.01	0.94	1.06	0.2
x00046235	-0.174	0.033	79	0.25	1.06	0.97	1.03	3.3
x00011206	0.457	0.030	69	0.38	0.99	0.97	1.03	-1.0
x00011218	0.618	0.029	66	0.40	0.98	0.98	1.02	-1.8
x00091011	1.801	0.028	43	0.42	1.00	0.98	1.02	0.3
x00011210	2.348	0.030	33	0.27	1.16	0.97	1.03	10.6
x00046219	2.507	0.031	31	0.49	0.91	0.97	1.03	-5.9
x00091015	4.635	0.052	7	0.32	0.95	0.93	1.07	-1.3
x00091010	-1.595	0.050	93	0.21	0.99	0.92	1.08	-0.2
x00091111	-0.392	0.035	82	0.28	1.02	0.96	1.04	1.1
x00091006	0.341	0.030	71	0.37	1.01	0.97	1.03	0.4
x00091112	0.993	0.029	59	0.50	0.91	0.98	1.02	-7.8
x00046212	1.934	0.029	41	0.32	1.13	0.98	1.02	9.6
x00100457	2.398	0.030	33	0.42	1.00	0.97	1.03	0.3
x00091113	2.925	0.033	25	0.32	1.08	0.97	1.03	4.7
x00091096	3.864	0.041	13	0.39	0.95	0.95	1.05	-2.0
x00070346	-2.705	0.052	91	0.32	0.87	0.93	1.07	-4.0
x00008102	-1.322	0.038	79	0.35	0.86	0.96	1.04	-6.7
x00086062	-0.768	0.035	72	0.33	1.02	0.96	1.04	1.2
x00008072	-0.686	0.035	71	0.32	1.07	0.96	1.04	4.0
x00086074	0.644	0.031	51	0.52	0.86	0.97	1.03	-10.6

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00008118	0.575	0.031	52	0.47	0.92	0.97	1.03	-6.0
x00086068	-2.380	0.048	89	0.29	0.99	0.94	1.06	-0.3
x00018514	-0.803	0.035	74	0.34	0.95	0.96	1.04	-2.9
x00086069	-1.132	0.037	78	0.32	0.96	0.96	1.04	-1.8
x00017042	-0.538	0.034	70	0.37	0.98	0.97	1.03	-1.3
x00008086	-0.681	0.034	72	0.38	0.92	0.96	1.04	-4.7
x00008054	0.700	0.031	50	0.45	0.97	0.97	1.03	-2.1
x00008511	-3.046	0.059	93	0.23	1.05	0.92	1.08	1.1
x00086061	-0.625	0.034	72	0.37	0.95	0.97	1.03	-3.0
x00086076	-0.695	0.034	73	0.38	0.89	0.96	1.04	-6.4
x00086021	-0.439	0.033	69	0.42	0.87	0.97	1.03	-8.5
x00008090	0.107	0.032	61	0.40	1.03	0.97	1.03	2.3
x00008110	-0.469	0.033	69	0.23	1.25	0.97	1.03	14.0
x00086077	-3.047	0.064	75	0.46	0.92	0.93	1.07	-2.3
x00086079	-2.667	0.061	69	0.51	0.91	0.94	1.06	-3.2
x00069749	-1.912	0.040	56	0.53	0.90	0.97	1.03	-6.1
x00086029	-2.079	0.040	59	0.47	0.96	0.97	1.03	-2.5
x00086055	-1.853	0.040	55	0.44	0.99	0.97	1.03	-0.5
x00008116	-2.103	0.057	59	0.58	0.85	0.95	1.05	-6.6
x00008094	-0.715	0.058	34	0.47	0.93	0.95	1.05	-2.6
x00018542	-0.766	0.058	35	0.47	0.93	0.95	1.05	-2.8
x00017050	-2.227	0.058	62	0.56	0.88	0.95	1.05	-5.1
x00086089	-3.547	0.072	82	0.50	0.86	0.91	1.09	-3.2
x00017060	-3.176	0.067	77	0.40	1.00	0.93	1.07	0.0
x00070156	-2.801	0.062	72	0.49	0.92	0.94	1.06	-2.8
x00086087	-2.566	0.060	68	0.51	0.90	0.94	1.06	-3.8
x00017070	-1.512	0.055	49	0.49	0.93	0.96	1.04	-3.2
x00070348	-0.444	0.060	29	0.43	0.94	0.95	1.05	-2.1
x00018552	0.144	0.028	68	0.38	1.01	0.98	1.02	0.8
x00086071	0.340	0.027	65	0.38	1.04	0.98	1.02	3.3
x00086070	0.515	0.027	62	0.19	1.27	0.98	1.02	21.5
x00008088	0.949	0.027	54	0.50	0.94	0.98	1.02	-5.2
x00086040	0.640	0.027	60	0.41	1.02	0.98	1.02	1.9
x00017052	2.062	0.028	34	0.51	0.95	0.97	1.03	-4.2
x00017014	2.199	0.028	32	0.56	0.88	0.97	1.03	-9.0
x00086098	3.221	0.034	18	0.39	1.00	0.96	1.04	-0.1
x00008122	3.115	0.033	19	0.44	0.96	0.96	1.04	-1.9
x00008096	0.289	0.028	66	0.42	0.98	0.98	1.02	-1.8
x00008092	0.701	0.027	58	0.45	0.98	0.98	1.02	-1.9
x00086084	1.028	0.027	52	0.37	1.09	0.98	1.02	7.8
x00018564	0.862	0.027	55	0.53	0.90	0.98	1.02	-9.2
x00086060	0.429	0.027	63	0.31	1.13	0.98	1.02	10.8

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00086057	1.788	0.027	38	0.36	1.12	0.98	1.02	9.2
x00008108	2.269	0.029	30	0.47	0.98	0.97	1.03	-1.1
x00008120	2.617	0.030	25	0.41	1.03	0.97	1.03	2.1
x00017064	3.233	0.034	17	0.44	0.95	0.96	1.04	-2.4

B.O.9. Year 3 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00009915	-3.060	0.039	81	0.41	0.90	0.96	1.04	-4.8
x00090241	-3.112	0.057	82	0.36	0.93	0.93	1.07	-2.3
x00023613	-2.432	0.034	71	0.37	0.95	0.97	1.03	-3.3
x00023567	-2.434	0.034	71	0.44	0.89	0.97	1.03	-7.2
x00070241	-3.435	0.062	86	0.30	0.95	0.92	1.08	-1.1
x00090237	-1.920	0.032	61	0.51	0.86	0.98	1.02	-12.3
x00023566	-2.058	0.033	64	0.44	0.90	0.98	1.02	-8.1
x00090232	-1.690	0.032	56	0.45	0.90	0.98	1.02	-9.4
x00009914	-1.511	0.025	66	0.36	0.87	0.98	1.02	-12.1
x00093354	-1.920	0.026	81	0.17	1.06	0.97	1.03	3.9
x00023531	-1.636	0.019	75	0.30	0.90	0.98	1.02	-10.3
x00090568	-1.026	0.032	41	0.21	1.07	0.98	1.02	6.0
x00023527	-2.136	0.047	66	0.20	1.06	0.96	1.04	3.3
x00090239	-1.587	0.031	54	0.42	0.92	0.98	1.02	-7.4
x00070240	-1.333	0.018	70	0.19	1.14	0.98	1.02	15.2
x00093348	-1.279	0.018	69	0.30	0.92	0.98	1.02	-10.3
x00090223	-1.641	0.045	55	0.31	1.00	0.97	1.03	0.1
x00090608	-0.368	0.034	28	0.48	0.87	0.97	1.03	-8.6
x00074771	-0.670	0.047	34	0.24	1.02	0.96	1.04	1.4
x00090545	-1.358	0.031	49	0.16	1.10	0.98	1.02	9.7
x00090164	-1.194	0.045	45	0.32	0.99	0.97	1.03	-0.9
x00074823	-0.903	0.032	39	0.42	0.92	0.98	1.02	-7.1
x00090199	-1.097	0.017	66	0.24	0.98	0.98	1.02	-2.8
x00015929	-0.893	0.017	62	0.25	1.05	0.99	1.01	7.0
x00074690	-0.912	0.032	39	0.23	1.04	0.98	1.02	3.7
x00023523	-2.646	0.050	74	0.47	0.87	0.95	1.05	-5.5
x00023529	-1.711	0.045	56	0.32	0.99	0.97	1.03	-0.4
x00090556	-0.438	0.048	29	0.24	1.03	0.96	1.04	1.2
x00090567	0.069	0.054	21	0.45	0.89	0.94	1.06	-4.1
x00090196	-0.438	0.048	29	0.10	1.12	0.96	1.04	5.4
x00090205	-0.132	0.051	24	0.07	1.12	0.95	1.05	4.6
x00074680	-1.093	0.045	43	0.12	1.14	0.97	1.03	8.7
x00090228	-0.052	0.022	53	0.29	0.99	0.99	1.01	-1.8
x00074688	-0.641	0.023	65	0.25	1.00	0.98	1.02	0.0
x00090243	-0.652	0.024	66	0.20	1.03	0.98	1.02	3.2

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00090193	0.008	0.022	51	0.27	1.00	0.99	1.01	-0.2
x00093357	-0.191	0.023	56	0.24	1.02	0.99	1.01	2.4
x00093352	0.152	0.022	48	0.28	0.99	0.99	1.01	-1.1
x00090180	-0.300	0.023	58	0.20	1.03	0.99	1.01	4.6
x00090578	0.074	0.022	50	0.21	1.03	0.99	1.01	4.6
x00074774	-1.013	0.025	73	0.10	1.07	0.98	1.02	6.2
x00074711	0.131	0.022	49	0.17	1.05	0.99	1.01	8.1
x00074725	0.459	0.023	41	0.23	1.02	0.99	1.01	2.2
x00090197	-0.160	0.023	55	0.35	0.95	0.99	1.01	-7.0
x00090218	0.349	0.022	46	0.22	1.01	0.99	1.01	0.9
x00074821	0.610	0.018	42	0.24	0.99	0.99	1.01	-1.1
x00074826	0.750	0.022	38	0.17	1.04	0.98	1.02	4.9
x00074831	0.848	0.024	33	0.14	1.06	0.98	1.02	6.1
x00090221	0.871	0.022	35	0.24	0.99	0.98	1.02	-1.2
x00098858	0.597	0.018	42	0.15	1.05	0.99	1.01	8.4
x00074687	1.875	0.022	19	0.19	1.00	0.98	1.02	-0.1
x00074785	-0.562	0.033	64	0.18	1.05	0.98	1.02	4.4
x00074718	-0.562	0.033	64	0.26	1.01	0.98	1.02	0.6
x00074697	-0.484	0.032	62	0.22	1.03	0.98	1.02	2.5
x00093353	-0.222	0.032	56	0.28	0.99	0.98	1.02	-0.6
x00093367	-0.048	0.032	52	0.26	1.01	0.98	1.02	1.1
x00090195	-0.043	0.032	52	0.31	0.99	0.98	1.02	-1.5
x00091116	0.208	0.032	47	0.32	0.97	0.98	1.02	-2.8
x00090219	-0.325	0.032	59	0.30	0.98	0.98	1.02	-1.9
x00074854	0.176	0.032	47	0.25	1.01	0.98	1.02	1.4
x00074736	0.079	0.029	54	0.27	0.94	0.98	1.02	-6.3
x00015928	0.094	0.032	49	0.28	1.00	0.98	1.02	0.0
x00074849	0.149	0.029	53	0.21	0.99	0.98	1.02	-0.9
x00090203	0.940	0.030	36	0.18	1.03	0.98	1.02	2.7
x00093366	0.948	0.034	31	0.24	1.01	0.97	1.03	0.4
x00090173	0.734	0.033	35	0.22	1.03	0.98	1.02	2.3
x00074677	1.549	0.038	21	0.17	1.03	0.96	1.04	1.3
x00090564	0.508	0.049	66	0.17	1.05	0.96	1.04	2.5
x00074678	1.197	0.047	52	0.27	1.00	0.97	1.03	0.0
x00090541	0.396	0.050	69	0.28	0.99	0.96	1.04	-0.6
x00074695	1.086	0.066	54	0.25	1.01	0.96	1.04	0.6

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00090588	1.271	0.047	50	0.25	1.01	0.97	1.03	0.8
x00090269	0.999	0.047	56	0.24	1.02	0.97	1.03	1.2
x00090542	1.595	0.066	43	0.24	1.01	0.96	1.04	0.7
x00090540	1.506	0.047	45	0.18	1.05	0.97	1.03	3.2
x00074841	0.789	0.047	61	0.35	0.96	0.97	1.03	-2.6
x00074704	0.960	0.047	57	0.15	1.07	0.97	1.03	4.8
x00074834	1.284	0.047	50	0.17	1.06	0.97	1.03	4.4
x00074691	1.232	0.065	51	0.37	0.94	0.96	1.04	-2.9
x00023550	1.389	0.047	47	0.24	1.02	0.97	1.03	1.6
x00074668	1.947	0.049	35	0.31	0.97	0.96	1.04	-1.5
x00098871	1.464	0.066	46	0.32	0.98	0.96	1.04	-1.2
x00098727	1.785	0.067	39	0.37	0.94	0.95	1.05	-2.7
x00090573	2.962	0.084	18	0.22	1.00	0.90	1.10	0.0
x00009887	2.522	0.054	24	0.26	0.99	0.95	1.05	-0.5
x00074685	2.641	0.055	22	0.39	0.92	0.94	1.06	-2.8
x00090551	-0.379	0.084	82	0.27	0.97	0.90	1.10	-0.7
x00090575	1.021	0.066	55	0.22	1.02	0.96	1.04	1.1
x00090275	2.257	0.072	29	0.30	0.97	0.94	1.06	-0.9
x00093365	2.847	0.083	19	0.40	0.92	0.91	1.09	-1.8
x00074794	4.066	0.125	7	0.15	1.00	0.80	1.20	0.1
x00090570	4.306	0.138	6	0.11	1.02	0.77	1.23	0.2

B.O.10. Year 5 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00023525	-3.943	0.068	91	0.41	0.93	0.90	1.10	-1.5
x00023613	-3.539	0.059	87	0.32	0.97	0.92	1.08	-0.7
x00023567	-3.377	0.056	85	0.40	0.93	0.93	1.07	-2.0
x00009968	-2.745	0.048	76	0.31	0.99	0.95	1.05	-0.3
x00023602	-2.423	0.045	71	0.45	0.91	0.96	1.04	-4.6
x00023566	-3.133	0.052	82	0.40	0.93	0.94	1.06	-2.2
x00009956	-2.612	0.046	74	0.38	0.95	0.96	1.04	-2.1
x00090568	-1.732	0.041	57	0.22	1.07	0.97	1.03	4.9
x00010008	-2.201	0.043	67	0.37	0.96	0.97	1.03	-2.5
x00075674	-2.151	0.043	66	0.38	0.96	0.97	1.03	-2.4
x00010009	-2.836	0.049	78	0.35	0.96	0.95	1.05	-1.4
x00090223	-2.531	0.065	73	0.35	0.97	0.94	1.06	-1.0
x00090887	-2.424	0.064	71	0.34	0.98	0.94	1.06	-0.7
x00093417	-2.051	0.060	64	0.44	0.91	0.95	1.05	-3.7
x00023608	-1.997	0.042	63	0.25	1.04	0.97	1.03	2.7
x00023612	-3.472	0.082	86	0.29	0.99	0.89	1.11	-0.2
x00009957	-1.825	0.023	82	0.24	0.99	0.97	1.03	-1.0
x00023591	-1.599	0.022	79	0.21	0.95	0.98	1.02	-3.8
x00090926	-2.118	0.032	86	0.12	1.09	0.96	1.04	4.1
x00090863	-0.857	0.042	38	0.40	0.93	0.97	1.03	-4.5
x00009980	-1.710	0.041	57	0.36	0.97	0.97	1.03	-1.9
x00023611	-1.852	0.023	82	0.18	0.93	0.97	1.03	-5.0
x00090994	-0.884	0.028	59	0.13	1.00	0.98	1.02	0.3
x00023593	-1.802	0.023	81	0.08	1.14	0.97	1.03	9.6
x00009965	-1.201	0.020	72	0.22	0.90	0.98	1.02	-10.2
x00069889	-2.499	0.064	72	0.30	1.00	0.94	1.06	0.1
x00069887	-2.458	0.064	71	0.35	0.97	0.94	1.06	-1.0
x00009994	-1.842	0.059	59	0.33	0.99	0.96	1.04	-0.5
x00077809	-1.353	0.058	48	0.26	1.03	0.96	1.04	1.7
x00075681	-0.417	0.063	29	0.26	1.00	0.94	1.06	0.0
x00090193	-0.077	0.019	57	0.28	0.99	0.99	1.01	-2.1
x00093357	-0.780	0.026	71	0.25	1.00	0.98	1.02	-0.3
x00075720	-0.352	0.024	63	0.30	0.98	0.98	1.02	-2.7
x00090180	-0.874	0.026	73	0.19	1.03	0.98	1.02	2.2
x00093353	-0.955	0.027	75	0.21	1.01	0.97	1.03	1.1
x00090578	-0.108	0.024	58	0.21	1.03	0.99	1.01	3.9
x00074774	-0.953	0.027	75	0.06	1.09	0.97	1.03	6.7
x00077626	0.213	0.019	51	0.15	1.07	0.99	1.01	11.6
x00090991	-0.032	0.019	56	0.29	0.99	0.99	1.01	-2.0
x00075653	-1.054	0.027	76	0.24	1.00	0.97	1.03	-0.2
x00090852	-0.427	0.025	65	0.26	0.99	0.98	1.02	-0.7

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00098858	-0.106	0.024	58	0.29	0.99	0.99	1.01	-1.7
x00075649	0.223	0.024	50	0.31	0.98	0.99	1.01	-3.1
x00090588	0.605	0.016	49	0.05	0.99	0.99	1.01	-0.9
x00075672	-1.015	0.020	80	0.09	1.00	0.98	1.02	0.2
x00091123	1.297	0.017	35	0.08	1.01	0.99	1.01	1.7
x00075669	1.788	0.018	26	0.02	0.97	0.98	1.02	-3.2
x00090585	1.556	0.018	30	0.10	0.95	0.98	1.02	-5.9
x00075728	1.603	0.023	28	0.02	1.12	0.98	1.02	10.4
x00090996	-0.578	0.035	67	0.28	1.00	0.97	1.03	-0.3
x00090967	-0.657	0.036	69	0.28	0.99	0.97	1.03	-0.7
x00090219	-1.518	0.043	83	0.23	1.00	0.95	1.05	-0.1
x00090879	-0.041	0.034	56	0.25	1.02	0.98	1.02	2.1
x00093366	0.086	0.034	53	0.29	1.00	0.98	1.02	-0.4
x00090173	-0.045	0.034	56	0.33	0.97	0.98	1.02	-2.6
x00074695	0.650	0.022	54	0.08	1.04	0.98	1.02	5.3
x00093413	1.237	0.037	29	0.36	0.94	0.97	1.03	-3.4
x00074668	0.972	0.026	43	0.14	0.97	0.98	1.02	-3.5
x00075691	1.285	0.027	37	0.08	1.05	0.98	1.02	4.2
x00074677	1.673	0.040	22	0.21	1.01	0.96	1.04	0.5
x00093414	0.850	0.041	59	0.22	1.03	0.97	1.03	2.4
x00090542	1.095	0.040	53	0.28	1.00	0.98	1.02	0.3
x00074691	0.921	0.040	57	0.34	0.96	0.97	1.03	-3.1
x00098871	0.937	0.040	57	0.29	0.99	0.97	1.03	-0.8
x00077610	1.723	0.029	40	0.18	1.06	0.98	1.02	6.0
x00074748	1.381	0.040	47	0.34	0.96	0.98	1.02	-3.1
x00076585	2.312	0.044	28	0.23	1.02	0.96	1.04	0.9
x00009887	2.114	0.030	32	0.25	1.02	0.97	1.03	1.6
x00090856	2.658	0.048	22	0.17	1.05	0.95	1.05	1.9
x00075667	2.237	0.044	29	0.35	0.95	0.96	1.04	-2.6
x00090889	2.344	0.045	27	0.29	0.99	0.96	1.04	-0.6
x00091120	2.856	0.050	19	0.25	0.99	0.94	1.06	-0.2
x00093266	2.866	0.035	19	0.11	1.08	0.96	1.04	3.8
x00098853	3.330	0.041	13	0.19	1.01	0.95	1.05	0.2
x00074794	3.278	0.040	14	0.29	0.96	0.95	1.05	-1.4
x00093423	3.009	0.037	17	0.24	1.00	0.96	1.04	0.0
x00075683	3.262	0.040	14	0.25	0.99	0.95	1.05	-0.4
x00098854	3.452	0.042	12	0.39	0.91	0.94	1.06	-3.3
x00090892	1.386	0.040	47	0.30	0.99	0.98	1.02	-0.8
x00090275	1.847	0.041	37	0.41	0.93	0.97	1.03	-4.7
x00090872	2.572	0.047	23	0.10	1.10	0.95	1.05	3.9
x00076650	1.644	0.040	41	0.24	1.03	0.97	1.03	1.9
x00093365	2.019	0.042	33	0.48	0.89	0.97	1.03	-6.6

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00077818	2.258	0.044	29	0.38	0.94	0.96	1.04	-3.2
x00093409	2.193	0.043	30	0.25	1.02	0.96	1.04	1.1
x00081228	3.180	0.055	15	0.04	1.11	0.93	1.07	3.0
x00090859	4.246	0.080	6	0.23	0.97	0.87	1.13	-0.4

B.O.11. Year 7 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00023679	-3.653	0.069	90	0.28	0.97	0.90	1.10	-0.6
x00023602	-3.010	0.056	83	0.42	0.91	0.93	1.07	-2.8
x00023660	-2.684	0.052	78	0.25	1.01	0.95	1.05	0.4
x00093150	-2.562	0.050	76	0.37	0.94	0.95	1.05	-2.4
x00069670	-3.433	0.050	94	0.24	0.93	0.92	1.08	-1.7
x00093241	-3.118	0.058	84	0.34	0.95	0.93	1.07	-1.3
x00023647	-2.407	0.049	73	0.38	0.94	0.95	1.05	-2.6
x00075674	-2.516	0.050	75	0.39	0.93	0.95	1.05	-3.0
x00090863	-1.905	0.064	64	0.43	0.91	0.95	1.05	-3.7
x00093260	-2.003	0.046	66	0.44	0.90	0.96	1.04	-5.4
x00023662	-1.712	0.044	60	0.31	0.99	0.97	1.03	-0.4
x00076669	-2.642	0.051	77	0.37	0.94	0.95	1.05	-2.2
x00090993	-0.715	0.063	38	0.25	1.01	0.96	1.04	0.5
x00076584	-1.937	0.037	82	0.26	0.87	0.96	1.04	-6.2
x00098952	-0.797	0.022	66	0.22	1.04	0.98	1.02	4.4
x00093379	-0.436	0.046	33	0.32	0.97	0.96	1.04	-1.6
x00069669	-1.970	0.022	84	0.16	1.02	0.97	1.03	1.3
x00076680	-0.581	0.064	36	0.19	1.04	0.95	1.05	1.9
x00093149	-1.548	0.044	56	0.17	1.08	0.97	1.03	5.6
x00023624	-0.894	0.018	67	0.22	1.01	0.99	1.01	0.7
x00009980	-2.366	0.048	73	0.38	0.94	0.96	1.04	-2.9
x00009962	-1.126	0.018	71	0.19	1.06	0.98	1.02	6.3
x00098688	-1.375	0.019	75	0.19	1.04	0.98	1.02	3.9
x00023584	-0.534	0.017	60	0.22	0.95	0.99	1.01	-8.3
x00090852	-1.079	0.062	46	0.25	1.02	0.96	1.04	0.8
x00093249	-1.349	0.061	52	0.46	0.89	0.96	1.04	-5.8
x00075681	-1.132	0.061	47	0.37	0.95	0.96	1.04	-2.8
x00093168	-1.721	0.062	60	0.41	0.93	0.96	1.04	-3.3
x00077606	-1.053	0.061	45	0.28	1.01	0.96	1.04	0.5
x00023645	-1.847	0.063	63	0.31	0.99	0.95	1.05	-0.4
x00093074	-1.179	0.031	71	0.26	0.91	0.97	1.03	-6.1
x00075720	-1.509	0.027	81	0.25	0.98	0.97	1.03	-1.2
x00090991	-1.363	0.022	79	0.30	0.96	0.98	1.02	-3.5
x00075653	-1.995	0.032	87	0.24	0.98	0.96	1.04	-1.1
x00093139	-1.262	0.026	78	0.31	0.96	0.97	1.03	-3.0
x00075385	-1.267	0.026	78	0.26	0.98	0.97	1.03	-1.2
x00075649	-1.090	0.025	75	0.31	0.96	0.98	1.02	-3.3
x00093391	0.165	0.018	49	0.20	1.03	0.99	1.01	5.1
x00093414	0.011	0.022	52	0.20	1.03	0.99	1.01	4.4
x00093148	-0.392	0.018	61	0.24	1.00	0.99	1.01	0.6
x00093034	0.335	0.022	45	0.27	0.99	0.99	1.01	-1.8

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00093078	0.285	0.022	46	0.36	0.95	0.99	1.01	-8.6
x00093398	0.047	0.022	51	0.31	0.97	0.99	1.01	-4.7
x00093388	-0.066	0.022	54	0.28	0.99	0.99	1.01	-1.8
x00093293	0.654	0.021	40	0.07	1.05	0.99	1.01	7.8
x00093097	0.771	0.021	37	0.11	1.03	0.99	1.01	4.0
x00075728	0.648	0.021	40	0.13	1.02	0.99	1.01	2.5
x00093153	1.041	0.017	33	0.02	1.07	0.99	1.01	10.4
x00093389	0.805	0.017	37	0.05	1.08	0.99	1.01	12.7
x00093294	0.485	0.020	44	0.12	0.99	0.99	1.01	-1.6
x00023668	-2.284	0.050	90	0.21	0.98	0.93	1.07	-0.5
x00023605	-1.830	0.043	86	0.24	0.98	0.94	1.06	-0.8
x00076651	-0.226	0.031	58	0.26	0.99	0.98	1.02	-0.6
x00093035	-0.273	0.031	59	0.23	1.01	0.98	1.02	1.0
x00093143	-0.371	0.031	61	0.34	0.95	0.98	1.02	-4.8
x00093413	-0.032	0.031	54	0.36	0.94	0.98	1.02	-6.6
x00075691	0.228	0.031	48	0.25	1.00	0.98	1.02	0.5
x00093380	1.559	0.037	21	0.30	0.96	0.96	1.04	-2.2
x00093415	1.612	0.031	23	0.02	0.96	0.97	1.03	-2.4
x00093240	1.599	0.031	23	-0.02	1.13	0.97	1.03	7.6
x00093137	2.030	0.035	17	0.00	1.09	0.96	1.04	4.0
x00093374	0.234	0.027	51	0.04	0.94	0.98	1.02	-8.4
x00091132	1.409	0.038	35	0.15	1.05	0.97	1.03	3.3
x00077610	0.291	0.037	60	0.17	1.03	0.98	1.02	2.9
x00010034	0.693	0.051	51	0.34	0.95	0.97	1.03	-3.3
x00077611	1.515	0.054	33	0.05	1.11	0.96	1.04	4.8
x00093298	1.477	0.054	34	0.18	1.04	0.96	1.04	1.7
x00090856	1.576	0.055	32	0.31	0.97	0.96	1.04	-1.4
x00093055	1.160	0.052	40	0.34	0.96	0.97	1.03	-2.3
x00075400	1.643	0.055	30	0.09	1.09	0.95	1.05	3.8
x00076567	1.352	0.053	36	0.26	1.00	0.96	1.04	0.1
x00091120	1.562	0.039	32	0.37	0.93	0.97	1.03	-4.4
x00093423	1.671	0.039	30	0.23	1.00	0.97	1.03	0.0
x00098853	2.007	0.059	24	0.37	0.93	0.94	1.06	-2.3
x00078220	1.615	0.039	31	0.33	0.96	0.97	1.03	-2.7
x00093401	1.967	0.042	24	0.30	0.96	0.96	1.04	-2.0
x00093422	1.754	0.056	28	0.43	0.91	0.95	1.05	-3.6
x00076646	2.067	0.060	23	0.31	0.96	0.94	1.06	-1.1
x00075740	1.795	0.057	28	0.26	0.99	0.95	1.05	-0.3
x00093314	2.768	0.052	13	0.26	0.98	0.93	1.07	-0.6
x00093295	4.501	0.105	3	0.22	0.96	0.81	1.19	-0.4
x00098766	1.133	0.052	41	0.21	1.01	0.97	1.03	0.8
x00093155	1.453	0.054	34	0.11	1.06	0.96	1.04	2.9

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00091128	2.134	0.062	22	0.36	0.94	0.93	1.07	-1.9
x00093266	1.787	0.057	27	0.14	1.04	0.95	1.05	1.5
x00081228	2.526	0.069	16	-0.01	1.09	0.91	1.09	2.0
x00077616	1.479	0.054	33	0.13	1.05	0.96	1.04	2.5
x00093100	2.608	0.071	15	0.11	1.03	0.91	1.09	0.7
x00077830	2.141	0.062	21	0.34	0.94	0.93	1.07	-1.7
x00098854	1.873	0.058	26	0.42	0.91	0.94	1.06	-3.3
x00076545	2.363	0.066	18	0.28	0.96	0.92	1.08	-0.9
x00075684	4.415	0.145	3	0.22	0.97	0.74	1.26	-0.2

B.O.12. Year 9 Grammar and Punctuation Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00023679	-4.177	0.082	93.3	0.28	0.95	0.87	1.13	-0.7
x00093150	-3.046	0.056	82.7	0.31	0.96	0.93	1.07	-1.3
x00093270	-2.454	0.068	73.7	0.34	0.96	0.94	1.06	-1.1
x00093130	-2.571	0.049	75.6	0.34	0.96	0.95	1.05	-1.6
x00093267	-2.108	0.045	67.1	0.34	0.96	0.96	1.04	-2.2
x00093129	-1.871	0.044	62.3	0.44	0.90	0.97	1.03	-6.2
x00093272	-2.899	0.053	80.7	0.33	0.95	0.94	1.06	-1.6
x00027872	-2.135	0.046	67.6	0.25	1.01	0.96	1.04	0.5
x00023689	-2.367	0.067	72.2	0.42	0.91	0.94	1.06	-3.0
x00093074	-1.336	0.061	50.8	0.41	0.93	0.96	1.04	-3.6
x00093124	-2.434	0.048	73.2	0.30	0.97	0.96	1.04	-1.2
x00093379	-0.723	0.044	37.2	0.29	0.99	0.97	1.03	-0.5
x00093269	-0.546	0.045	33.6	0.32	0.97	0.97	1.03	-2.0
x00023645	-2.333	0.067	71.6	0.36	0.95	0.94	1.06	-1.5
x00077845	-1.574	0.022	76.4	0.21	0.96	0.98	1.02	-3.7
x00010129	-1.307	0.020	71.9	0.20	0.97	0.98	1.02	-3.2
x00076680	-1.337	0.061	50.9	0.28	1.01	0.96	1.04	0.3
x00093149	-1.447	0.043	53.1	0.20	1.05	0.97	1.03	3.7
x00093127	-1.288	0.020	71.6	0.16	1.05	0.98	1.02	5.4
x00098767	-1.721	0.044	59.1	0.24	1.02	0.97	1.03	1.5
x00093299	-1.042	0.020	67.0	0.15	1.03	0.98	1.02	3.8
x00098736	-1.454	0.043	53.3	0.23	1.03	0.97	1.03	1.9
x00023711	-0.833	0.024	64.3	0.19	1.01	0.98	1.02	1.4
x00023715	-1.230	0.020	70.5	0.21	0.90	0.98	1.02	-10.7
x00093278	-1.041	0.029	60.6	0.14	1.10	0.98	1.02	8.4
x00023661	-3.045	0.078	82.7	0.36	0.93	0.91	1.09	-1.5
x00023703	-3.009	0.078	82.2	0.40	0.91	0.91	1.09	-1.9
x00093393	-1.422	0.034	71.7	0.09	1.04	0.97	1.03	2.3
x00098768	-2.473	0.068	73.8	0.35	0.95	0.94	1.06	-1.7
x00023698	-1.509	0.061	54.2	0.39	0.93	0.96	1.04	-3.6
x00093303	-1.056	0.061	44.2	0.33	0.97	0.96	1.04	-1.8
x00093139	-2.076	0.036	87.3	0.25	0.97	0.95	1.05	-1.2
x00076628	-1.430	0.029	78.9	0.31	0.95	0.97	1.03	-2.9
x00093396	-0.338	0.025	57.8	0.17	1.03	0.99	1.01	4.4
x00093391	-0.200	0.020	54.5	0.19	1.03	0.99	1.01	4.9
x00093148	-0.810	0.021	67.6	0.21	1.01	0.98	1.02	1.6
x00093034	-0.278	0.024	56.5	0.27	0.99	0.99	1.01	-1.7
x00093398	-0.418	0.025	59.6	0.30	0.97	0.98	1.02	-3.9
x00093388	-0.720	0.026	66.0	0.24	1.00	0.98	1.02	-0.4
x00075367	-0.156	0.024	53.7	0.23	1.00	0.99	1.01	0.6
x00093147	0.721	0.025	34.3	0.17	1.02	0.98	1.02	2.5

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00093087	0.388	0.025	41.4	0.15	1.04	0.99	1.01	5.4
x00077395	0.011	0.024	50.0	0.28	0.98	0.99	1.01	-2.7
x00075746	0.792	0.026	32.8	0.13	1.04	0.98	1.02	4.3
x00093293	0.518	0.021	42.9	0.07	1.03	0.99	1.01	4.6
x00093160	0.853	0.017	36.7	0.03	1.07	0.99	1.01	10.5
x00077839	1.474	0.019	25.0	0.05	1.13	0.98	1.02	12.7
x00093137	1.556	0.025	22.9	0.03	1.07	0.97	1.03	5.1
x00077801	1.320	0.024	26.9	0.03	1.09	0.98	1.02	7.6
x00077836	1.226	0.023	28.6	0.05	0.94	0.98	1.02	-5.3
x00023717	-1.480	0.042	78.9	0.31	0.96	0.95	1.05	-1.9
x00093313	-0.270	0.035	55.5	0.41	0.92	0.98	1.02	-7.7
x00093301	-0.407	0.035	58.5	0.25	1.00	0.98	1.02	0.3
x00098775	-0.518	0.035	60.9	0.27	1.00	0.98	1.02	-0.2
x00093312	-0.114	0.035	52.0	0.38	0.94	0.98	1.02	-5.9
x00093305	0.638	0.036	35.5	0.44	0.90	0.97	1.03	-7.7
x00093294	0.261	0.035	43.6	0.22	1.03	0.98	1.02	2.5
x00093135	0.276	0.035	43.3	0.34	0.96	0.98	1.02	-3.9
x00093380	0.542	0.036	37.6	0.33	0.96	0.98	1.02	-3.2
x00075739	1.449	0.042	20.8	0.30	0.96	0.95	1.05	-1.7
x00075376	0.896	0.028	37.2	0.03	0.96	0.98	1.02	-4.0
x00076624	1.536	0.031	25.2	0.08	0.94	0.97	1.03	-4.2
x00076690	1.406	0.030	27.4	0.13	0.91	0.97	1.03	-6.5
x00075375	1.445	0.030	26.7	0.07	1.00	0.97	1.03	-0.3
x00093374	-0.544	0.035	76.9	0.21	1.00	0.96	1.04	0.1
x00076643	1.192	0.042	40.6	0.09	1.09	0.97	1.03	6.3
x00093298	1.026	0.042	44.3	0.23	1.02	0.97	1.03	1.3
x00075742	1.850	0.046	27.4	0.40	0.92	0.96	1.04	-4.0
x00093136	1.410	0.043	36.0	0.20	1.03	0.97	1.03	1.9
x00076677	1.605	0.032	32.2	0.41	0.91	0.97	1.03	-7.2
x00075740	1.595	0.044	32.2	0.31	0.96	0.96	1.04	-2.0
x00098769	1.983	0.048	25.0	0.16	1.04	0.95	1.05	1.7
x00093401	1.749	0.033	29.4	0.44	0.89	0.97	1.03	-7.7
x00075735	1.683	0.045	30.5	0.32	0.96	0.96	1.04	-2.1
x00077837	1.582	0.032	32.6	0.37	0.94	0.98	1.02	-5.2
x00077843	2.245	0.036	20.9	0.38	0.92	0.96	1.04	-4.1
x00093309	2.246	0.036	20.9	0.31	0.96	0.96	1.04	-2.2
x00075378	2.456	0.054	17.7	0.03	1.08	0.94	1.06	2.5
x00093314	2.764	0.042	14.0	0.22	0.99	0.94	1.06	-0.3
x00076617	2.752	0.042	14.1	0.21	0.99	0.95	1.05	-0.2
x00093151	3.074	0.066	10.8	0.15	1.01	0.91	1.09	0.2
x00093311	3.748	0.061	6.0	0.13	1.00	0.90	1.10	0.1
x00077802	3.376	0.052	8.3	0.13	1.02	0.92	1.08	0.4

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00023663	0.494	0.043	56.6	0.23	1.01	0.97	1.03	0.6
x00077838	0.050	0.045	66.1	0.23	1.00	0.97	1.03	0.2
x00076630	0.790	0.042	49.9	0.21	1.03	0.98	1.02	2.2
x00093141	1.563	0.045	33.2	-0.14	1.22	0.96	1.04	11.5
x00076640	0.525	0.043	55.9	0.20	1.02	0.97	1.03	1.8
x00098766	1.204	0.043	40.7	0.23	1.01	0.97	1.03	0.8
x00077835	1.974	0.048	25.4	0.25	0.99	0.95	1.05	-0.5
x00027638	2.511	0.055	17.2	0.29	0.96	0.93	1.07	-1.0
x00093307	2.794	0.061	13.7	0.39	0.92	0.92	1.08	-2.0

B.O.13. Year 3 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00075112	-2.734	0.032	91	0.24	0.96	0.96	1.04	-1.9
x00085137	-2.050	0.026	85	0.22	1.00	0.97	1.03	0.1
x00084926	-1.163	0.021	73	0.19	1.00	0.98	1.02	0.4
x00087887	-0.706	0.020	65	0.15	1.12	0.98	1.02	12.8
x00085015	-0.211	0.019	56	0.27	0.90	0.98	1.02	13.8
x00001542	-0.461	0.020	61	0.25	0.92	0.98	1.02	-9.4
x00087960	-0.734	0.020	66	0.16	1.07	0.98	1.02	7.1
x00087943	0.436	0.019	43	0.25	0.95	0.98	1.02	-7.0
x00085348	0.150	0.019	49	0.24	0.95	0.99	1.01	-6.9
x00103189	-0.049	0.019	53	0.19	1.04	0.98	1.02	5.4
x00084863	0.546	0.019	41	0.29	0.88	0.98	1.02	15.3
x00093444	0.526	0.019	42	0.14	1.08	0.98	1.02	9.3
x00002751	-3.988	0.073	97	0.12	1.01	0.88	1.12	0.2
x00042780	-1.828	0.035	83	0.27	0.86	0.96	1.04	-7.0
x00027379	-1.394	0.032	77	0.12	1.15	0.97	1.03	8.4
x00042595	-1.509	0.033	79	0.26	0.90	0.97	1.03	-5.7
x00014589	-2.692	0.045	91	0.18	0.96	0.94	1.06	-1.4
x00018844	-1.903	0.036	84	0.22	0.96	0.96	1.04	-2.1
x00002602	-1.677	0.034	81	0.20	1.03	0.96	1.04	1.7
x00018868	-1.835	0.035	83	0.25	0.90	0.96	1.04	-5.2
x00062161	-0.565	0.028	63	0.23	1.03	0.98	1.02	2.0
x00016163	0.079	0.027	51	0.37	0.87	0.98	1.02	12.8
x00002741	-1.307	0.031	76	0.26	0.93	0.97	1.03	-4.5
x00018132	-0.525	0.028	63	0.25	1.03	0.98	1.02	2.4
x00085054	-2.414	0.035	81	0.27	0.96	0.96	1.04	-1.9
x00087734	-2.085	0.033	76	0.36	0.91	0.97	1.03	-5.9
x00085232	-1.469	0.030	65	0.12	1.08	0.98	1.02	6.9
x00075091	-1.754	0.031	70	0.29	0.96	0.97	1.03	-3.0
x00027507	-1.748	0.031	70	-0.05	1.22	0.97	1.03	15.1
x00093461	-0.851	0.028	52	0.28	0.95	0.98	1.02	-5.0
x00027457	-0.632	0.028	47	0.17	1.05	0.98	1.02	4.9
x00027513	-0.585	0.028	46	0.28	0.95	0.98	1.02	-5.4
x00027818	-0.863	0.028	52	0.15	1.08	0.98	1.02	8.1
x00027208	0.167	0.030	31	0.09	1.07	0.97	1.03	5.1
x00093285	0.080	0.030	32	0.10	1.07	0.98	1.02	5.2
x00019483	-0.060	0.030	35	0.03	1.17	0.98	1.02	13.7
x00027606	-1.607	0.043	67	0.38	0.90	0.96	1.04	-5.4
x00036890	-2.237	0.048	77	0.29	0.99	0.95	1.05	-0.2
x00038695	-1.915	0.045	72	0.29	0.98	0.96	1.04	-0.9
x00035698	-1.913	0.045	72	0.14	1.10	0.96	1.04	4.7
x00002562	-1.690	0.043	68	0.34	0.95	0.96	1.04	-2.9

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00038735	-1.709	0.043	69	0.19	1.07	0.96	1.04	3.5
x00002615	-0.885	0.040	52	0.34	0.92	0.97	1.03	-5.6
x00011066	-1.703	0.043	69	0.36	0.93	0.96	1.04	-3.9
x00028216	-0.452	0.041	43	0.33	0.90	0.97	1.03	-7.2
x00086613	0.653	0.047	22	0.23	0.98	0.95	1.05	-0.9
x00002772	0.228	0.044	30	0.30	0.93	0.96	1.04	-3.8
x00075163	-3.361	0.043	87	0.33	0.95	0.94	1.06	-1.6
x00027553	-2.994	0.039	83	0.24	0.99	0.95	1.05	-0.4
x00027520	-2.603	0.035	77	0.25	0.99	0.96	1.04	-0.5
x00027431	-2.662	0.036	78	0.35	0.93	0.96	1.04	-3.5
x00088913	-2.840	0.037	81	0.21	1.01	0.96	1.04	0.3
x00085089	-0.928	0.030	43	0.32	0.96	0.98	1.02	-3.9
x00085025	-0.495	0.031	34	0.28	0.97	0.98	1.02	-2.1
x00075132	-1.135	0.030	47	0.28	0.99	0.98	1.02	-0.8
x00085507	-1.130	0.030	47	0.18	1.05	0.98	1.02	5.4
x00087637	-1.002	0.030	44	0.33	0.96	0.98	1.02	-4.1
x00027452	-0.040	0.034	25	0.35	0.93	0.97	1.03	-4.0
x00028201	-0.298	0.032	30	0.27	0.99	0.97	1.03	-1.0
x00027745	0.920	0.024	46	0.38	0.92	0.98	1.02	-9.5
x00028217	1.319	0.025	38	0.23	1.04	0.98	1.02	3.8
x00084847	0.919	0.024	46	0.35	0.93	0.98	1.02	-8.2
x00027498	1.101	0.025	43	0.25	1.02	0.98	1.02	2.7
x00084944	1.132	0.025	42	0.33	0.96	0.98	1.02	-4.3
x00027511	0.971	0.024	45	0.37	0.92	0.98	1.02	10.1
x00084949	1.414	0.025	36	0.31	0.97	0.98	1.02	-2.7
x00027534	1.626	0.026	32	0.12	1.13	0.98	1.02	11.4
x00027588	0.344	0.025	59	0.25	1.03	0.98	1.02	3.0
x00027522	1.478	0.025	35	0.33	0.95	0.98	1.02	-5.0
x00085567	1.893	0.027	28	0.26	1.00	0.97	1.03	0.3
x00085021	1.608	0.026	33	0.33	0.95	0.98	1.02	-4.9
x00085092	0.996	0.034	44	0.12	1.10	0.98	1.02	8.3
x00018128	-0.110	0.036	67	0.03	1.15	0.97	1.03	9.7
x00020200	0.478	0.034	55	0.26	0.98	0.98	1.02	-1.9
x00002849	1.134	0.035	41	0.12	1.09	0.98	1.02	6.9
x00018870	0.285	0.035	59	0.26	0.98	0.98	1.02	-1.7
x00075119	0.767	0.034	49	0.29	0.95	0.98	1.02	-4.2
x00019485	1.447	0.036	35	0.29	0.94	0.97	1.03	-4.4
x00085011	2.201	0.041	22	0.02	1.13	0.96	1.04	5.7
x00085564	1.522	0.036	33	0.13	1.06	0.97	1.03	4.0
x00084941	2.155	0.040	22	0.10	1.05	0.96	1.04	2.4
x00002831	1.072	0.034	42	0.30	0.95	0.98	1.02	-4.8
x00020357	1.680	0.037	30	0.16	1.03	0.97	1.03	2.0

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00085058	-0.957	0.027	75	0.14	1.03	0.97	1.03	2.5
x00092714	-0.661	0.025	69	0.16	1.04	0.98	1.02	3.5
x00027440	0.203	0.024	50	0.23	0.97	0.99	1.01	-3.8
x00068716	-0.169	0.024	59	0.18	1.02	0.98	1.02	3.1
x00027524	-0.195	0.024	59	0.15	1.04	0.98	1.02	5.1
x00027432	0.662	0.024	40	0.27	0.95	0.98	1.02	-6.1
x00076694	0.603	0.024	41	0.15	1.04	0.99	1.01	4.7
x00093292	1.308	0.026	27	0.13	1.03	0.98	1.02	2.1
x00027813	0.648	0.024	40	0.24	0.97	0.98	1.02	-3.6
x00027509	1.561	0.028	23	-0.02	1.11	0.97	1.03	7.4
x00084920	1.292	0.027	27	0.19	1.00	0.98	1.02	-0.1
x00085139	2.469	0.037	11	0.24	0.94	0.95	1.05	-2.2
x00085056	-0.394	0.035	64	0.14	1.04	0.98	1.02	3.1
x00038672	-0.841	0.037	73	0.10	1.07	0.97	1.03	4.1
x00038727	0.157	0.033	52	0.08	1.08	0.98	1.02	8.4
x00027811	0.017	0.033	55	0.15	1.05	0.98	1.02	4.6
x00026887	-1.135	0.040	78	0.21	0.98	0.96	1.04	-0.9
x00075131	0.344	0.034	47	0.31	0.93	0.98	1.02	-7.4
x00002845	1.040	0.036	32	0.11	1.04	0.97	1.03	3.1
x00085213	2.710	0.057	9	0.23	0.94	0.91	1.09	-1.4
x00003052	0.375	0.034	47	0.20	0.99	0.98	1.02	-1.4
x00002789	0.418	0.034	46	0.14	1.04	0.98	1.02	4.3
x00002832	1.138	0.037	30	0.21	1.00	0.97	1.03	-0.2
x00085379	2.535	0.054	11	0.16	0.99	0.92	1.08	-0.2
x00075095	1.142	0.036	61	0.21	1.01	0.98	1.02	0.6
x00027743	1.900	0.036	45	0.33	0.95	0.98	1.02	-4.4
x00085245	1.104	0.036	62	0.23	0.99	0.98	1.02	-0.9
x00100202	2.263	0.037	37	0.27	0.98	0.97	1.03	-1.7
x00086122	2.147	0.036	39	0.33	0.96	0.98	1.02	-3.6
x00093322	2.710	0.040	28	0.19	1.02	0.96	1.04	1.3
x00086064	3.069	0.043	22	0.17	1.04	0.95	1.05	1.5
x00027460	3.023	0.042	23	0.22	1.02	0.96	1.04	0.7
x00093405	2.734	0.040	28	0.29	0.99	0.96	1.04	-0.7
x00084978	2.834	0.041	26	0.27	1.00	0.96	1.04	-0.1
x00093447	2.983	0.042	23	0.35	0.97	0.96	1.04	-1.5
x00085094	3.138	0.044	21	0.25	1.01	0.95	1.05	0.3

B.O.14. Year 5 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00028201	-2.095	0.026	86	0.28	0.96	0.97	1.03	-2.8
x00092714	-1.700	0.023	81	0.10	1.17	0.97	1.03	11.9
x00086808	-1.491	0.022	78	0.29	0.97	0.98	1.02	-2.5
x00087781	-1.159	0.021	73	0.24	1.05	0.98	1.02	5.2
x00087865	-1.371	0.022	76	0.20	1.08	0.98	1.02	6.7
x00027524	-1.399	0.022	77	0.22	1.06	0.98	1.02	4.8
x00084847	-0.734	0.020	66	0.39	0.88	0.98	1.02	14.0
x00092718	-0.416	0.019	60	0.18	1.12	0.98	1.02	15.2
x00085987	-0.076	0.019	53	0.37	0.90	0.99	1.01	14.0
x00026973	0.586	0.019	40	0.22	1.06	0.98	1.02	7.4
x00027390	0.500	0.019	42	0.39	0.86	0.99	1.01	18.6
x00027191	0.519	0.019	42	0.16	1.13	0.98	1.02	16.0
x00092939	0.858	0.020	35	0.27	1.01	0.98	1.02	0.8
x00068564	1.513	0.022	24	0.40	0.83	0.98	1.02	16.0
x00077948	-3.016	0.049	93	0.26	0.93	0.93	1.07	-1.9
x00087855	-1.324	0.031	76	0.21	1.05	0.97	1.03	3.2
x00093397	-1.662	0.033	80	0.34	0.90	0.96	1.04	-5.5
x00086613	-1.418	0.031	77	0.29	0.94	0.97	1.03	-3.5
x00035698	-2.828	0.046	92	0.16	1.02	0.93	1.07	0.7
x00027811	-1.250	0.030	74	0.19	1.09	0.97	1.03	5.6
x00092719	-0.537	0.028	62	0.18	1.12	0.98	1.02	10.6
x00087924	-0.508	0.028	61	0.32	0.96	0.98	1.02	-3.5
x00019485	-0.354	0.027	59	0.37	0.89	0.98	1.02	10.6
x00027185	-0.016	0.027	52	0.36	0.91	0.98	1.02	-9.4
x00087063	0.465	0.027	42	0.24	1.05	0.98	1.02	4.2
x00068921	0.482	0.027	42	0.19	1.11	0.98	1.02	9.8
x00020472	-0.543	0.028	62	0.15	1.18	0.98	1.02	14.8
x00018749	0.014	0.027	51	0.38	0.89	0.98	1.02	10.8
x00027513	-2.252	0.030	82	0.28	0.95	0.97	1.03	-3.1
x00087637	-2.554	0.033	86	0.22	0.98	0.96	1.04	-1.1
x00087960	-2.292	0.030	82	0.26	0.96	0.96	1.04	-2.2
x00103189	-1.219	0.025	65	0.27	0.98	0.98	1.02	-2.1
x00087784	-1.740	0.027	74	0.18	1.07	0.97	1.03	4.9
x00027737	-1.014	0.024	60	0.30	0.96	0.98	1.02	-4.5
x00087943	-0.707	0.024	54	0.33	0.94	0.98	1.02	-7.7
x00027217	-0.389	0.024	47	0.28	0.98	0.98	1.02	-2.5
x00027511	-0.313	0.024	46	0.35	0.93	0.98	1.02	-9.2
x00085382	0.061	0.024	38	0.15	1.09	0.98	1.02	10.0
x00087819	0.545	0.026	28	0.20	1.03	0.98	1.02	2.4
x00027534	0.272	0.025	33	0.08	1.13	0.98	1.02	13.3
x00086122	0.662	0.026	26	0.25	0.99	0.98	1.02	-0.4

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00100202	1.319	0.031	16	0.24	0.98	0.96	1.04	-1.0
x00085099	-3.153	0.056	91	0.33	0.91	0.92	1.08	-2.1
x00018868	-3.227	0.058	91	0.29	0.94	0.91	1.09	-1.5
x00038695	-3.010	0.053	90	0.27	0.96	0.92	1.08	-1.2
x00014754	-2.141	0.041	80	0.13	1.10	0.95	1.05	4.0
x00087961	-2.110	0.041	80	0.31	0.93	0.95	1.05	-2.9
x00068119	-0.172	0.034	43	0.36	0.94	0.98	1.02	-4.9
x00062161	-1.843	0.039	76	0.26	0.99	0.96	1.04	-0.6
x00068620	-0.342	0.033	46	0.37	0.92	0.98	1.02	-7.3
x00035425	-0.913	0.034	58	0.31	0.98	0.98	1.02	-1.5
x00084959	-0.287	0.033	45	0.33	0.98	0.98	1.02	-2.1
x00093438	0.514	0.036	29	0.12	1.10	0.97	1.03	5.9
x00086164	0.717	0.038	26	0.36	0.93	0.97	1.03	-4.1
x00087911	0.678	0.037	26	0.27	0.99	0.97	1.03	-0.3
x00036869	0.853	0.039	23	0.34	0.93	0.96	1.04	-3.6
x00085054	-3.698	0.055	88	0.30	1.00	0.92	1.08	0.1
x00085137	-2.732	0.042	76	0.29	0.98	0.96	1.04	-1.1
x00087885	-2.684	0.042	75	0.35	0.96	0.96	1.04	-2.2
x00087626	-2.397	0.039	70	0.26	0.99	0.97	1.03	-0.6
x00087679	-2.089	0.038	63	0.19	1.02	0.98	1.02	1.3
x00087887	-2.174	0.038	65	0.23	1.00	0.97	1.03	0.0
x00086010	-1.882	0.037	59	0.34	0.95	0.98	1.02	-5.0
x00075132	-2.409	0.039	70	0.32	0.96	0.97	1.03	-2.6
x00027189	-0.670	0.039	32	0.38	0.92	0.97	1.03	-5.2
x00086125	-1.099	0.037	41	0.22	1.00	0.98	1.02	-0.1
x00027208	-1.502	0.036	50	0.27	0.98	0.98	1.02	-1.7
x00087810	-1.507	0.036	50	0.20	1.01	0.98	1.02	0.7
x00068716	-1.060	0.037	40	0.30	0.97	0.98	1.02	-2.4
x00027372	0.467	0.051	14	0.23	0.98	0.93	1.07	-0.7
x00027522	-0.089	0.032	73	0.27	0.96	0.97	1.03	-3.1
x00084909	0.557	0.029	60	0.22	1.03	0.98	1.02	3.1
x00087831	0.871	0.029	53	0.21	1.04	0.98	1.02	4.4
x00036899	-0.908	0.039	85	0.25	0.95	0.95	1.05	-2.2
x00002938	-0.113	0.032	73	0.20	1.01	0.97	1.03	0.5
x00086113	1.091	0.029	49	0.28	0.98	0.98	1.02	-1.9
x00087826	0.936	0.029	52	0.11	1.12	0.98	1.02	11.5
x00027720	1.471	0.029	41	0.14	1.10	0.98	1.02	9.0
x00027212	1.230	0.029	46	0.24	1.02	0.98	1.02	1.8
x00087922	1.749	0.030	35	0.25	1.02	0.97	1.03	1.3
x00092124	1.639	0.030	37	0.36	0.91	0.98	1.02	-7.8
x00087876	2.344	0.033	24	0.17	1.06	0.97	1.03	3.3
x00027723	2.239	0.033	26	0.33	0.94	0.97	1.03	-3.8

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00093437	2.207	0.033	27	0.23	1.02	0.97	1.03	1.5
x00002789	-0.803	0.052	83	0.15	1.01	0.94	1.06	0.3
x00027205	0.735	0.040	55	0.16	1.07	0.97	1.03	5.4
x00002831	-0.386	0.047	77	0.18	1.01	0.95	1.05	0.4
x00068565	1.075	0.040	48	0.14	1.08	0.97	1.03	5.4
x00027725	1.800	0.043	33	0.08	1.14	0.96	1.04	7.3
x00014787	0.203	0.042	66	0.19	1.03	0.97	1.03	1.8
x00093779	0.766	0.040	54	0.30	0.95	0.97	1.03	-3.9
x00087921	1.172	0.040	46	0.28	0.98	0.97	1.03	-1.8
x00027192	0.905	0.040	51	0.30	0.94	0.97	1.03	-4.7
x00068672	0.907	0.040	51	0.29	0.97	0.97	1.03	-2.3
x00086073	1.549	0.042	38	0.24	1.02	0.97	1.03	1.1
x00086314	1.832	0.043	32	0.30	0.96	0.96	1.04	-2.1
x00087829	1.713	0.042	34	0.07	1.15	0.96	1.04	8.2
x00005858	0.736	0.041	55	0.25	1.00	0.97	1.03	-0.1
x00087640	-0.250	0.022	56	0.20	1.03	0.99	1.01	4.1
x00086735	-0.011	0.022	51	0.22	1.02	0.99	1.01	3.5
x00085351	-0.066	0.022	52	0.35	0.93	0.99	1.01	11.2
x00093574	0.336	0.022	43	0.23	1.01	0.99	1.01	2.1
x00093465	-0.034	0.022	52	0.25	1.00	0.99	1.01	0.5
x00027813	-0.488	0.023	62	0.35	0.93	0.98	1.02	-8.6
x00087706	0.258	0.022	45	0.36	0.94	0.99	1.01	-9.9
x00069371	0.298	0.023	44	0.17	1.04	0.99	1.01	5.9
x00093767	0.667	0.023	36	0.16	1.05	0.98	1.02	5.7
x00093467	0.428	0.023	41	0.26	0.99	0.99	1.01	-1.4
x00027739	0.595	0.023	38	0.20	1.03	0.98	1.02	4.3
x00027483	0.978	0.025	30	0.17	1.04	0.98	1.02	4.0
x00027195	1.255	0.026	25	0.30	0.96	0.97	1.03	-3.1
x00085495	1.778	0.030	17	0.27	0.96	0.96	1.04	-2.0
x00016163	-1.496	0.039	80	0.27	0.97	0.96	1.04	-1.4
x00093468	-0.277	0.032	57	0.35	0.92	0.98	1.02	-8.2
x00087710	-0.155	0.031	55	0.15	1.06	0.98	1.02	6.7
x00018870	-0.354	0.032	59	0.26	1.00	0.98	1.02	0.0
x00003052	-0.838	0.034	69	0.32	0.95	0.97	1.03	-3.8
x00085985	0.517	0.032	40	0.25	0.99	0.98	1.02	-1.0
x00088330	0.281	0.032	45	0.32	0.97	0.98	1.02	-3.7
x00086020	0.991	0.034	30	0.30	0.96	0.97	1.03	-2.6
x00068143	1.073	0.035	29	0.30	0.96	0.97	1.03	-2.8
x00027385	1.215	0.036	26	0.17	1.03	0.97	1.03	1.8
x00042459	-0.191	0.032	56	0.17	1.04	0.98	1.02	3.8
x00027203	1.260	0.036	25	0.18	1.02	0.96	1.04	1.2
x00028044	1.297	0.037	25	0.21	1.00	0.96	1.04	0.2

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00084864	1.859	0.043	16	0.23	0.98	0.95	1.05	-0.8
x00086064	2.031	0.035	41	0.21	1.03	0.98	1.02	2.9
x00086614	1.488	0.034	53	0.30	0.98	0.98	1.02	-2.1
x00085026	1.064	0.035	62	0.29	0.99	0.98	1.02	-1.1
x00087730	1.554	0.034	51	0.37	0.94	0.98	1.02	-6.2
x00027164	1.531	0.034	52	0.36	0.94	0.98	1.02	-5.9
x00062151	0.195	0.041	79	0.25	0.97	0.96	1.04	-1.1
x00027463	2.089	0.035	40	0.43	0.90	0.98	1.02	-8.6
x00093496	2.539	0.037	30	0.36	0.94	0.97	1.03	-3.9
x00085479	2.836	0.040	25	0.31	0.96	0.96	1.04	-2.2
x00068562	2.293	0.036	36	0.36	0.94	0.97	1.03	-4.7
x00087931	2.724	0.039	27	0.30	0.97	0.96	1.04	-1.8
x00092564	3.485	0.047	16	0.23	0.99	0.94	1.06	-0.4
x00092557	3.461	0.048	16	0.10	1.06	0.94	1.06	2.0
x00027166	2.816	0.041	26	0.34	0.95	0.96	1.04	-2.8

B.O.15. Year 7 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00027251	-1.253	0.020	66	0.24	1.05	0.98	1.02	5.3
x00027018	-0.831	0.019	58	0.19	1.10	0.99	1.01	13.0
x00092579	-0.707	0.019	55	0.19	1.10	0.99	1.01	13.1
x00092626	-0.195	0.019	45	0.31	0.95	0.99	1.01	-6.5
x00027739	-0.731	0.019	56	0.15	1.15	0.99	1.01	20.0
x00092939	-0.385	0.019	49	0.31	0.98	0.99	1.01	-3.2
x00092124	-0.164	0.019	44	0.38	0.86	0.99	1.01	19.8
x00091795	-0.512	0.019	51	0.07	1.23	0.99	1.01	30.4
x00086808	-2.792	0.028	88	0.28	0.95	0.96	1.04	-2.8
x00085987	-1.633	0.021	73	0.38	0.88	0.98	1.02	12.0
x00093767	-0.969	0.019	61	0.29	0.98	0.98	1.02	-3.0
x00026973	-0.896	0.019	59	0.29	0.97	0.99	1.01	-4.2
x00027195	-0.856	0.019	58	0.32	0.95	0.99	1.01	-7.1
x00092244	0.434	0.020	33	0.12	1.15	0.98	1.02	15.7
x00093496	1.022	0.022	23	0.29	0.95	0.98	1.02	-4.7
x00092532	1.893	0.028	13	0.36	0.83	0.96	1.04	-9.7
x00087710	-1.524	0.029	71	0.23	1.05	0.97	1.03	3.8
x00035425	-2.518	0.036	85	0.33	0.93	0.96	1.04	-3.3
x00091750	-0.311	0.027	48	0.30	1.00	0.98	1.02	-0.3
x00087868	-0.459	0.027	51	0.08	1.25	0.98	1.02	22.6
x00092187	-0.539	0.027	52	0.29	1.00	0.98	1.02	-0.1
x00027385	-0.194	0.027	45	0.27	0.98	0.98	1.02	-1.5
x00038785	-0.943	0.027	60	0.30	0.99	0.98	1.02	-1.2
x00091801	-0.018	0.027	42	0.11	1.20	0.98	1.02	17.7
x00068921	-0.846	0.027	58	0.26	1.02	0.98	1.02	1.6
x00085985	-1.212	0.028	65	0.37	0.91	0.98	1.02	-7.7
x00068143	-0.770	0.027	57	0.33	0.97	0.98	1.02	-3.2
x00095113	-0.130	0.027	44	0.40	0.85	0.98	1.02	15.3
x00027212	-0.393	0.027	49	0.32	0.97	0.98	1.02	-2.9
x00084864	-0.157	0.027	44	0.30	0.98	0.98	1.02	-2.3
x00086828	0.428	0.029	33	0.24	1.04	0.98	1.02	3.5
x00068937	1.176	0.032	21	0.37	0.84	0.97	1.03	-9.5
x00087784	-2.527	0.028	80	0.22	1.01	0.97	1.03	0.5
x00027737	-2.233	0.026	75	0.38	0.90	0.97	1.03	-7.5
x00087640	-1.847	0.025	68	0.25	1.01	0.98	1.02	0.8
x00092110	-2.424	0.027	78	0.29	0.97	0.97	1.03	-2.1
x00027299	-1.515	0.024	61	0.43	0.88	0.98	1.02	15.0
x00069371	-0.921	0.023	49	0.23	1.03	0.99	1.01	4.4
x00027280	-1.116	0.023	53	0.16	1.08	0.99	1.01	11.0
x00092374	-1.487	0.024	61	0.36	0.93	0.98	1.02	-8.7
x00087819	-0.537	0.023	40	0.25	1.02	0.98	1.02	2.0

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00027172	-0.250	0.024	34	0.19	1.04	0.98	1.02	4.5
x00019487	-0.329	0.024	36	0.35	0.93	0.98	1.02	-8.3
x00092378	0.115	0.026	27	0.34	0.93	0.98	1.02	-6.2
x00027301	-0.175	0.024	33	0.23	1.01	0.98	1.02	1.1
x00092525	-0.256	0.024	34	0.02	1.16	0.98	1.02	16.7
x00092177	-0.164	0.024	33	0.18	1.04	0.98	1.02	4.0
x00092189	0.227	0.026	25	0.32	0.94	0.98	1.02	-5.3
x00026824	-1.863	0.035	68	0.32	0.96	0.97	1.03	-2.7
x00087642	-1.154	0.033	53	0.23	1.02	0.98	1.02	2.4
x00069096	-1.630	0.034	63	0.45	0.87	0.97	1.03	10.7
x00087911	-1.124	0.033	52	0.30	0.97	0.98	1.02	-2.4
x00026966	-1.055	0.033	51	0.13	1.10	0.98	1.02	9.1
x00088330	-0.962	0.033	49	0.29	0.98	0.98	1.02	-2.3
x00027205	-0.783	0.033	45	0.27	0.99	0.98	1.02	-0.7
x00092531	-0.664	0.033	42	0.13	1.10	0.98	1.02	8.5
x00069097	-0.492	0.034	38	0.14	1.07	0.98	1.02	5.7
x00069359	-1.283	0.033	56	0.27	0.99	0.98	1.02	-0.5
x00069503	-0.147	0.035	31	0.19	1.02	0.97	1.03	1.6
x00069510	-0.411	0.034	37	0.28	0.98	0.98	1.02	-1.7
x00027312	-0.120	0.035	31	0.08	1.10	0.97	1.03	6.6
x00014787	-1.075	0.033	51	0.30	0.97	0.98	1.02	-2.5
x00069376	0.666	0.042	18	0.32	0.92	0.95	1.05	-3.5
x00014989	0.469	0.040	21	0.07	1.07	0.96	1.04	3.0
x00086105	-3.496	0.036	87	0.23	0.97	0.95	1.05	-1.1
x00091764	-2.402	0.027	70	0.31	0.96	0.98	1.02	-3.6
x00026946	-2.888	0.030	79	0.21	0.99	0.97	1.03	-0.5
x00027217	-1.557	0.025	52	0.30	0.97	0.99	1.01	-5.0
x00087781	-2.134	0.026	65	0.23	1.00	0.98	1.02	0.3
x00091766	-1.695	0.025	55	0.34	0.95	0.99	1.01	-7.7
x00092215	-1.512	0.025	51	0.26	0.99	0.99	1.01	-1.5
x00027259	-1.494	0.025	50	0.12	1.06	0.99	1.01	8.7
x00027310	-1.098	0.025	41	0.12	1.05	0.99	1.01	6.8
x00085989	-1.099	0.025	41	0.17	1.03	0.99	1.01	4.1
x00069460	-0.253	0.029	24	0.18	1.01	0.97	1.03	0.5
x00092106	-0.276	0.029	24	0.15	1.02	0.97	1.03	1.3
x00092096	-0.231	0.029	24	0.28	0.96	0.97	1.03	-2.5
x00027304	-1.185	0.025	43	0.09	1.07	0.99	1.01	9.4
x00092107	1.270	0.048	7	0.24	0.96	0.92	1.08	-0.9
x00094838	-0.992	0.026	39	0.08	1.07	0.98	1.02	8.1
x00086009	-0.369	0.032	69	0.31	0.93	0.98	1.02	-5.5
x00035662	0.623	0.030	48	0.25	0.99	0.98	1.02	-1.3
x00092511	0.462	0.030	51	0.28	0.96	0.98	1.02	-4.4

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00091804	-0.271	0.031	67	0.19	1.02	0.98	1.02	1.4
x00092100	0.351	0.030	54	0.32	0.92	0.98	1.02	-9.2
x00092366	0.775	0.030	44	0.21	1.02	0.98	1.02	2.2
x00092313	1.263	0.031	34	0.26	0.97	0.97	1.03	-2.1
x00014875	0.012	0.030	61	0.22	0.99	0.98	1.02	-0.8
x00070517	0.415	0.030	52	0.24	0.99	0.98	1.02	-0.7
x00027178	0.741	0.030	45	0.26	0.98	0.98	1.02	-1.8
x00087931	1.084	0.031	38	0.22	1.02	0.98	1.02	1.3
x00092301	2.022	0.036	21	0.18	1.04	0.96	1.04	2.1
x00092383	1.393	0.032	32	0.37	0.88	0.97	1.03	-8.6
x00092104	1.965	0.036	22	0.23	0.99	0.96	1.04	-0.4
x00093437	1.162	0.031	36	0.15	1.07	0.98	1.02	5.6
x00092557	2.096	0.037	20	0.06	1.13	0.96	1.04	5.7
x00027332	0.730	0.042	45	0.13	1.06	0.97	1.03	4.4
x00028044	0.084	0.042	59	0.18	1.03	0.97	1.03	2.3
x00020602	-1.012	0.050	80	0.19	0.97	0.95	1.05	-0.9
x00086314	-0.015	0.042	61	0.26	0.97	0.97	1.03	-2.3
x00095727	1.074	0.043	37	0.15	1.06	0.97	1.03	3.4
x00069513	0.716	0.042	45	0.28	0.96	0.97	1.03	-2.9
x00008142	-0.952	0.050	79	0.14	1.02	0.95	1.05	0.6
x00043943	0.252	0.042	55	0.19	1.02	0.98	1.02	1.3
x00092568	0.780	0.042	44	0.20	1.03	0.97	1.03	1.8
x00038938	1.039	0.043	38	0.18	1.03	0.97	1.03	2.0
x00040444	0.222	0.042	56	0.20	1.00	0.98	1.02	-0.3
x00046168	0.005	0.042	61	0.22	0.98	0.97	1.03	-1.5
x00020443	0.560	0.042	49	0.13	1.06	0.98	1.02	4.7
x00092098	2.453	0.058	15	0.25	0.96	0.93	1.07	-1.2
x00027261	2.337	0.056	16	0.14	1.06	0.93	1.07	1.7
x00014935	1.151	0.043	36	0.35	0.91	0.97	1.03	-5.4
x00093467	-1.016	0.027	68	0.16	1.01	0.98	1.02	0.9
x00092099	-0.315	0.025	53	0.32	0.91	0.99	1.01	15.0
x00027483	-0.405	0.025	55	0.22	0.98	0.99	1.01	-2.7
x00091822	-0.750	0.026	63	0.20	0.98	0.98	1.02	-2.0
x00092519	0.577	0.027	33	0.26	0.97	0.98	1.02	-3.0
x00088289	0.194	0.026	41	0.13	1.02	0.99	1.01	2.6
x00094733	0.095	0.026	43	0.07	1.05	0.99	1.01	7.4
x00092390	-0.022	0.026	46	0.17	1.01	0.99	1.01	1.8
x00092348	-0.041	0.026	46	0.19	1.00	0.99	1.01	-0.7
x00092237	1.232	0.031	21	0.12	1.02	0.97	1.03	0.9
x00092386	1.313	0.032	20	0.26	0.95	0.96	1.04	-3.0
x00069461	0.962	0.029	25	0.23	0.96	0.97	1.03	-2.6
x00095711	0.822	0.029	28	0.09	1.04	0.97	1.03	3.1

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00087876	1.474	0.034	17	0.10	1.02	0.96	1.04	1.0
x00068562	1.204	0.032	21	0.24	0.97	0.97	1.03	-1.9
x00092632	2.596	0.052	7	0.14	0.99	0.91	1.09	-0.3
x00093468	-1.967	0.049	84	0.15	0.99	0.94	1.06	-0.3
x00035668	-0.726	0.037	62	0.11	1.02	0.98	1.02	1.5
x00057860	-1.100	0.039	70	0.11	1.03	0.97	1.03	1.5
x00014955	-0.807	0.038	64	0.21	0.99	0.98	1.02	-0.6
x00061856	-0.797	0.038	64	0.25	0.97	0.98	1.02	-2.7
x00092577	-0.892	0.038	66	0.13	1.01	0.97	1.03	0.9
x00092191	0.192	0.037	41	0.07	1.06	0.98	1.02	5.4
x00091746	0.355	0.037	37	0.12	1.02	0.98	1.02	1.9
x00091819	0.090	0.037	43	0.20	1.00	0.98	1.02	0.0
x00092637	0.240	0.037	40	0.12	1.03	0.98	1.02	2.5
x00020426	-0.332	0.037	53	0.23	0.97	0.98	1.02	-2.9
x00095678	0.427	0.038	36	0.25	0.96	0.97	1.03	-2.9
x00008546	-0.032	0.037	46	0.16	1.00	0.98	1.02	0.3
x00003146	-0.675	0.038	61	0.24	0.98	0.98	1.02	-1.6
x00027322	0.959	0.043	25	0.28	0.95	0.96	1.04	-2.6
x00092565	1.835	0.056	13	0.18	0.98	0.92	1.08	-0.4
x00069368	0.557	0.037	63	0.24	0.97	0.98	1.02	-2.5
x00027177	1.115	0.036	50	0.28	0.98	0.98	1.02	-2.4
x00027287	2.389	0.042	24	0.30	0.96	0.96	1.04	-1.8
x00092591	1.353	0.036	45	0.25	0.99	0.98	1.02	-1.3
x00027284	2.379	0.043	24	0.27	0.98	0.96	1.04	-0.8
x00027308	1.783	0.038	35	0.25	1.00	0.97	1.03	-0.1
x00092306	1.398	0.037	44	0.28	0.97	0.98	1.02	-2.3
x00027278	1.955	0.040	32	0.27	0.99	0.97	1.03	-0.8
x00011021	1.846	0.041	35	0.34	0.96	0.97	1.03	-2.6
x00092524	2.219	0.043	27	0.40	0.91	0.96	1.04	-4.6
x00069373	2.724	0.049	19	0.27	0.97	0.94	1.06	-1.0
x00092618	2.947	0.054	16	0.06	1.10	0.93	1.07	2.8
x00092564	2.462	0.046	23	0.25	1.00	0.95	1.05	-0.1
x00027174	3.362	0.063	12	0.23	0.98	0.91	1.09	-0.4
x00092638	4.370	0.093	5	0.21	0.95	0.85	1.15	-0.6
x00069514	4.389	0.095	5	0.19	0.96	0.85	1.15	-0.5

B.O.16. Year 9 Numeracy Item Calibration Results

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00027172	-1.968	0.022	74	0.36	0.92	0.98	1.02	-7.9
x00027280	-1.810	0.021	71	0.21	1.09	0.98	1.02	8.5
x00094220	-1.402	0.020	64	0.41	0.86	0.98	1.02	17.2
x00091810	-1.164	0.020	59	0.34	0.95	0.98	1.02	-6.8
x00092626	-0.962	0.020	55	0.32	0.98	0.98	1.02	-2.7
x00026755	-0.132	0.020	39	0.25	1.03	0.98	1.02	3.8
x00093706	0.724	0.023	25	0.28	0.97	0.98	1.02	-2.6
x00094358	1.425	0.027	15	0.02	1.22	0.97	1.03	12.6
x00094393	-2.478	0.024	81	0.36	0.90	0.97	1.03	-7.3
x00035672	-1.234	0.020	61	0.25	1.07	0.98	1.02	8.0
x00092102	-0.058	0.020	38	0.39	0.83	0.98	1.02	20.5
x00092244	0.103	0.021	35	0.09	1.23	0.98	1.02	23.4
x00026759	0.413	0.022	29	0.26	0.99	0.98	1.02	-0.7
x00092532	0.915	0.024	22	0.36	0.83	0.98	1.02	14.0
x00094133	0.561	0.022	27	0.24	1.02	0.98	1.02	2.1
x00094414	1.568	0.028	14	0.38	0.80	0.97	1.03	12.4
x00091786	-2.788	0.038	85	0.27	0.96	0.95	1.05	-1.8
x00057860	-2.503	0.035	82	0.23	1.03	0.96	1.04	1.4
x00014955	-2.264	0.033	79	0.30	0.94	0.97	1.03	-3.3
x00092568	-0.453	0.028	46	0.21	1.12	0.98	1.02	10.0
x00093703	0.830	0.033	24	0.34	0.95	0.97	1.03	-2.9
x00014989	-0.720	0.028	52	0.34	0.91	0.98	1.02	-7.9
x00015131	-0.362	0.028	45	0.25	1.08	0.98	1.02	7.1
x00092578	1.932	0.043	11	0.16	1.10	0.94	1.06	3.2
x00094131	-1.157	0.029	60	0.32	0.95	0.98	1.02	-4.3
x00095113	-0.818	0.028	54	0.37	0.88	0.98	1.02	11.3
x00094404	-0.661	0.028	51	0.38	0.86	0.98	1.02	12.8
x00015035	-1.820	0.031	72	0.31	0.93	0.97	1.03	-4.6
x00008133	-1.343	0.029	64	0.34	0.91	0.98	1.02	-7.6
x00014857	-1.221	0.029	61	0.30	1.00	0.98	1.02	-0.3
x00068958	0.033	0.029	37	0.24	1.08	0.98	1.02	6.4
x00014940	-0.788	0.028	53	0.37	0.90	0.98	1.02	-9.6
x00027316	-2.305	0.027	71	0.37	0.92	0.98	1.02	-6.7
x00085989	-1.979	0.025	65	0.29	0.99	0.98	1.02	-0.7
x00093738	-2.105	0.026	67	0.27	1.00	0.98	1.02	0.5
x00027299	-2.213	0.026	69	0.40	0.90	0.98	1.02	-9.2
x00092579	-1.591	0.025	57	0.20	1.07	0.98	1.02	7.8
x00027304	-1.332	0.024	51	0.16	1.10	0.98	1.02	11.7
x00027177	0.623	0.033	16	0.29	0.96	0.96	1.04	-2.1
x00094585	-1.381	0.024	52	0.31	0.98	0.98	1.02	-2.5
x00026942	-1.919	0.025	63	0.25	1.02	0.98	1.02	2.0

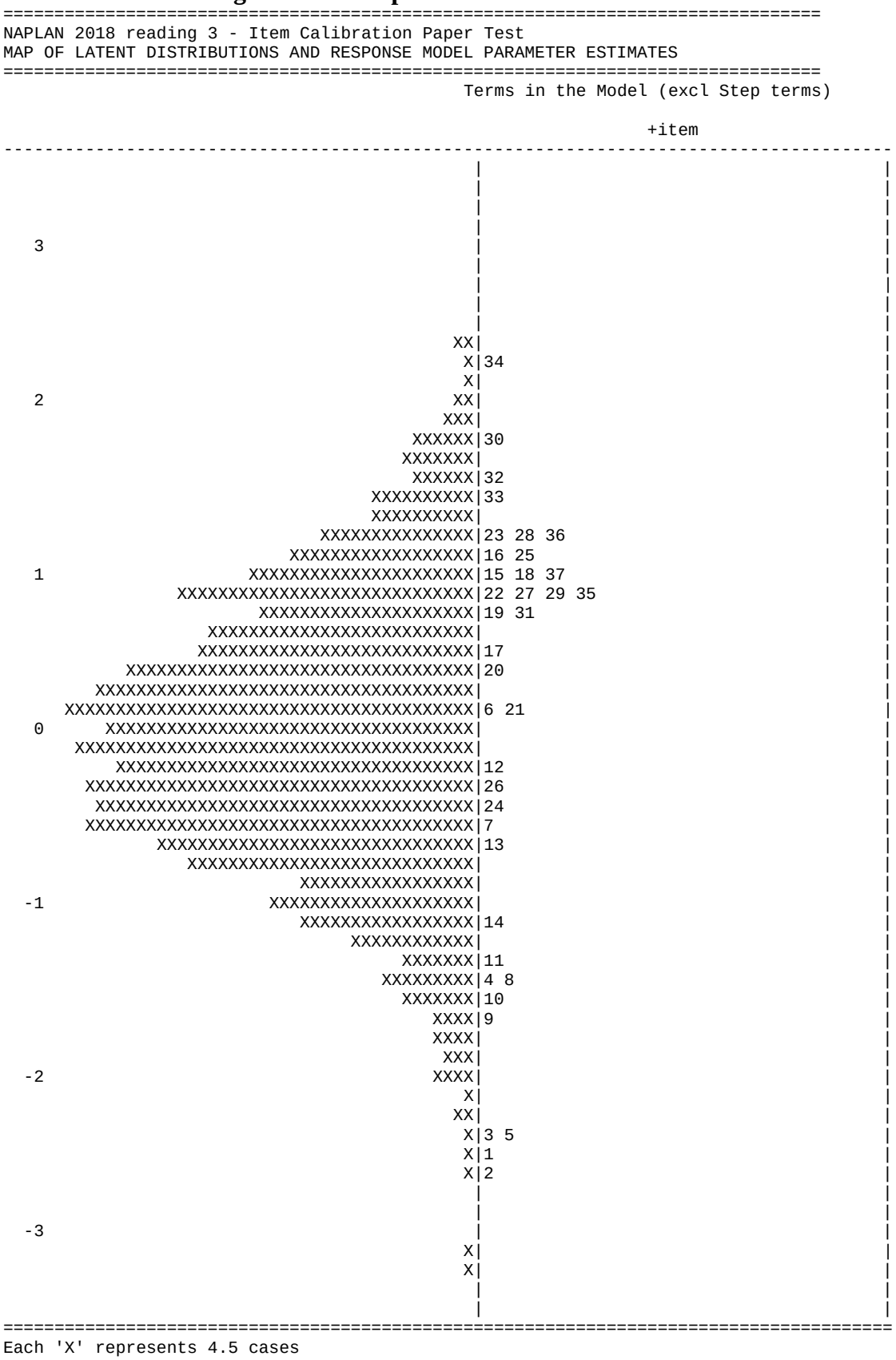
Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00027301	-0.864	0.025	41	0.30	0.97	0.98	1.02	-2.9
x00025552	-1.116	0.025	46	0.33	0.96	0.98	1.02	-5.1
x00026944	-0.518	0.026	34	0.07	1.17	0.98	1.02	15.8
x00094733	-1.640	0.025	58	0.28	1.00	0.98	1.02	0.2
x00092511	0.145	0.029	22	0.15	1.05	0.97	1.03	3.3
x00027116	0.614	0.033	16	0.31	0.94	0.96	1.04	-3.0
x00094257	0.304	0.030	20	0.06	1.13	0.97	1.03	7.3
x00093740	-2.218	0.037	69	0.25	1.02	0.97	1.03	1.1
x00035668	-1.740	0.035	60	0.17	1.08	0.97	1.03	6.3
x00092577	-1.948	0.036	64	0.20	1.05	0.97	1.03	3.5
x00094239	-1.308	0.035	51	0.15	1.11	0.98	1.02	9.3
x00027322	-1.017	0.035	44	0.42	0.89	0.98	1.02	-9.9
x00092191	-1.038	0.035	45	0.08	1.17	0.98	1.02	13.8
x00015189	-2.615	0.040	76	0.21	1.04	0.96	1.04	1.9
x00061912	-0.755	0.035	39	0.13	1.12	0.97	1.03	8.7
x00039094	-1.862	0.036	62	0.38	0.92	0.97	1.03	-5.9
x00095678	-0.061	0.039	26	0.33	0.94	0.96	1.04	-3.0
x00077846	-1.003	0.035	44	0.46	0.84	0.98	1.02	13.9
x00094971	0.036	0.040	24	0.30	0.96	0.96	1.04	-2.1
x00094407	-0.116	0.039	27	0.11	1.10	0.96	1.04	5.5
x00027026	0.997	0.052	12	0.33	0.90	0.93	1.07	-2.9
x00060431	-0.132	0.039	27	0.34	0.93	0.96	1.04	-4.0
x00094264	0.708	0.048	15	-0.07	1.17	0.94	1.06	5.4
x00087628	-3.672	0.035	85	0.22	0.98	0.95	1.05	-0.8
x00026946	-3.634	0.035	85	0.23	0.98	0.96	1.04	-0.9
x00092374	-1.882	0.025	52	0.25	1.00	0.99	1.01	-0.3
x00092096	-1.381	0.026	41	0.36	0.94	0.98	1.02	-7.8
x00094838	-1.733	0.026	49	0.29	0.98	0.99	1.01	-2.6
x00027251	-1.818	0.026	50	0.24	1.01	0.99	1.01	0.7
x00094451	-1.811	0.026	50	0.20	1.03	0.99	1.01	3.7
x00094753	-0.905	0.028	31	0.38	0.93	0.98	1.02	-6.6
x00092177	-0.970	0.027	32	0.12	1.06	0.98	1.02	5.0
x00027000	-0.676	0.029	26	0.08	1.07	0.97	1.03	4.7
x00092559	-1.533	0.026	44	0.20	1.03	0.99	1.01	3.3
x00094750	-0.659	0.029	26	0.21	1.00	0.97	1.03	0.1
x00092390	-0.790	0.019	45	0.29	1.06	0.99	1.01	7.8
x00095028	-1.454	0.026	42	0.10	1.08	0.98	1.02	10.3
x00093710	-1.928	0.026	53	0.16	1.05	0.99	1.01	6.3
x00093734	-0.349	0.031	21	0.16	1.02	0.97	1.03	1.0
x00068756	0.064	0.030	55	0.40	0.91	0.98	1.02	-9.0
x00094925	0.018	0.030	56	0.28	1.00	0.98	1.02	-0.4
x00092591	0.000	0.030	56	0.26	1.01	0.98	1.02	1.3

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00094362	1.255	0.033	30	0.18	1.05	0.97	1.03	3.1
x00026855	0.652	0.030	42	0.35	0.95	0.98	1.02	-4.9
x00026995	0.090	0.030	54	0.28	1.00	0.98	1.02	0.4
x00027308	0.529	0.030	45	0.21	1.06	0.98	1.02	5.7
x00094147	0.668	0.031	42	0.35	0.94	0.98	1.02	-5.7
x00092524	0.321	0.030	49	0.36	0.94	0.98	1.02	-6.4
x00094840	2.036	0.039	18	0.17	1.03	0.95	1.05	1.4
x00094280	1.416	0.034	27	0.35	0.93	0.97	1.03	-4.4
x00094556	1.402	0.034	27	0.16	1.09	0.97	1.03	5.4
x00094282	2.882	0.051	9	0.05	1.11	0.93	1.07	2.9
x00027179	2.028	0.039	18	0.16	1.09	0.95	1.05	3.7
x00094595	1.570	0.035	25	0.42	0.87	0.96	1.04	-7.5
x00027080	2.234	0.041	15	0.23	1.03	0.95	1.05	1.0
x00020745	-0.813	0.047	73	0.20	1.03	0.96	1.04	1.2
x00027013	0.427	0.043	47	0.21	1.04	0.97	1.03	2.8
x00092572	0.291	0.043	50	0.31	0.96	0.97	1.03	-2.8
x00092356	0.698	0.043	41	0.22	1.04	0.97	1.03	2.7
x00094278	0.821	0.044	39	0.24	1.04	0.97	1.03	2.2
x00026980	1.765	0.051	22	-0.02	1.21	0.94	1.06	7.0
x00026853	1.193	0.046	32	0.04	1.19	0.96	1.04	9.1
x00057858	0.306	0.043	50	0.13	1.11	0.97	1.03	7.5
x00060689	0.516	0.043	45	0.36	0.94	0.97	1.03	-4.5
x00003380	0.595	0.043	44	0.22	1.02	0.97	1.03	1.1
x00060566	0.675	0.043	42	0.21	1.04	0.97	1.03	2.4
x00092558	2.380	0.061	14	0.14	1.06	0.92	1.08	1.5
x00051847	0.225	0.043	52	0.36	0.92	0.97	1.03	-6.2
x00060710	1.039	0.045	35	0.42	0.89	0.96	1.04	-6.4
x00094421	2.322	0.060	15	0.32	0.91	0.92	1.08	-2.3
x00039059	0.823	0.044	39	0.38	0.91	0.97	1.03	-5.8
x00092519	-0.019	0.025	44	0.25	1.00	0.99	1.01	0.0
x00027003	-0.109	0.025	46	0.11	1.07	0.99	1.01	9.4
x00094350	-0.263	0.025	50	0.24	0.98	0.99	1.01	-2.2
x00026949	-0.071	0.026	45	0.18	1.03	0.99	1.01	4.5
x00092237	0.537	0.027	32	0.14	1.04	0.98	1.02	3.7
x00068751	0.424	0.027	34	0.08	1.08	0.98	1.02	8.0
x00092100	0.696	0.028	29	0.30	0.94	0.98	1.02	-4.6
x00092529	0.603	0.028	31	0.24	0.98	0.98	1.02	-1.6
x00092383	1.009	0.031	23	0.21	0.98	0.97	1.03	-1.5
x00093733	0.122	0.026	41	0.24	1.01	0.98	1.02	1.1
x00094454	0.242	0.027	38	0.21	1.01	0.98	1.02	1.2
x00092104	1.522	0.036	16	0.21	0.97	0.96	1.04	-1.1
x00092564	1.597	0.037	15	0.15	1.02	0.95	1.05	1.0

Item Label	Delta (Centred)	Error	Facility	Discrimination (Item-Rest Corr.)	Weighted			
					MNSQ	CI_L	CI_H	T
x00094295	2.113	0.045	10	0.06	1.05	0.93	1.07	1.3
x00092301	1.754	0.040	13	0.10	1.04	0.95	1.05	1.4
x00027312	-0.425	0.036	53	0.21	1.02	0.98	1.02	2.4
x00027022	-0.414	0.036	53	0.28	0.98	0.98	1.02	-2.0
x00040531	-1.641	0.042	78	0.23	1.00	0.96	1.04	-0.1
x00046468	-1.481	0.041	75	0.24	0.99	0.96	1.04	-0.5
x00058018	-0.963	0.037	65	0.25	1.01	0.97	1.03	1.0
x00039004	-0.701	0.037	60	0.22	1.00	0.98	1.02	0.3
x00093730	-0.203	0.036	48	0.24	1.01	0.98	1.02	1.0
x00092637	-0.114	0.036	46	0.23	1.01	0.98	1.02	1.1
x00094191	1.133	0.044	22	0.33	0.92	0.95	1.05	-3.5
x00003146	-1.963	0.047	83	0.26	0.99	0.94	1.06	-0.3
x00092565	1.324	0.047	19	0.22	1.01	0.95	1.05	0.3
x00038938	0.216	0.038	39	0.24	1.01	0.97	1.03	0.4
x00002576	0.621	0.040	31	0.18	1.04	0.97	1.03	2.1
x00043943	0.091	0.038	42	0.22	1.03	0.98	1.02	2.6
x00006890	1.416	0.049	18	0.24	0.96	0.94	1.06	-1.3
x00026753	-0.638	0.039	58	0.32	0.99	0.98	1.02	-0.9
x00092632	0.821	0.051	61	0.22	0.97	0.97	1.03	-1.7
x00094728	1.768	0.051	40	0.31	0.96	0.97	1.03	-2.5
x00094291	2.668	0.059	23	0.22	1.01	0.94	1.06	0.2
x00094313	0.893	0.050	60	0.33	0.93	0.97	1.03	-5.3
x00094732	2.229	0.055	31	0.32	0.97	0.95	1.05	-1.2
x00094301	1.845	0.052	39	0.38	0.91	0.96	1.04	-5.1
x00027086	2.461	0.057	26	0.34	0.93	0.94	1.06	-2.3
x00094743	2.171	0.054	32	0.35	0.95	0.95	1.05	-2.3
x00026947	2.720	0.063	22	0.34	0.95	0.93	1.07	-1.5
x00094245	2.810	0.064	21	0.27	0.97	0.93	1.07	-0.9
x00027090	3.314	0.074	14	0.25	0.98	0.90	1.10	-0.4
x00092311	0.465	0.057	69	0.24	0.98	0.96	1.04	-0.7
x00027079	4.299	0.118	6	0.28	0.97	0.81	1.19	-0.3
x00068319	3.226	0.081	16	0.28	0.98	0.90	1.10	-0.3
x00094856	4.510	0.130	5	0.18	1.00	0.78	1.22	0.1
x00075994	3.097	0.078	17	0.35	0.94	0.90	1.10	-1.2

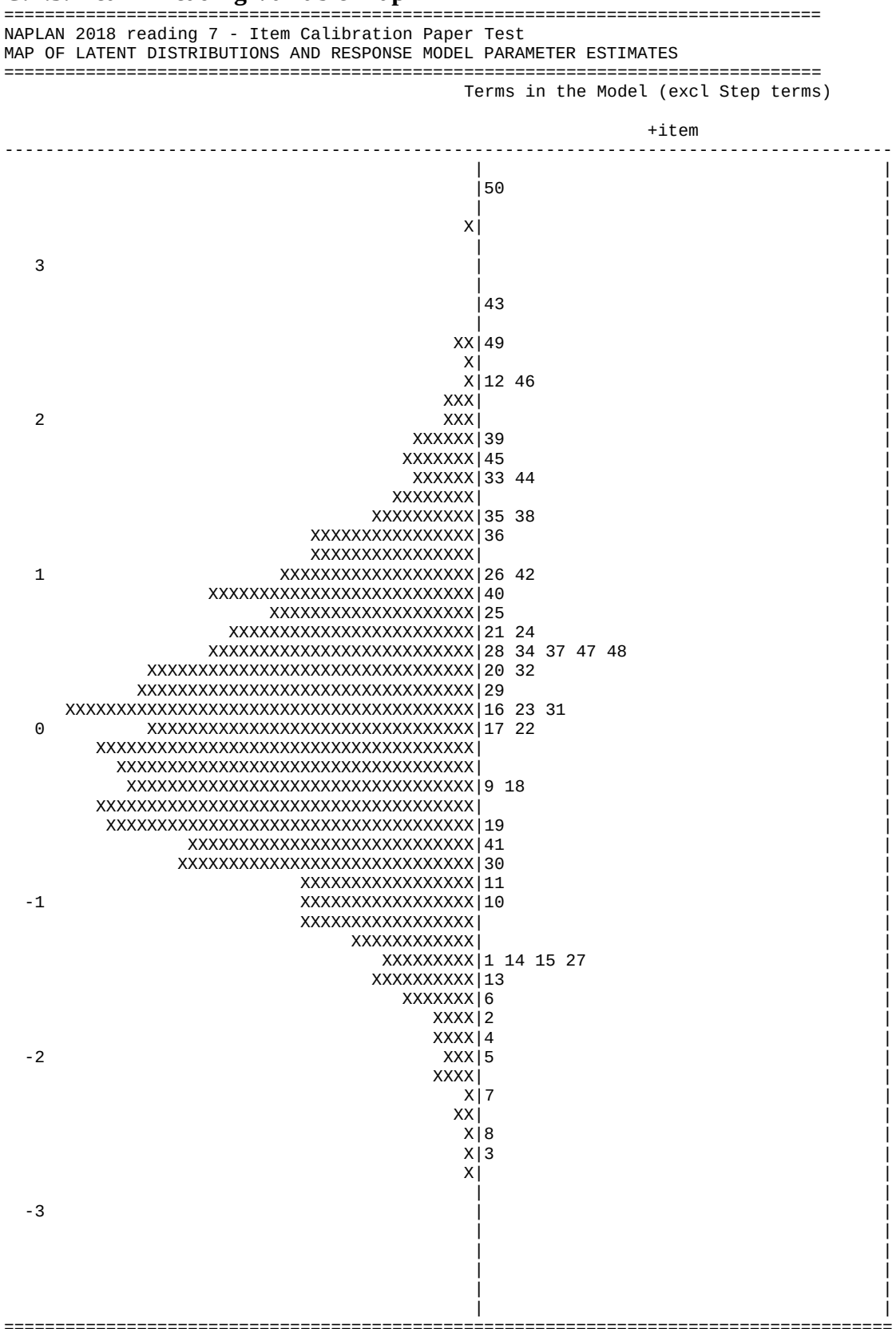
APPENDIX C.P. VARIABLE MAPS (PAPER TEST)

C.P.1. Year 3 Reading Variable Map



C.P.2. Year 5 Reading Variable Map

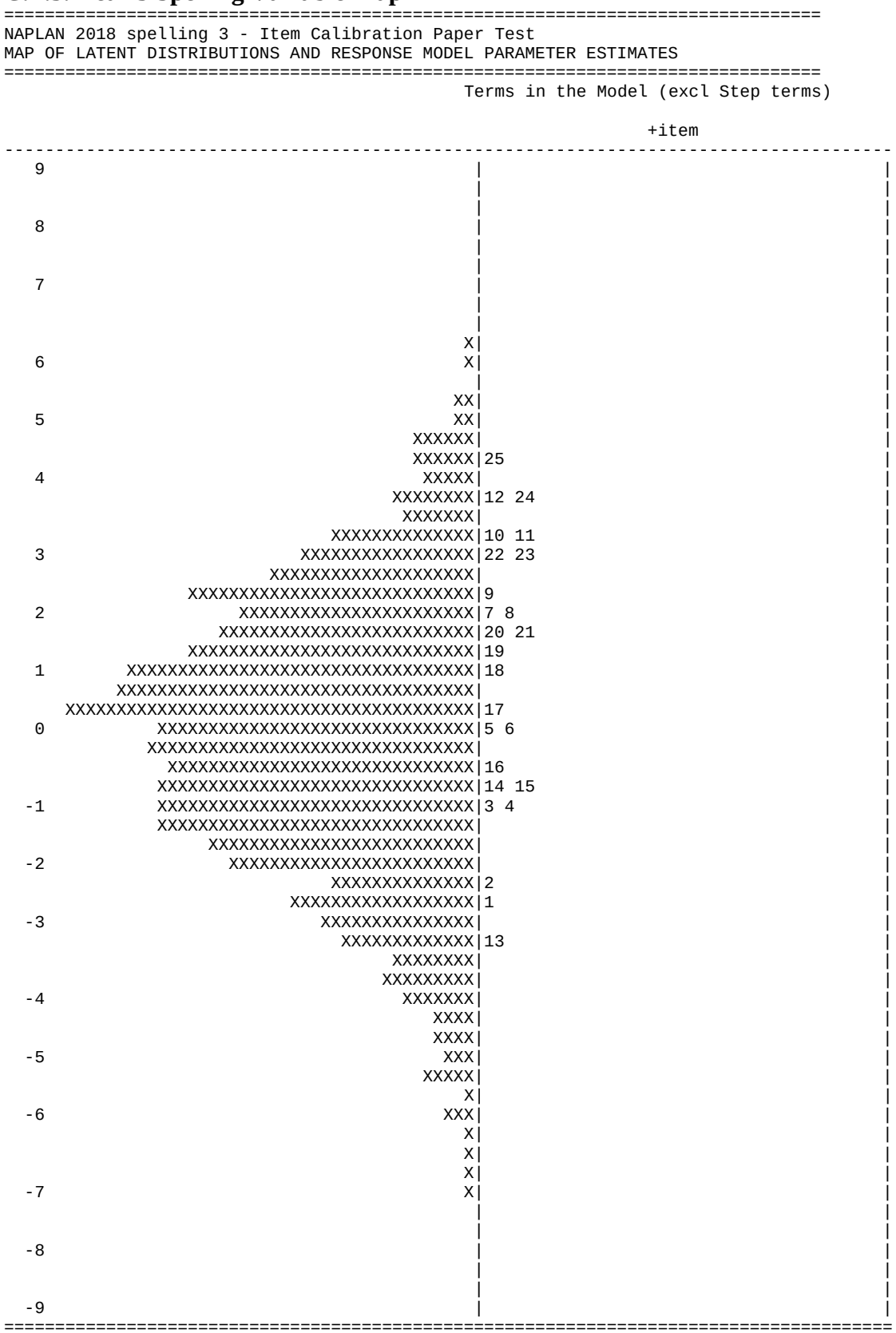
C.P.3. Year 7 Reading Variable Map



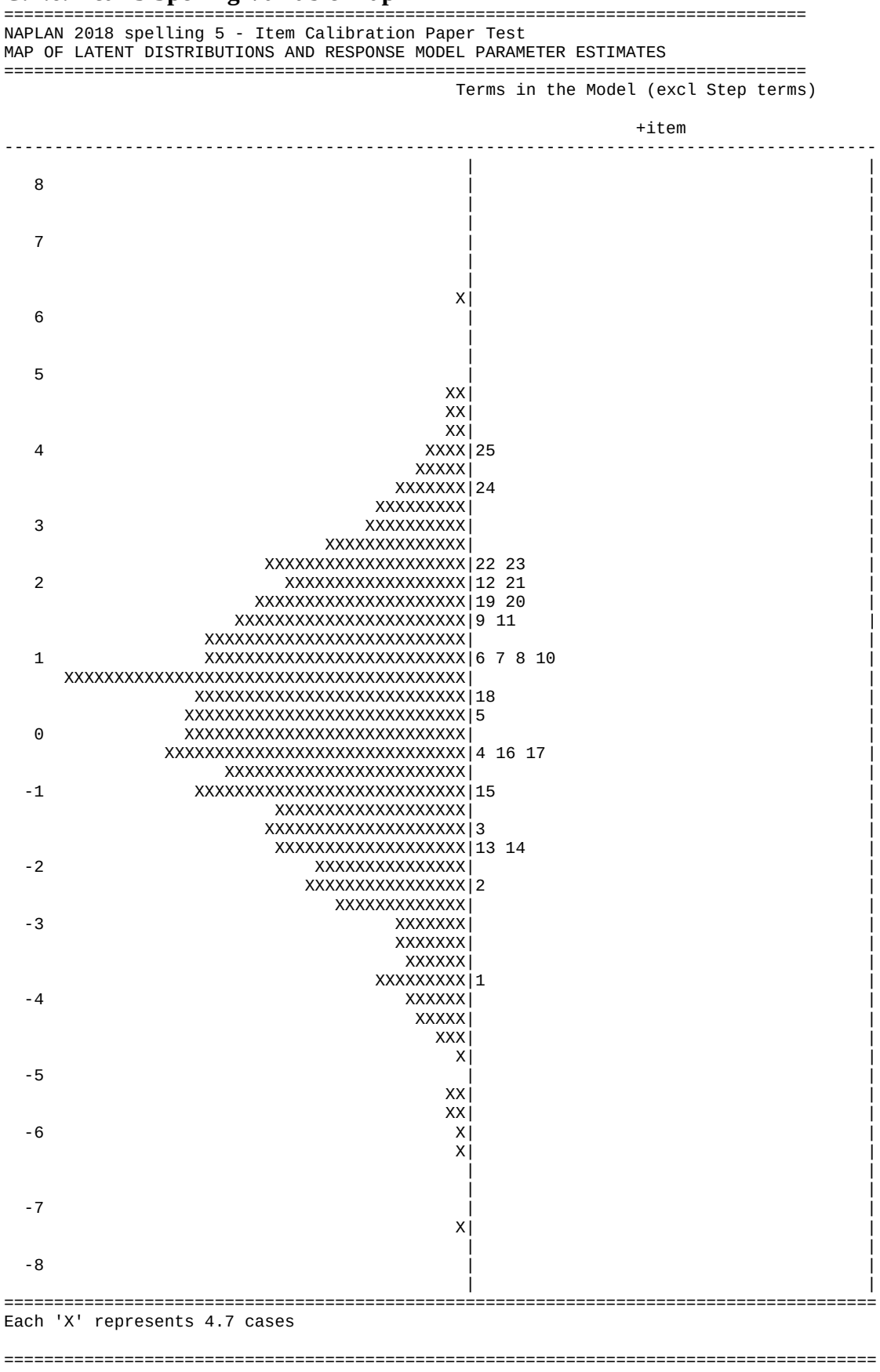
C.P.4. Year 9 Reading Variable Map

```
================================================================================
NAPLAN 2018 reading 9 - Item Calibration Paper Test
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                        Terms in the Model (excl Step terms)

                                                                    +item
--------------------------------------------------------------------------------
                                          |50                                   |
                                          |                                     |
                                          |                                     |
                                          |                                     |
                                          |                                     |
   3                                      |                                     |
                                          |37                                   |
                                        X |42                                   |
                                          |                                     |
                                          |                                     |
                                          |                                     |
                                        X |48                                   |
                                       XX |                                     |
   2                                  XXXX |                                     |
                                       XXX |                                     |
                                    XXXXXX |4                                    |
                                     XXXXX |                                     |
                                 XXXXXXXXX |                                     |
                               XXXXXXXXXXX |                                     |
                            XXXXXXXXXXXXXX |16 38 49                             |
                         XXXXXXXXXXXXXXXXX |6 31                                 |
   1                  XXXXXXXXXXXXXXXXXXXX |43 47                                |
                        XXXXXXXXXXXXXXXXXX |                                     |
                      XXXXXXXXXXXXXXXXXXXX |                                     |
                    XXXXXXXXXXXXXXXXXXXXX |22 41                                |
                 XXXXXXXXXXXXXXXXXXXXXXXX |20                                   |
                XXXXXXXXXXXXXXXXXXXXXXXXX |39 46                                |
     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |12 26                                 |
              XXXXXXXXXXXXXXXXXXXXXXXXXXX |30 32 44                             |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXX |35                                   |
   0       XXXXXXXXXXXXXXXXXXXXXXXXXXXXX |27 36                                |
         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |14 24                                |
               XXXXXXXXXXXXXXXXXXXXXXXXX |45                                   |
            XXXXXXXXXXXXXXXXXXXXXXXXXXX |18 29                                |
                  XXXXXXXXXXXXXXXXXXXXXX |23                                   |
                XXXXXXXXXXXXXXXXXXXXXXXX |15                                   |
             XXXXXXXXXXXXXXXXXXXXXXXXXX |9 19                                 |
                      XXXXXXXXXXXXXXXXXX |17 28 33                             |
  -1                XXXXXXXXXXXXXXXXXXXX |21 34                                |
                         XXXXXXXXXXXXXXX |10                                   |
                               XXXXXXXXX |40                                   |
                               XXXXXXXXX |7                                    |
                                 XXXXXXX |                                     |
                               XXXXXXXXX |                                     |
                                   XXXXX |                                     |
                                     XXX |25                                   |
  -2                                  XX |                                     |
                                       X |                                     |
                                         |2 5 11 13                            |
                                       X |                                     |
                                       X |                                     |
                                       X |                                     |
                                       X |8                                    |
                                         |                                     |
  -3                                     |                                     |
                                         |                                     |
                                       X |                                     |
                                         |                                     |
                                         |1                                    |
                                         |3                                    |
================================================================================
Each 'X' represents 4.9 cases

================================================================================
```

C.P.5. Year 3 Spelling Variable Map



C.P.6. Year 5 Spelling Variable Map



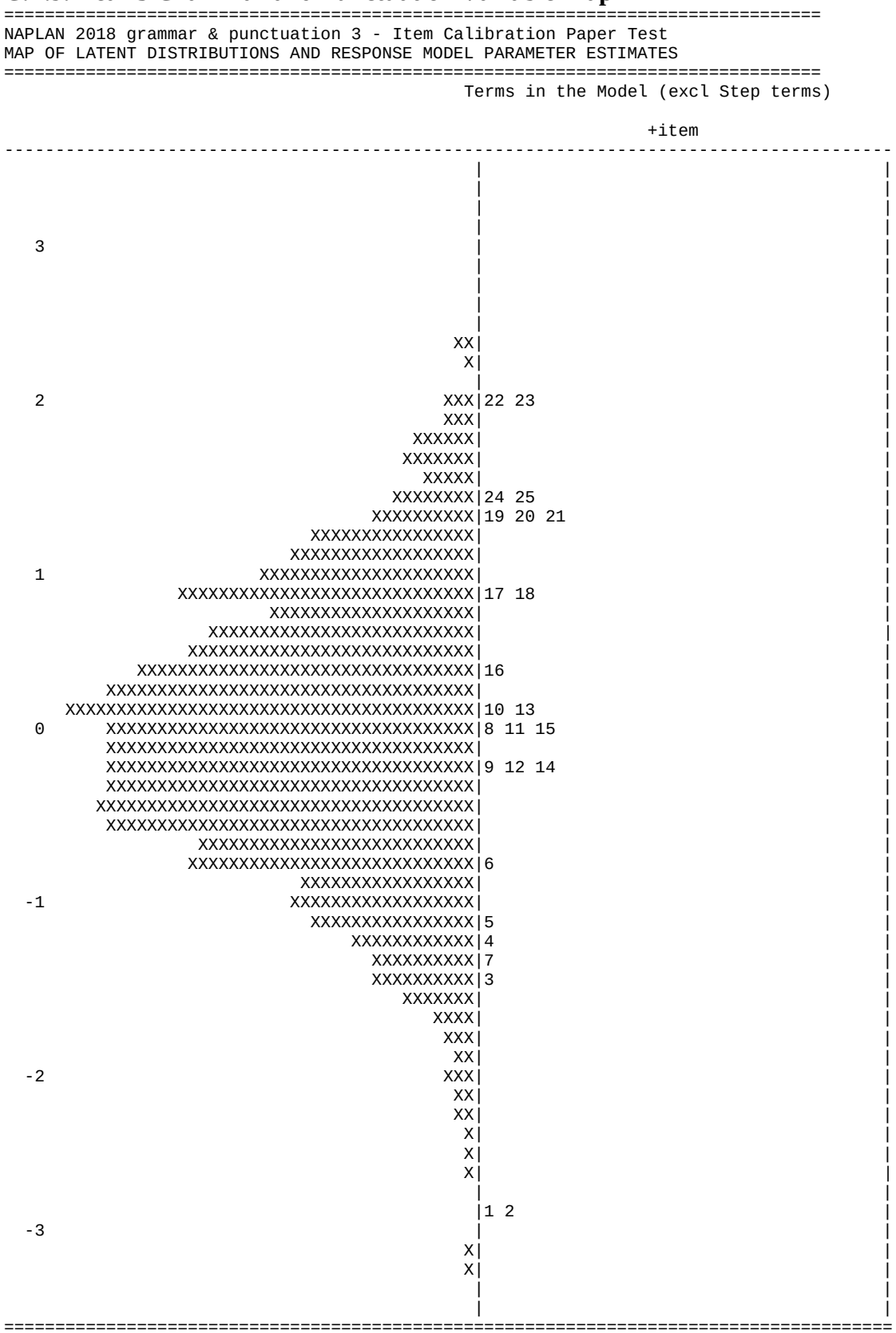
C.P.7. Year 7 Spelling Variable Map

```
================================================================================
NAPLAN 2018 spelling 7 - Item Calibration Paper Test
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                        Terms in the Model (excl Step terms)

                                                              +item
--------------------------------------------------------------------------------
                                          |                                     |
                                          |                                     |
   7                                      |                                     |
                                          |                                     |
                                          |                                     |
                                          |                                     |
   6                                      |                                     |
                                          |                                     |
                                        X |                                     |
                                          |                                     |
   5                                   XX |                                     |
                                         X|                                     |
                                         X|                                     |
                                         X|                                     |
   4                                  XXXX|                                     |
                                     XXXXX|25                                   |
                                   XXXXXXX|                                     |
                                    XXXXXX|24                                   |
   3                              XXXXXXXXX|                                     |
                                 XXXXXXXXXX|                                     |
                           XXXXXXXXXXXXXXXXX|22                                   |
                           XXXXXXXXXXXXXXXXX|12                                   |
   2                  XXXXXXXXXXXXXXXXXXXXX|23                                   |
                 XXXXXXXXXXXXXXXXXXXXXXXXX|                                     |
               XXXXXXXXXXXXXXXXXXXXXXXXXXX|10 21                                |
                 XXXXXXXXXXXXXXXXXXXXXXXXX|9 20                                 |
   1             XXXXXXXXXXXXXXXXXXXXXXXXX|18 19                                |
           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|11                                     |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|6 8                                   |
   0  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|5 17                                 |
        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|4                                    |
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|7                                    |
           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|16                                   |
  -1          XXXXXXXXXXXXXXXXXXXXXXXXXXXX|3 15                                  |
              XXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                     |
                XXXXXXXXXXXXXXXXXXXXXXXXXX|                                     |
                       XXXXXXXXXXXXXXXXXXX|                                     |
  -2                        XXXXXXXXXXXXXX|2                                    |
                             XXXXXXXXXXXXX|                                     |
                               XXXXXXXXXXX|                                     |
                                XXXXXXXXXX|1 13                                  |
  -3                            XXXXXXXXXX|14                                   |
                                  XXXXXXXX|                                     |
                                     XXXXX|                                     |
                                     XXXXX|                                     |
  -4                                    XX|                                     |
                                      XXXX|                                     |
                                        X |                                     |
                                       XX |                                     |
  -5                                    X|                                     |
                                         X|                                     |
                                         X|                                     |
                                          |                                     |
  -6                                      |                                     |
                                          |                                     |
                                          |                                     |
                                          |                                     |
  -7                                      |                                     |
                                          |                                     |
                                          |                                     |
================================================================================
Each 'X' represents 6.0 cases

================================================================================
```

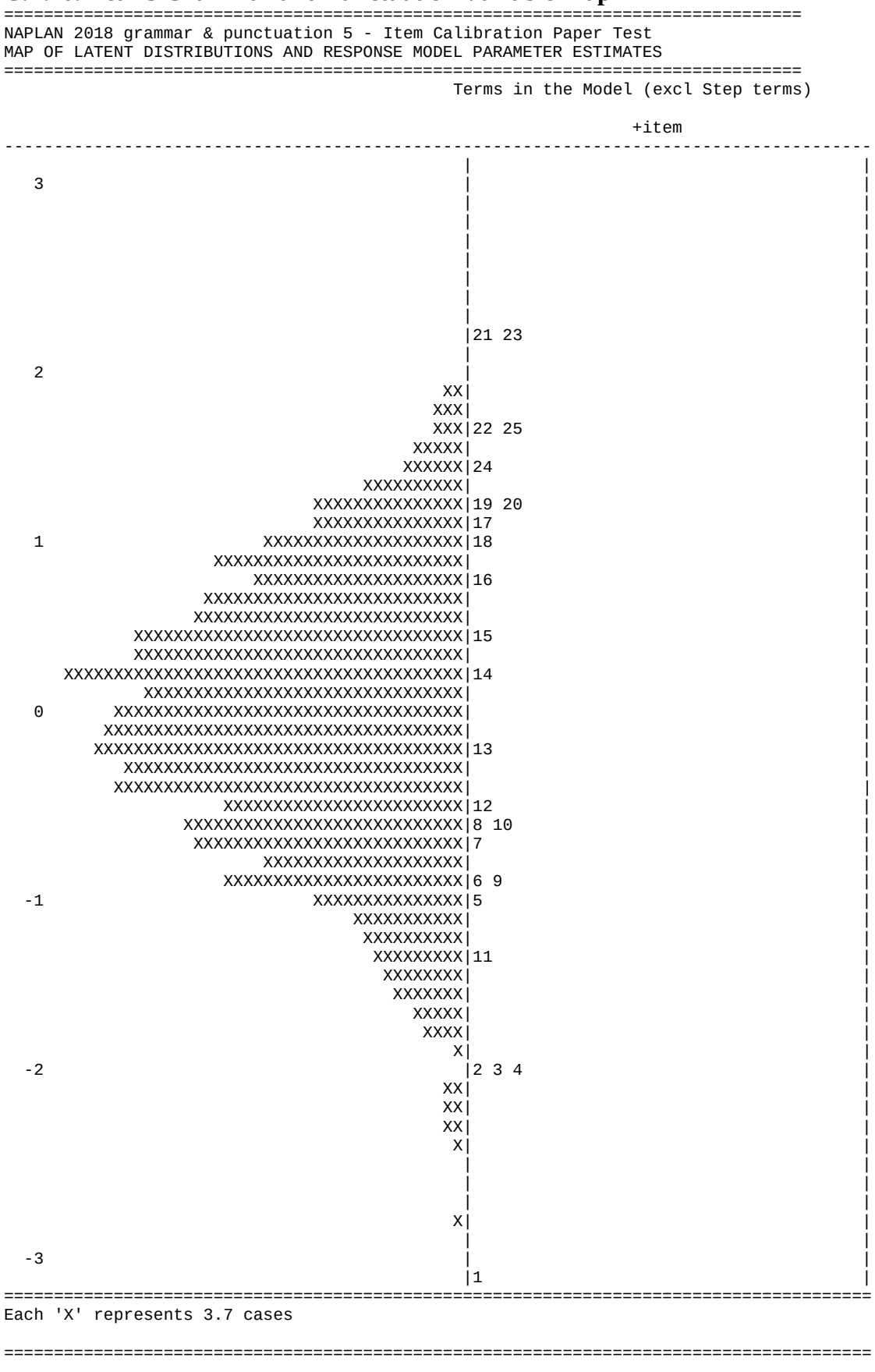
C.P.8. Year 9 Spelling Variable Map

```
================================================================================
NAPLAN 2018 spelling 9 - Item Calibration Paper Test
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                            Terms in the Model (excl Step terms)

                                                                +item
--------------------------------------------------------------------------------
   7                                          |                                      |
                                              |                                      |
                                              |                                      |
                                              |                                      |
   6                                          |                                      |
                                              |                                      |
                                              |                                      |
                                              |                                      |
   5                                         X|                                      |
                                             X|                                      |
                                              |25                                    |
                                             X|                                      |
                                            XXX|                                      |
   4                                         XX|                                      |
                                           XXXX|22                                    |
                                         XXXXXX|                                      |
                                          XXXXX|                                      |
   3                                    XXXXXXXX|                                      |
                                       XXXXXXXXX|                                      |
                                      XXXXXXXXXX|                                      |
                                XXXXXXXXXXXXXXX|23 24                                 |
   2                        XXXXXXXXXXXXXXXXXXX|21                                    |
                            XXXXXXXXXXXXXXXXXXX|10 11                                 |
                       XXXXXXXXXXXXXXXXXXXXXXX|12                                    |
                    XXXXXXXXXXXXXXXXXXXXXXXXXX|20                                    |
   1                XXXXXXXXXXXXXXXXXXXXXXXXXX|9 19                                  |
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                      |
         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|8                                     |
               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|18                                    |
   0  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|6 7                                   |
       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|17                                    |
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|16                                    |
                   XXXXXXXXXXXXXXXXXXXXXXXXXX|4                                     |
                  XXXXXXXXXXXXXXXXXXXXXXXXXXX|5 15                                  |
  -1                  XXXXXXXXXXXXXXXXXXXXXXX|                                      |
                          XXXXXXXXXXXXXXXXXXX|14                                    |
                        XXXXXXXXXXXXXXXXXXXXX|3                                     |
                            XXXXXXXXXXXXXXXXX|                                      |
  -2                           XXXXXXXXXXXXXX|13                                    |
                                   XXXXXXXXXX|                                      |
                               XXXXXXXXXXXXXX|                                      |
                                    XXXXXXXXX|2                                     |
  -3                                  XXXXXXX|                                      |
                                    XXXXXXXXX|1                                     |
                                      XXXXXXX|                                      |
                                        XXXXX|                                      |
  -4                                       XX|                                      |
                                        XXXXX|                                      |
                                          XXX|                                      |
                                            X|                                      |
                                            X|                                      |
  -5                                         |                                      |
                                             |                                      |
                                           XX|                                      |
                                            X|                                      |
  -6                                         |                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
  -7                                         |                                      |
================================================================================
Each 'X' represents 5.3 cases

================================================================================
```

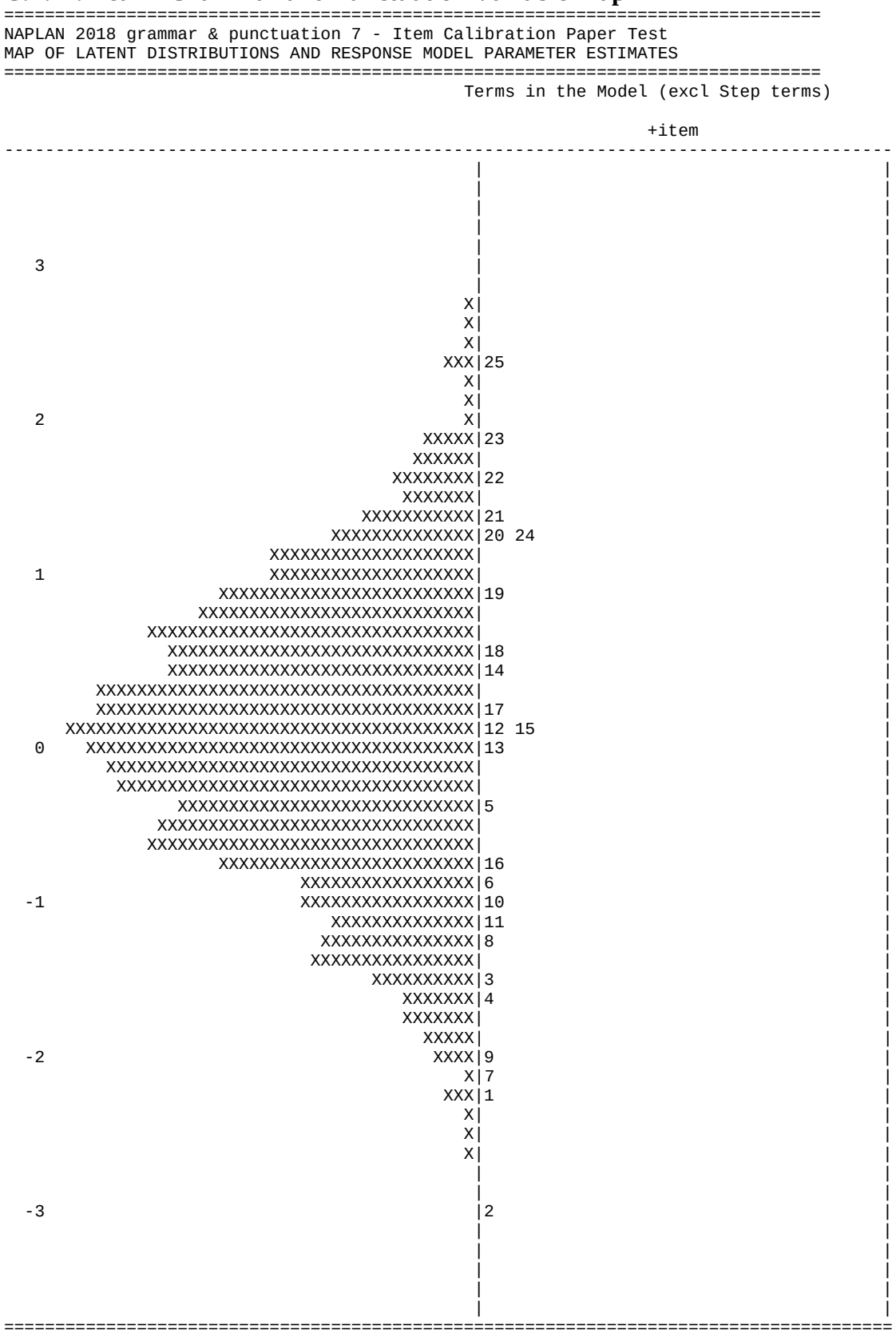
C.P.9. Year 3 Grammar and Punctuation Variable Map



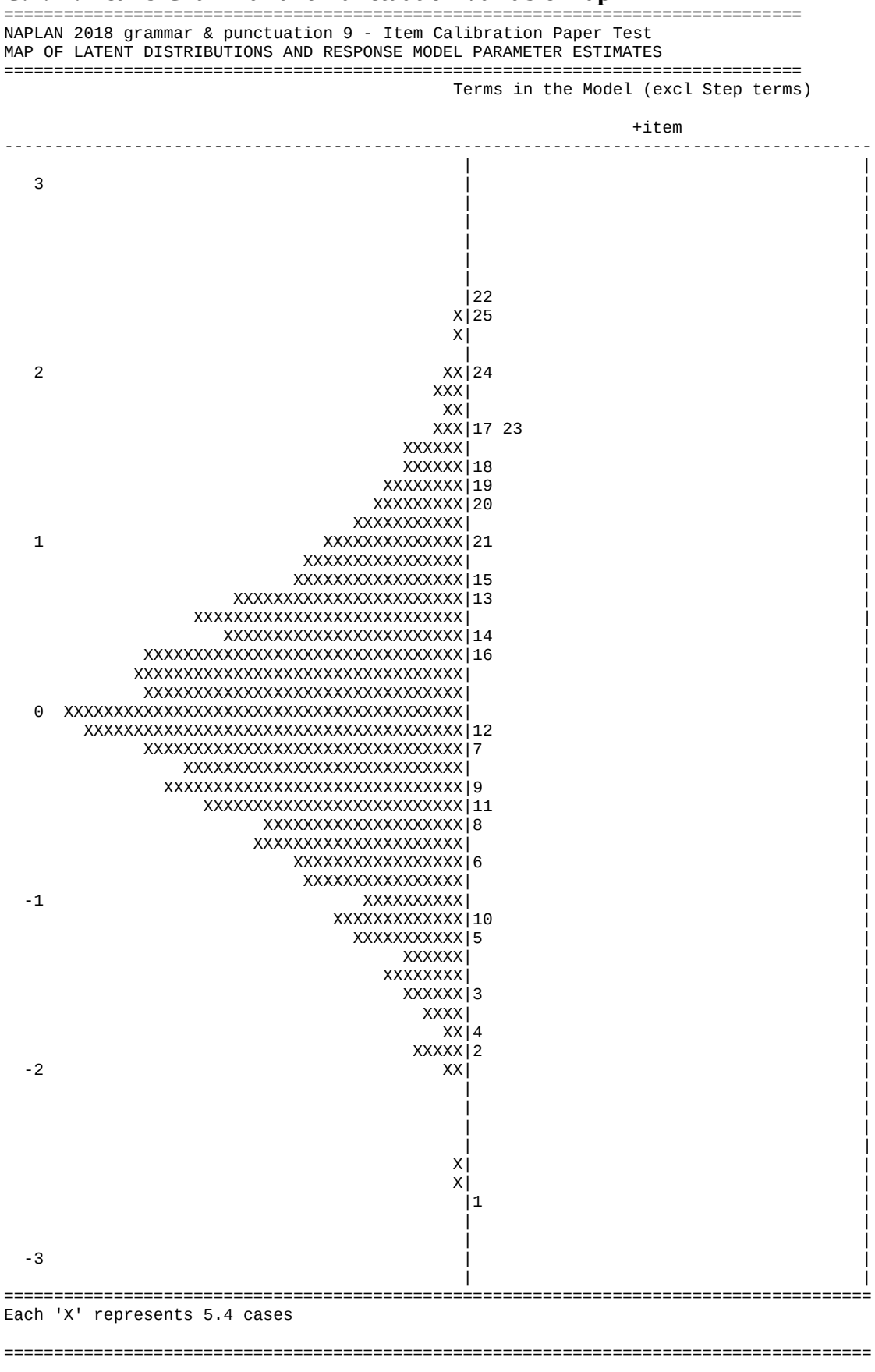
C.P.10. Year 5 Grammar and Punctuation Variable Map



C.P.11. Year 7 Grammar and Punctuation Variable Map



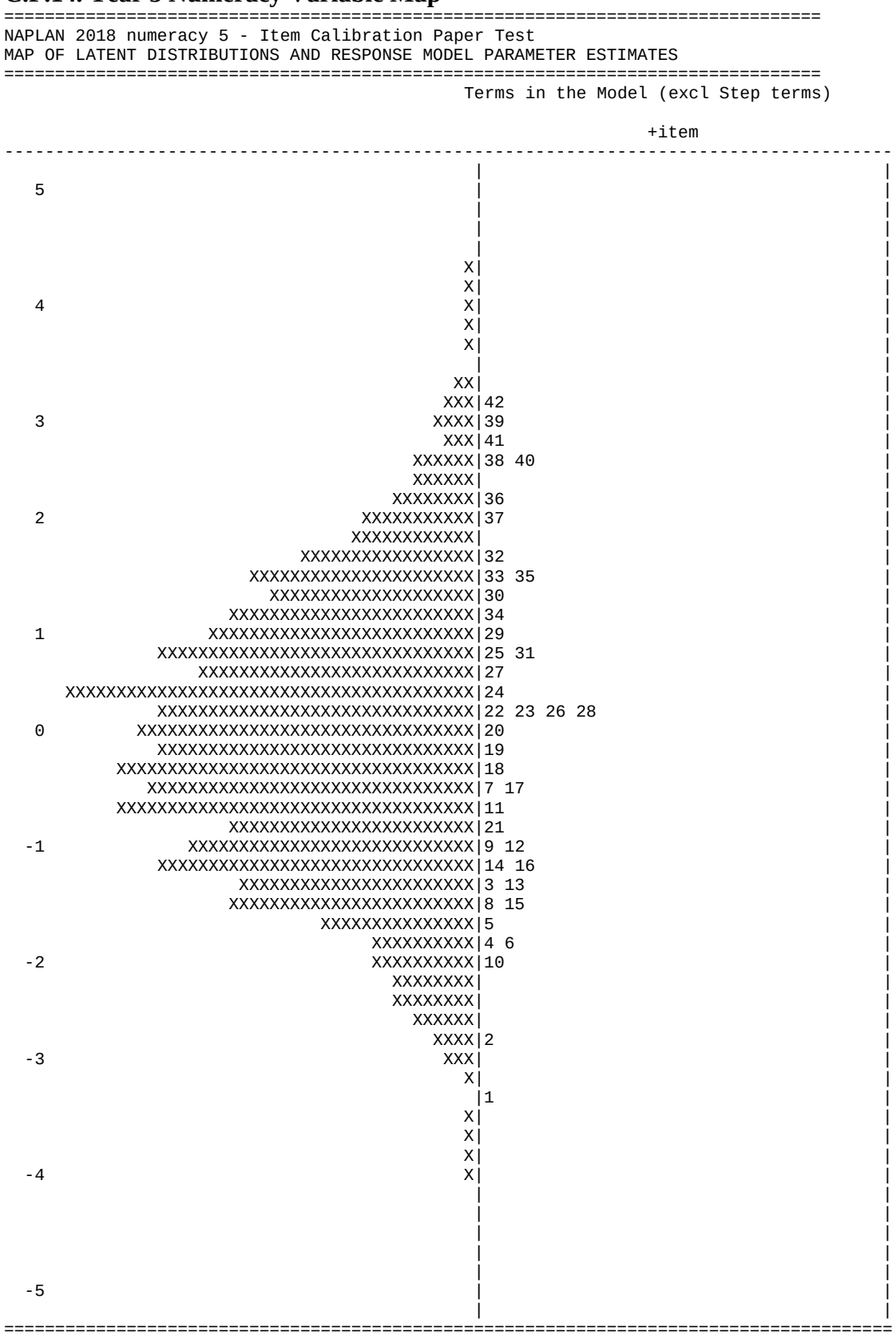
C.P.12. Year 9 Grammar and Punctuation Variable Map



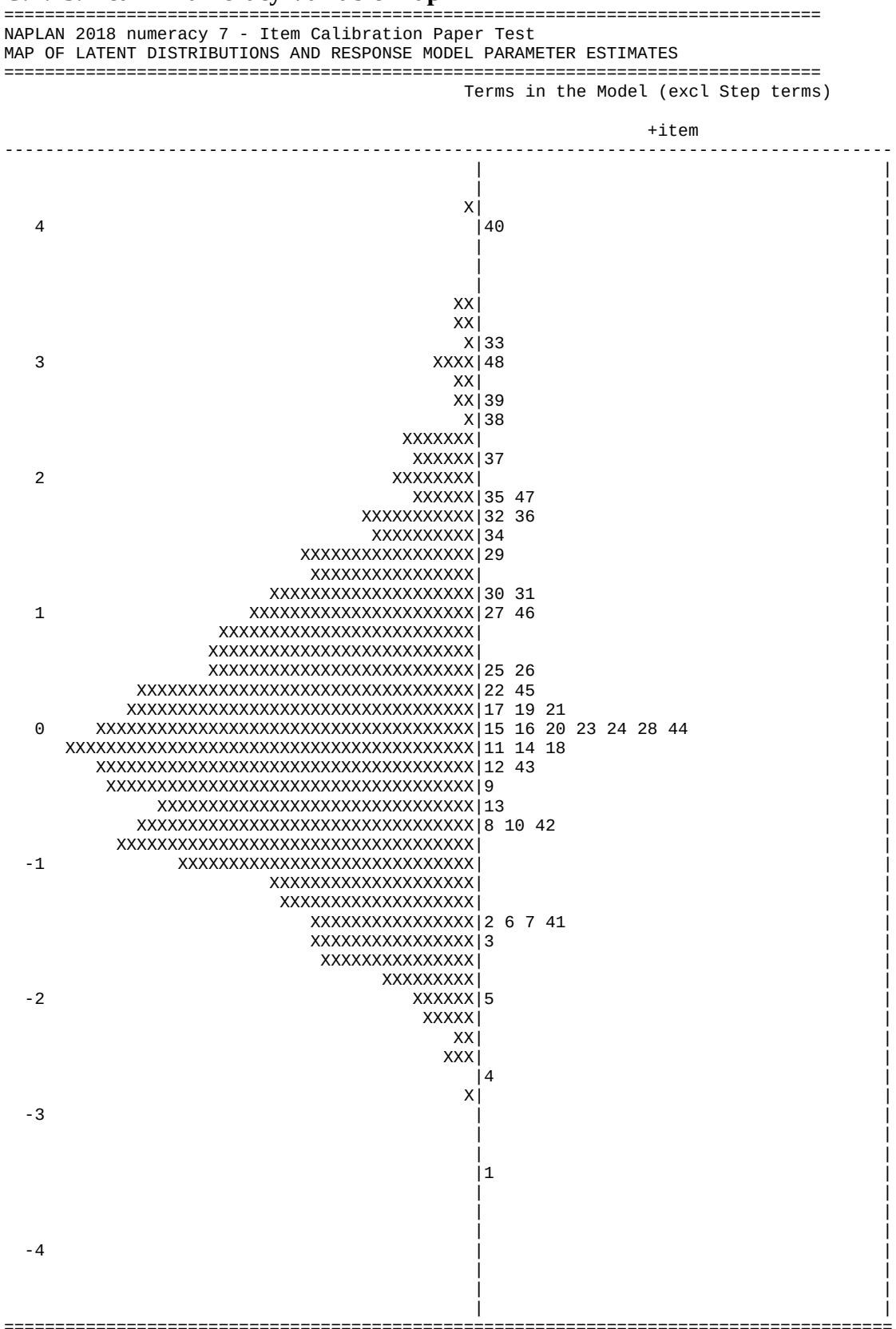
C.P.13. Year 3 Numeracy Variable Map

```
================================================================================
NAPLAN 2018 numeracy 3 - Item Calibration Paper Test
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                            Terms in the Model (excl Step terms)

                                                                +item
--------------------------------------------------------------------------------
                                             |                                      |
   5                                         |                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
   4                                         |                                      |
                                           X|                                      |
                                           X|                                      |
                                           X|                                      |
                                             |                                      |
                                         XXX|                                      |
   3                                     XXX|                                      |
                                      XXXXXX|36                                    |
                                      XXXXXX|35                                    |
                                       XXXXX|33                                    |
                                   XXXXXXXXX|                                      |
   2                                XXXXXXXX|                                      |
                             XXXXXXXXXXXXXXX|34                                    |
                            XXXXXXXXXXXXXXXX|30                                    |
                         XXXXXXXXXXXXXXXXXXX|32                                    |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXX|                                      |
                        XXXXXXXXXXXXXXXXXXXX|                                      |
   1               XXXXXXXXXXXXXXXXXXXXXXXXX|18 20 27                              |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXX|26 28 31                              |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|25                                    |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|22 23                                 |
      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                      |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXX|17 21 24                              |
   0          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                      |
               XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|29                                    |
           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|7 16 19                               |
         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|9 14                                  |
         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                      |
  -1              XXXXXXXXXXXXXXXXXXXXXXXXXX|13 15                                 |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXX|6 11                                  |
                           XXXXXXXXXXXXXXXXX|8 12                                  |
                          XXXXXXXXXXXXXXXXXX|                                      |
                          XXXXXXXXXXXXXXXXXX|10                                    |
                              XXXXXXXXXXXXXX|3                                     |
  -2                              XXXXXXXXXX|                                      |
                                   XXXXXXXXX|2                                     |
                                     XXXXXXX|                                      |
                                        XXXX|                                      |
                                         XXX|4 5                                   |
  -3                                     XXX|                                      |
                                         XXX|                                      |
                                           X|                                      |
                                           X|1                                     |
                                           X|                                      |
                                             |                                      |
  -4                                       X|                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
                                             |                                      |
  -5                                         |                                      |
                                             |                                      |
================================================================================
Each 'X' represents 4.8 cases

================================================================================
```

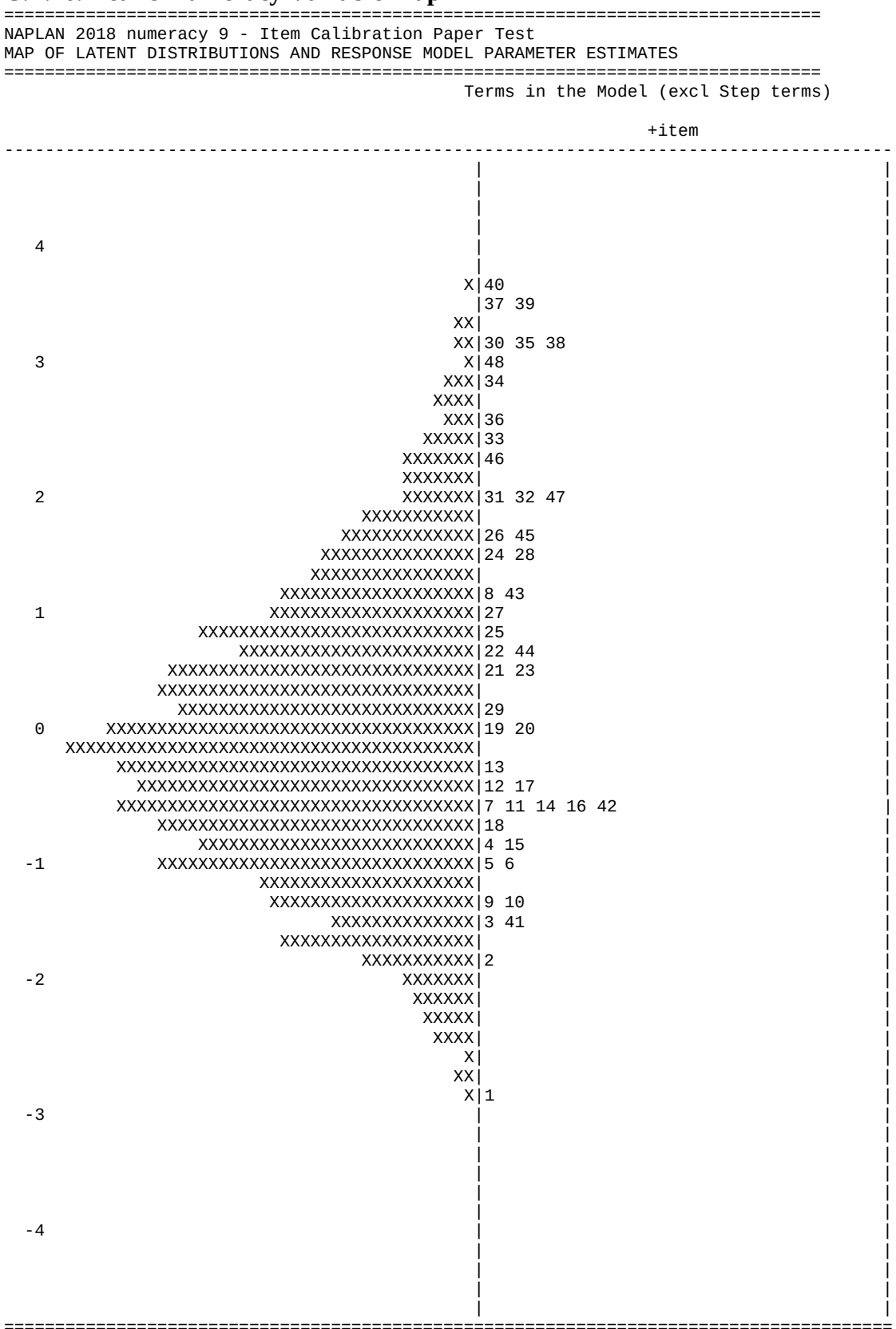
C.P.14. Year 5 Numeracy Variable Map



C.P.15. Year 7 Numeracy Variable Map



C.P.16. Year 9 Numeracy Variable Map

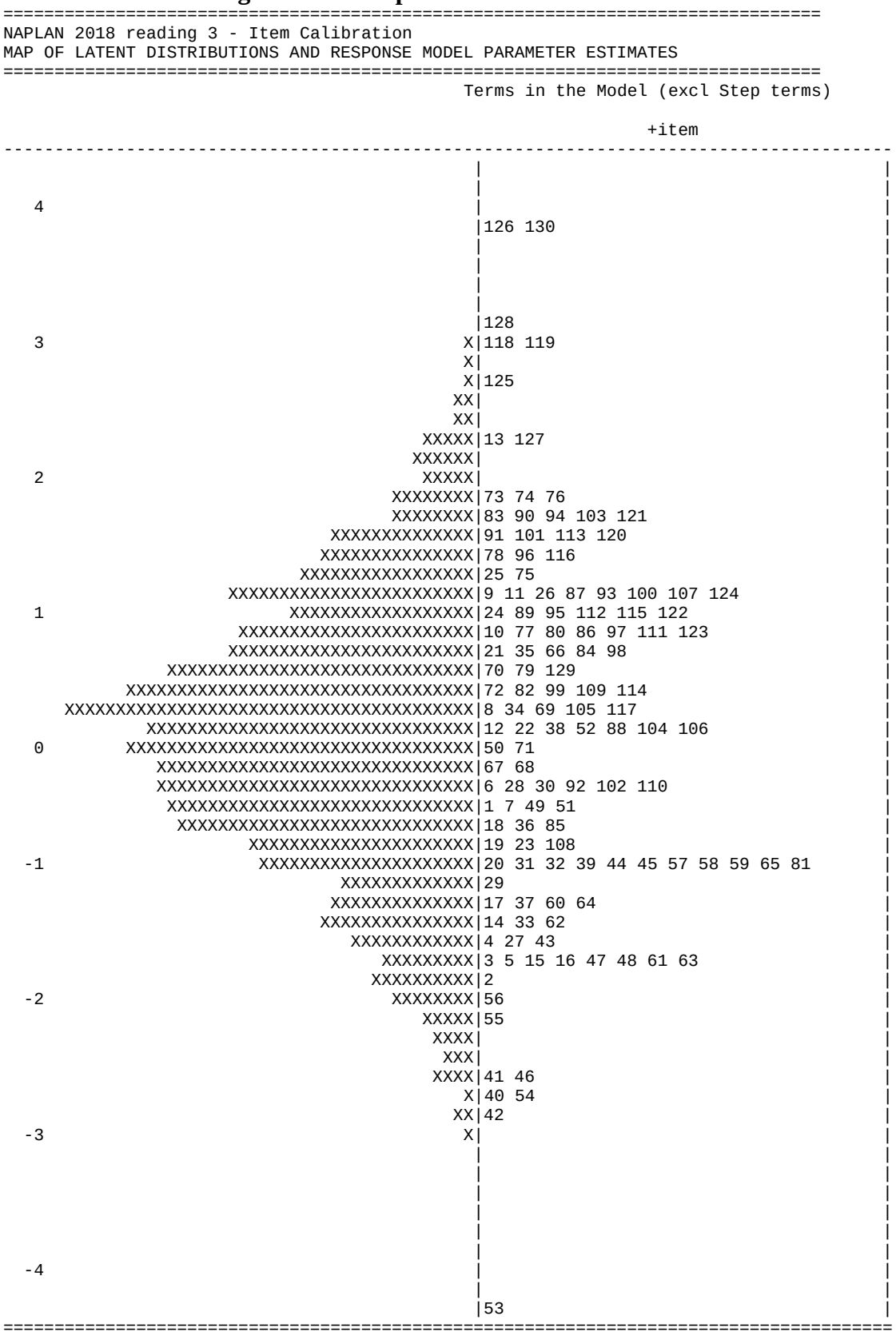


C.P.17. Year 3, 5, 7, 9 Writing Variable Map

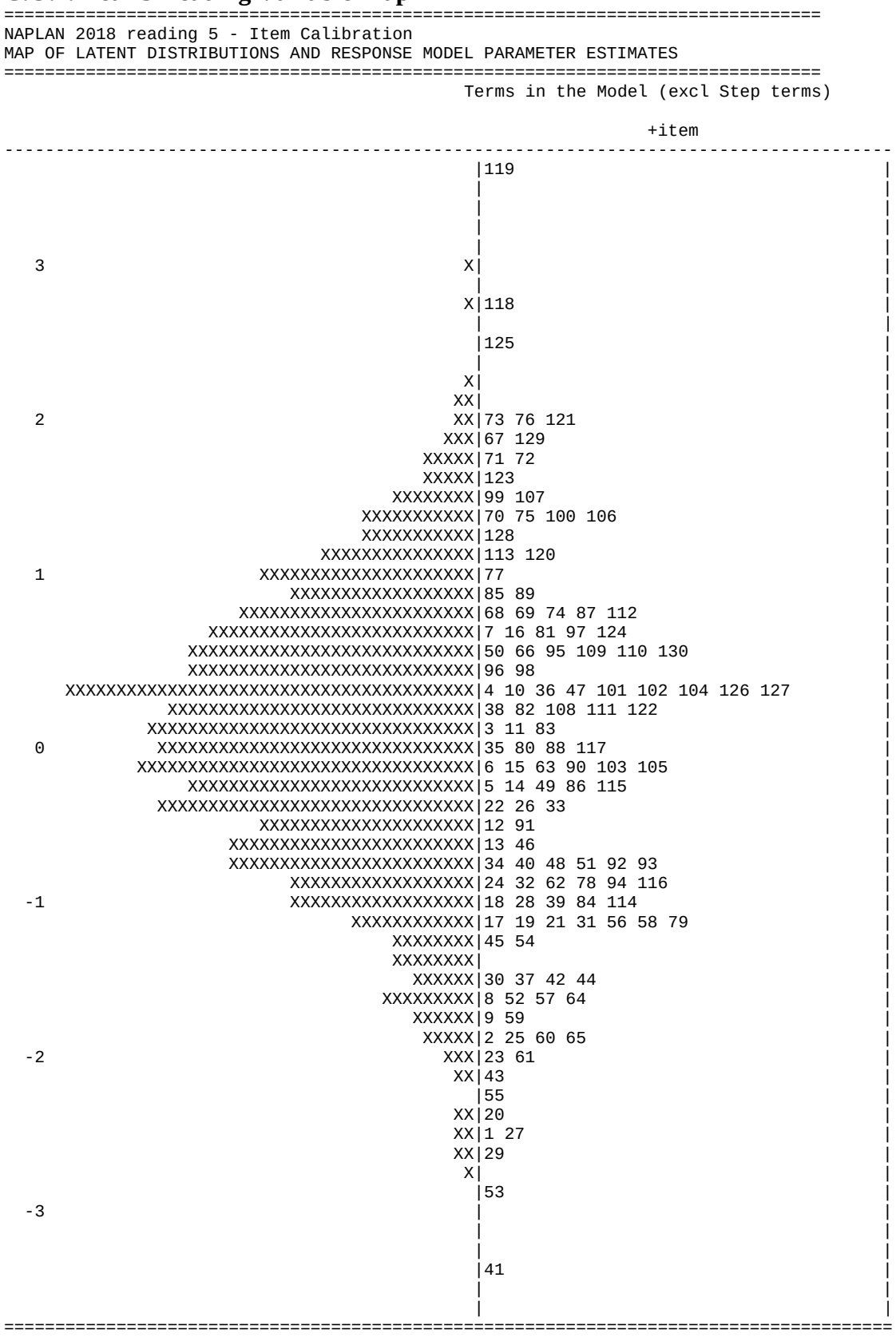
```
================================================================================
NAPLAN 2018 Writing - Item Calibration Paper Test
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES AND THRESHOLDS
================================================================================
             Terms in the Model (excl Step terms)

                                          +Criteria  |Generalised-Item Thresholds
-------------------------------------------------------------------------
                                          X|         |
                                           |         |
  12                                       |         |
                                           |         |8.6
  11                                       |         |
                                           |         |1.6
                                          X|         |
  10                                      X|         |3.5 5.5
                                         XX|         |9.5
   9                                     XX|         |6.4
                                         XX|         |10.6
                                       XXXX|         |
   8                                  XXXXX|         |2.4 4.4 8.5
                                    XXXXXXX|         |
   7                                XXXXXXX|         |1.5 7.3
                                  XXXXXXXXX|         |
                                XXXXXXXXXXX|         |9.4
   6                          XXXXXXXXXXXXX|         |5.4
                              XXXXXXXXXXXXX|         |3.4
   5                  XXXXXXXXXXXXXXXXXXXX|         |
                       XXXXXXXXXXXXXXXXXXX|         |10.5
                     XXXXXXXXXXXXXXXXXXXXX|         |8.4
   4               XXXXXXXXXXXXXXXXXXXXXXX|         |1.4 6.3
                    XXXXXXXXXXXXXXXXXXXXXX|         |2.3 4.3
   3            XXXXXXXXXXXXXXXXXXXXXXXXX|         |
             XXXXXXXXXXXXXXXXXXXXXXXXXXXX|         |
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|7 8      |5.3
   2     XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|         |7.2
       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|9        |9.3 10.4
   1  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|1 2 4    |
        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|3 5      |8.3
          XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|6        |
   0             XXXXXXXXXXXXXXXXXXXXXXXX|10       |3.3
               XXXXXXXXXXXXXXXXXXXXXXXXXX|         |1.3
  -1               XXXXXXXXXXXXXXXXXXXXXX|         |
                  XXXXXXXXXXXXXXXXXXXXXXX|         |2.2 4.2
                  XXXXXXXXXXXXXXXXXXXXXXX|         |10.3
  -2                     XXXXXXXXXXXXXXXXX|         |
                         XXXXXXXXXXXXXXXXX|         |7.1
  -3                      XXXXXXXXXXXXXXXX|         |
                             XXXXXXXXXXXXXX|         |9.2
                             XXXXXXXXXXXXXX|         |6.2
  -4                               XXXXXXXXX|         |8.2
                                   XXXXXXXX|         |3.2
  -5                                 XXXXXX|         |1.2
                                     XXXXX|         |2.1 4.1 10.2
  -6                                 XXXXX|         |5.2
                                       XXX|         |
                                       XXX|         |
  -7                                    XX|         |
                                        XX|         |8.1 9.1
  -8                                    X|         |3.1
                                        X|         |5.1 6.1
                                        X|         |10.1
  -9                                  XXX|         |
                                        X|         |1.1
  -10                                   X|         |
                                        X|         |
                                        X|         |
  -11                                  XX|         |
=========================================================================
Each 'X' represents 16.9 cases
The labels for thresholds show the levels of
    criteria, and category, respectively
=================================================
```

APPENDIX C.O. VARIABLE MAPS (ONLINE TEST)

C.O.1. Year 3 Reading Variable Map



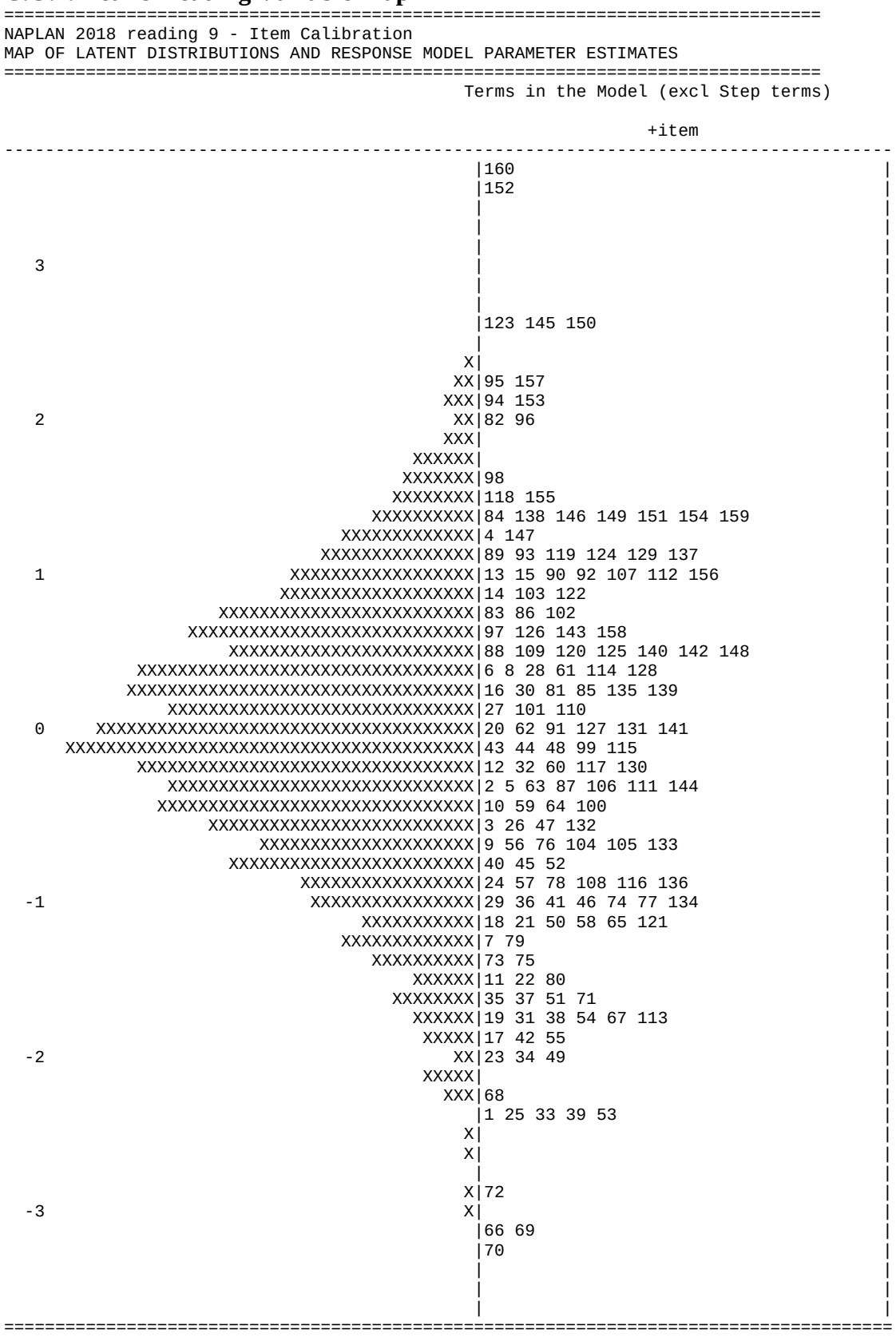
C.O.2. Year 5 Reading Variable Map



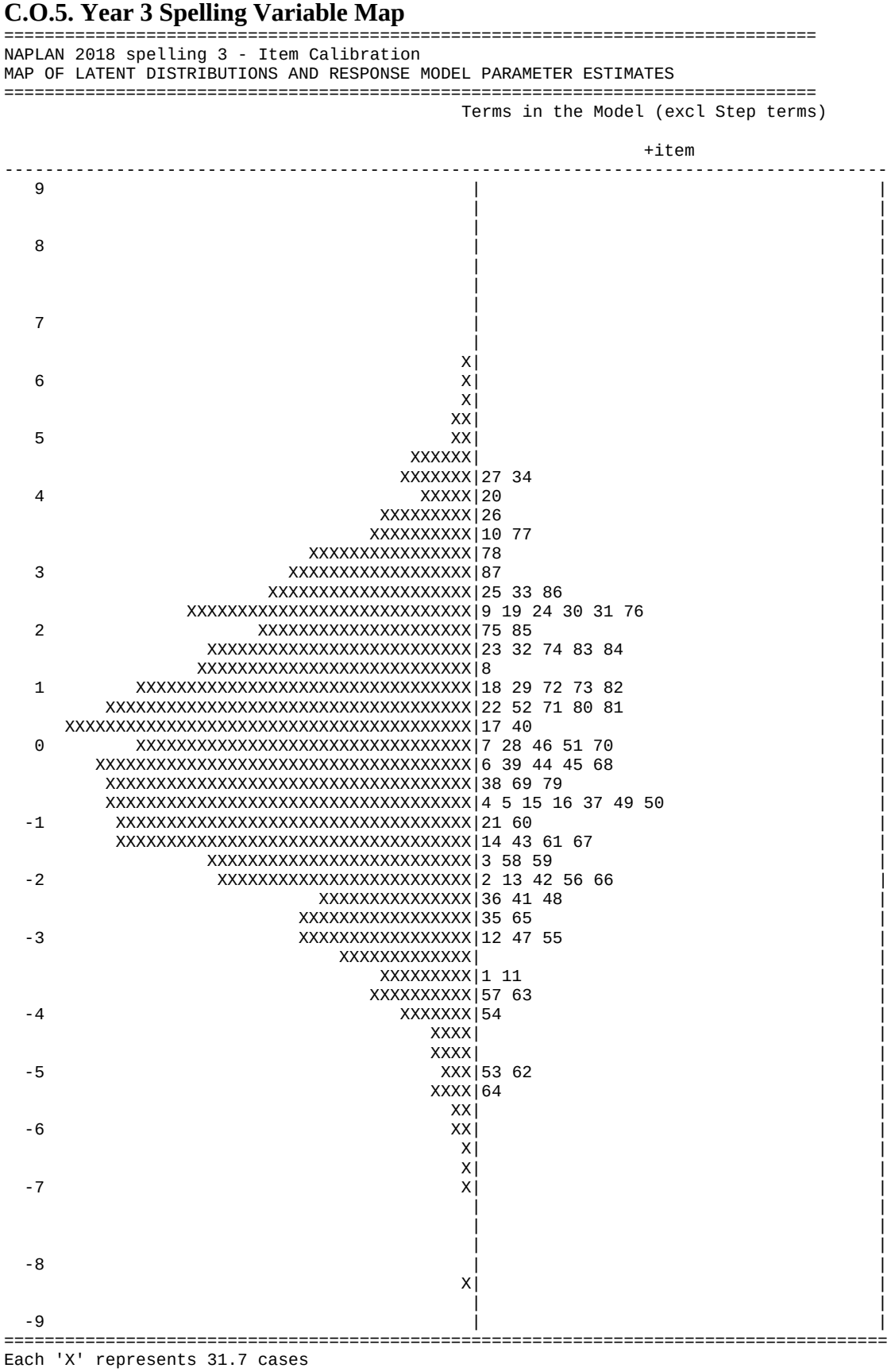
C.O.3. Year 7 Reading Variable Map

```
================================================================================
NAPLAN 2018 reading 7 - Item Calibration
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                        Terms in the Model (excl Step terms)

                                                                    +item
--------------------------------------------------------------------------------------------
                                          |145 151 160                                      |
                                          |158                                              |
                                          |153                                              |
                                          |                                                 |
   3                                      |                                                 |
                                          |96                                               |
                                          |90 123                                           |
                                        X|100                                              |
                                        X|                                                 |
                                        X|155 157                                          |
                                      XXX|149                                              |
                                        X|118 148 150 154                                  |
   2                                    X|139 147 159                                      |
                                        X|8                                                |
                                   XXXXXX|85 119 124                                       |
                                   XXXXXX|95                                               |
                                 XXXXXXXX|82                                               |
                                    XXXXXX|83 88 138 146                                   |
                                XXXXXXXXXX|16                                             |
                               XXXXXXXXXXX|92 94 122 126                                  |
                           XXXXXXXXXXXXXXXX|15 29 99 120 144 156                          |
   1                        XXXXXXXXXXXXXXXX|27 87 136                                   |
                         XXXXXXXXXXXXXXXXXX|14 108 128                                   |
                     XXXXXXXXXXXXXXXXXXXXX|84 101 104 109 114 152                       |
                   XXXXXXXXXXXXXXXXXXXXXXX|10 13 57 86 140 142                         |
                    XXXXXXXXXXXXXXXXXXXXXXX|89 97 107 125                               |
                 XXXXXXXXXXXXXXXXXXXXXXXXX|81 91 93 103 110 115                        |
           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|106 117 134                                  |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|9 12 38 41 63 64 127                        |
   0  XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|45                                           |
         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|11 25 30 47 102 111 112                      |
        XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|19 46 59 98 135 137                          |
           XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|32 80                                       |
              XXXXXXXXXXXXXXXXXXXXXXXXXX|6 48 60 61 129 132 141                      |
            XXXXXXXXXXXXXXXXXXXXXXXXXXXX|36 56 62 79                                 |
              XXXXXXXXXXXXXXXXXXXXXXXXXX|24 31 121                                  |
                   XXXXXXXXXXXXXXXXXXXXXX|7 17 18 54 66 76 116                       |
                            XXXXXXXXXXXXXXXX|53 78 130                               |
  -1                          XXXXXXXXXXXXXXX|28 105 131                             |
                               XXXXXXXXXXXXXX|3 68 70 74                             |
                                XXXXXXXXXXXXX|65 69                                  |
                               XXXXXXXXXXXXXX|43 58 77                               |
                                    XXXXXXXXX|1 39 44 143                            |
                                      XXXXXXX|37 40 42 55 75 113 133                  |
                                       XXXXXX|22 67                                   |
                                         XXXX|33 34 49 52                            |
                                         XXXX|                                       |
  -2                                        X|2 4 20 35                              |
                                          XXX|23                                     |
                                            X|21                                     |
                                            X|5 26                                  |
                                            X|                                       |
                                             |                                       |
                                             |                                       |
                                             |                                       |
  -3                                         |73                                     |
                                             |50 51                                  |
                                             |                                       |
                                             |72                                     |
                                             |71                                     |
============================================================================================
Each 'X' represents 31.5 cases
```

C.O.4. Year 9 Reading Variable Map



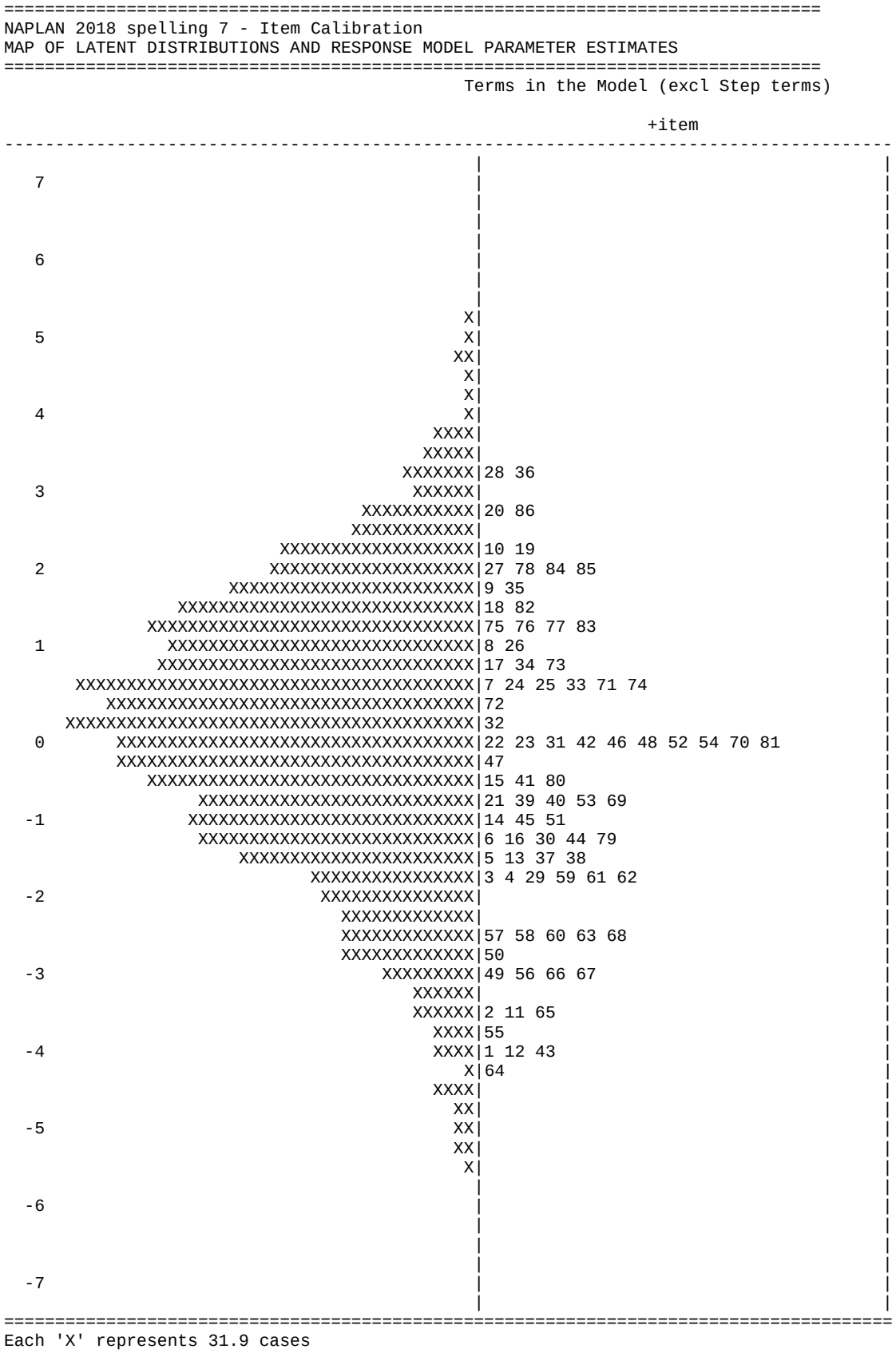
C.O.5. Year 3 Spelling Variable Map



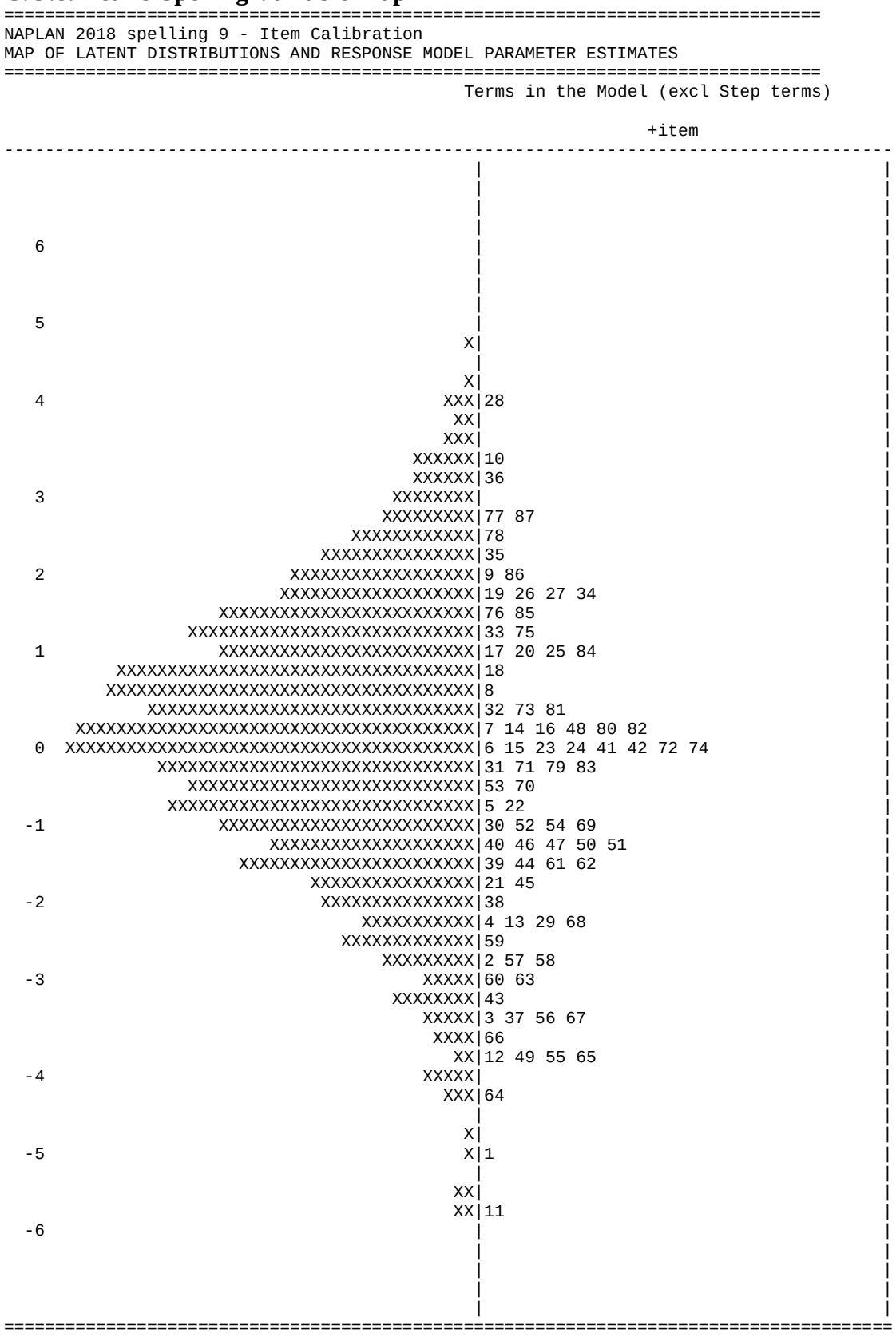
C.O.6. Year 5 Spelling Variable Map

```
================================================================================
NAPLAN 2018 spelling 5 - Item Calibration
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                            Terms in the Model (excl Step terms)

                                                                +item
--------------------------------------------------------------------------------
                                            |                                      |
                                            |                                      |
   8                                        |                                      |
                                            |                                      |
                                            |                                      |
   7                                        |                                      |
                                            |                                      |
                                            |                                      |
                                            |                                      |
   6                                        |                                      |
                                            |                                      |
                                          X|                                      |
   5                                      XX|                                      |
                                          XX|                                      |
                                          XX|                                      |
                                        XXXX|                                      |
   4                                    XXXXX|88                                   |
                                     XXXXXXXX|10 36                                |
                                 XXXXXXXXXXXX|20                                   |
   3                             XXXXXXXXXXXX|28 80                                |
                            XXXXXXXXXXXXXXXXX|19                                   |
                        XXXXXXXXXXXXXXXXXXXXX|79                                   |
                         XXXXXXXXXXXXXXXXXXXX|27 35                                |
   2                  XXXXXXXXXXXXXXXXXXXXXXX|9 78                                 |
                   XXXXXXXXXXXXXXXXXXXXXXXXXX|26 33 34 77 86                       |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXXX|25 87                                |
   1              XXXXXXXXXXXXXXXXXXXXXXXXXXX|48 75                                |
      XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|23 24 76                             |
                XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|18 54 74 82 84 85                    |
               XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|8 42 83                              |
   0           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|7 17 32 47 73                        |
             XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|30 40 41 72 81                       |
                  XXXXXXXXXXXXXXXXXXXXXXXXXXX|5 15 16 22 31 39 46 53               |
  -1           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|6 21 61                              |
                        XXXXXXXXXXXXXXXXXXXX|52 62 63                             |
                     XXXXXXXXXXXXXXXXXXXXXXX|70 71                                |
                    XXXXXXXXXXXXXXXXXXXXXXXX|4 29 38 45 51 69                     |
  -2                       XXXXXXXXXXXXXXXXXX|3                                    |
                           XXXXXXXXXXXXXXXXXX|14 37 44                             |
                                 XXXXXXXXXXXXX|2 12 43 49 50 60 67                  |
  -3                                 XXXXXXXXX|13 59 68                             |
                                      XXXXXXXX|57 66                                |
                                        XXXXXX|58 65                                |
                                     XXXXXXXXX|55 56                                |
  -4                                    XXXXXX|                                     |
                                          XXXX|                                     |
                                           XXX|1 64                                 |
  -5                                        XX|                                     |
                                            |                                      |
                                           XX|11                                   |
                                           XX|                                     |
  -6                                        XX|                                     |
                                           XX|                                     |
                                            |                                      |
  -7                                        |                                      |
                                            |                                      |
                                          X|                                      |
                                            |                                      |
  -8                                        |                                      |
                                            |                                      |
================================================================================
Each 'X' represents 35.5 cases
```

C.O.7. Year 7 Spelling Variable Map



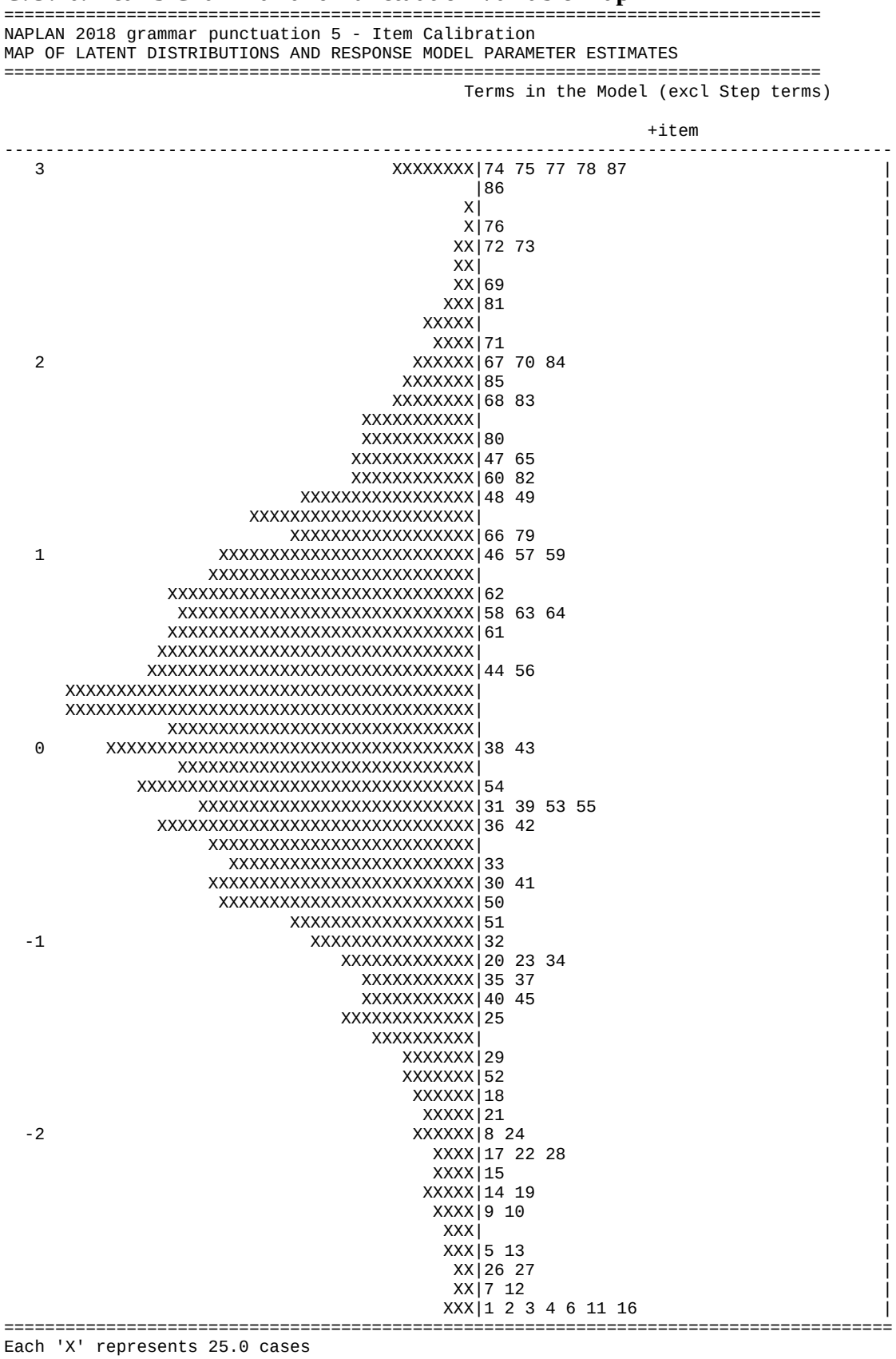
C.O.8. Year 9 Spelling Variable Map



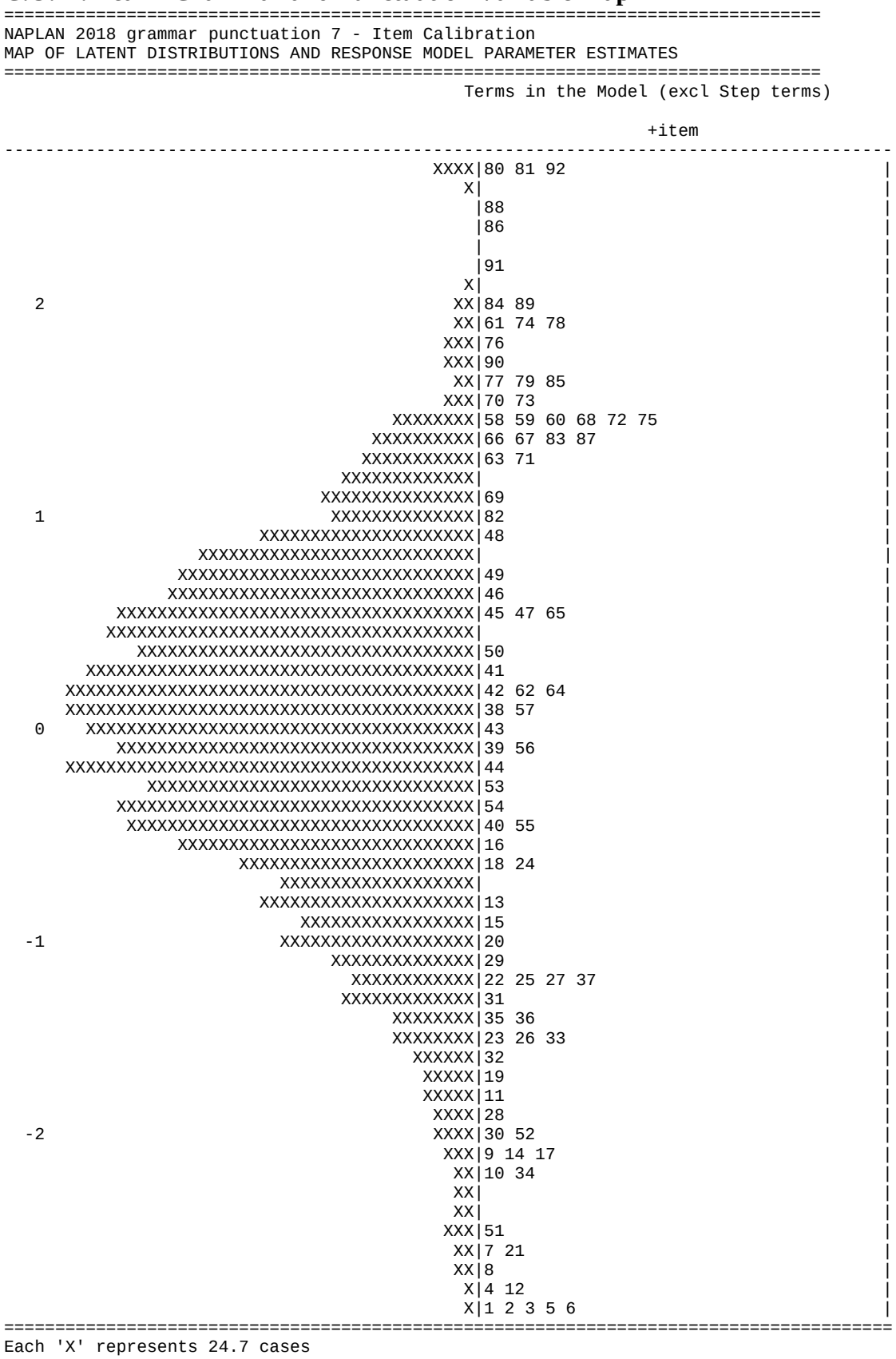
C.O.9. Year 3 Grammar and Punctuation Variable Map

```
================================================================================
NAPLAN 2018 grammar punctuation 3 - Item Calibration
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                            Terms in the Model (excl Step terms)

                                                                +item
--------------------------------------------------------------------------------
                                        XXXXX|84 90 91 92                      |
                                            X|86                                |
                                            X|85                                |
                                            X|                                  |
                                            X|                                  |
                                           XX|89                                |
                                           XX|                                  |
   2                                      XXXX|                                  |
                                           XXX|81                                |
                                          XXXX|51                                |
                                         XXXXXX|83                                |
                                        XXXXXXX|74                                |
                                      XXXXXXXXX|67 75                             |
                                     XXXXXXXXXX|82                                |
                                     XXXXXXXXXX|80                                |
                                    XXXXXXXXXXX|72 78 79                          |
                                 XXXXXXXXXXXXXX|69                                |
   1                         XXXXXXXXXXXXXXXXXX|71 88                             |
                              XXXXXXXXXXXXXXXXX|64 65 73 77                       |
                     XXXXXXXXXXXXXXXXXXXXXXXXXX|48 49                             |
                         XXXXXXXXXXXXXXXXXXXXXX|47 66 76                          |
                       XXXXXXXXXXXXXXXXXXXXXXXX|                                  |
                       XXXXXXXXXXXXXXXXXXXXXXXX|46 50                             |
                  XXXXXXXXXXXXXXXXXXXXXXXXXXXX|43 68                             |
                    XXXXXXXXXXXXXXXXXXXXXXXXXX|45 70                             |
             XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|                                  |
         XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|38 58 60 63                       |
   0            XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|29 40 42 61 62                    |
              XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|33 36 56 57                       |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|31                                |
           XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|37 44 55                          |
       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX|39 59                             |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|18 28 30 87                       |
                 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX|54                                |
                    XXXXXXXXXXXXXXXXXXXXXXXXXX|52 53                             |
                          XXXXXXXXXXXXXXXXXXXX|19 34 35                          |
                       XXXXXXXXXXXXXXXXXXXXXXX|                                  |
  -1                         XXXXXXXXXXXXXXXXXX|22 24 25                          |
                               XXXXXXXXXXXXXXXX|12 41                             |
                             XXXXXXXXXXXXXXXXXX|23 32                             |
                                 XXXXXXXXXXXXXX|21                                |
                                 XXXXXXXXXXXXXX|16                                |
                                     XXXXXXXXXX|15 20                             |
                                    XXXXXXXXXXX|9                                 |
                                    XXXXXXXXXXX|14                                |
                                     XXXXXXXXXX|8 11 17                           |
                                     XXXXXXXXXX|27                                |
                                    XXXXXXXXXXX|                                  |
  -2                                   XXXXXXXX|6 10                              |
                                       XXXXXXXX|7                                 |
                                          XXXXX|13                                |
                                         XXXXXX|                                  |
                                          XXXXX|                                  |
                                           XXXX|3 4                               |
                                          XXXXX|                                  |
                                            XXX|26                                |
                                            XXX|                                  |
                                             XX|                                  |
  -3                                          X|                                  |
                                            XXX|1 2 5                             |
================================================================================
Each 'X' represents 25.7 cases
```

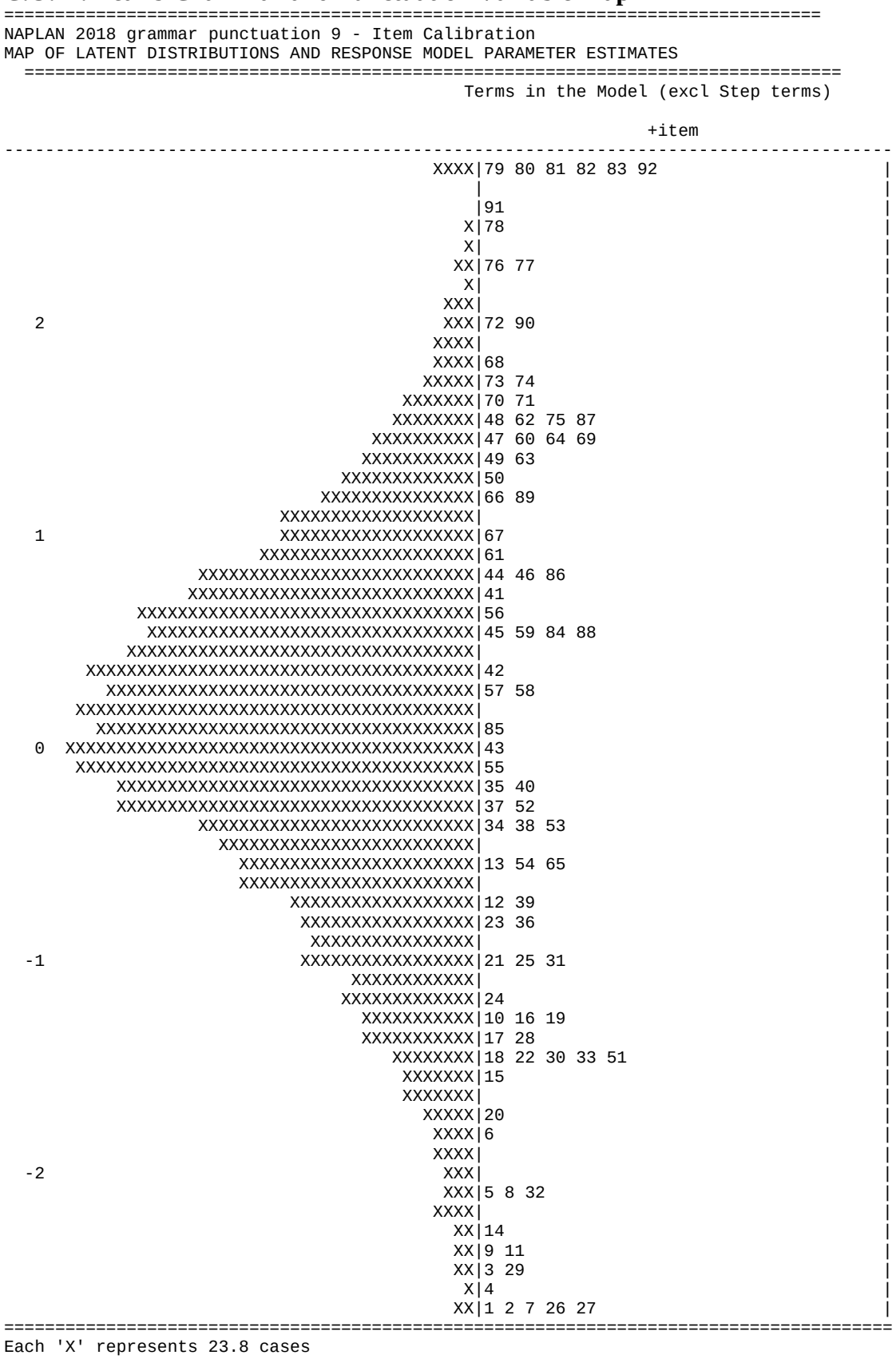
C.O.10. Year 5 Grammar and Punctuation Variable Map



C.O.11. Year 7 Grammar and Punctuation Variable Map



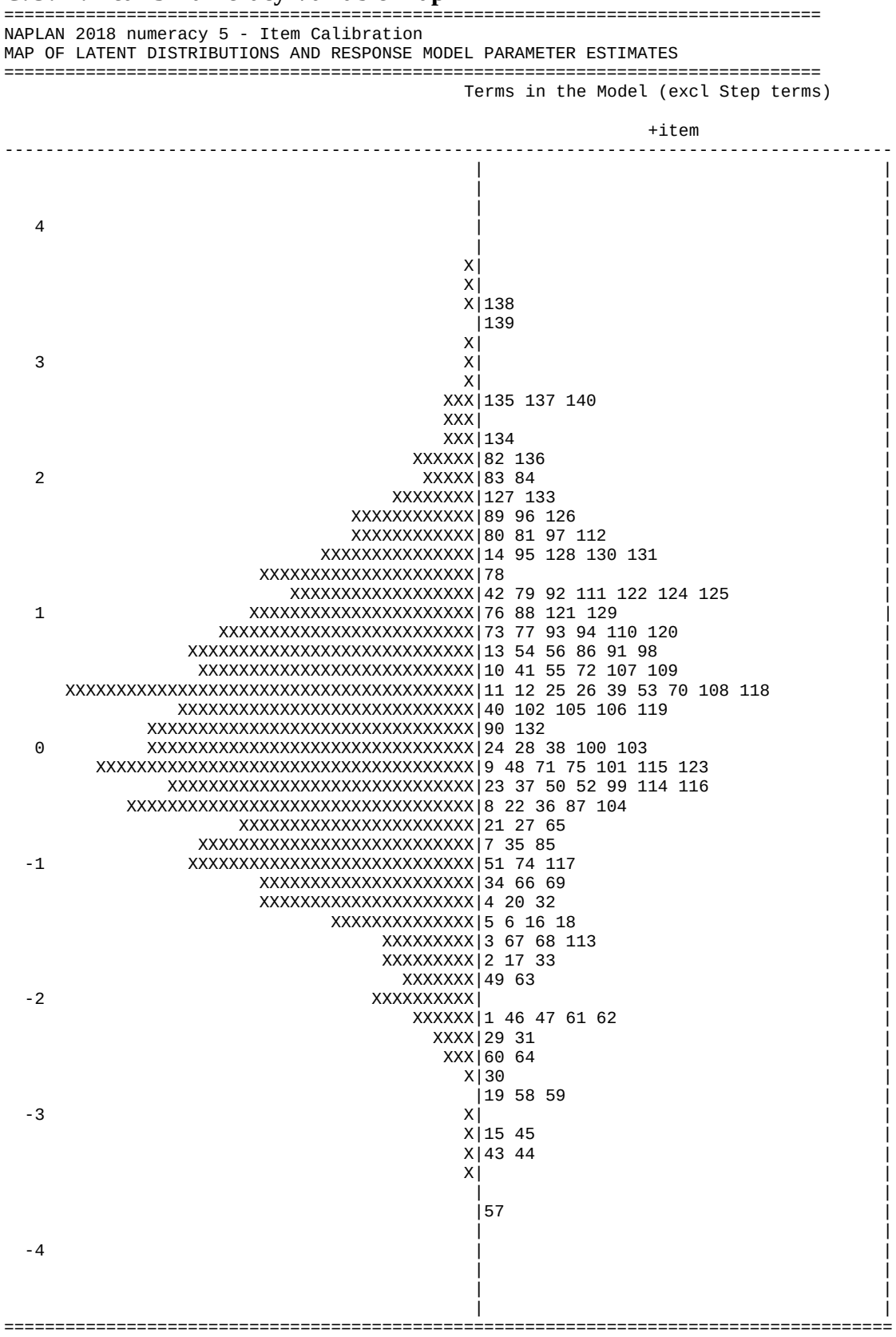
C.O.12. Year 9 Grammar and Punctuation Variable Map



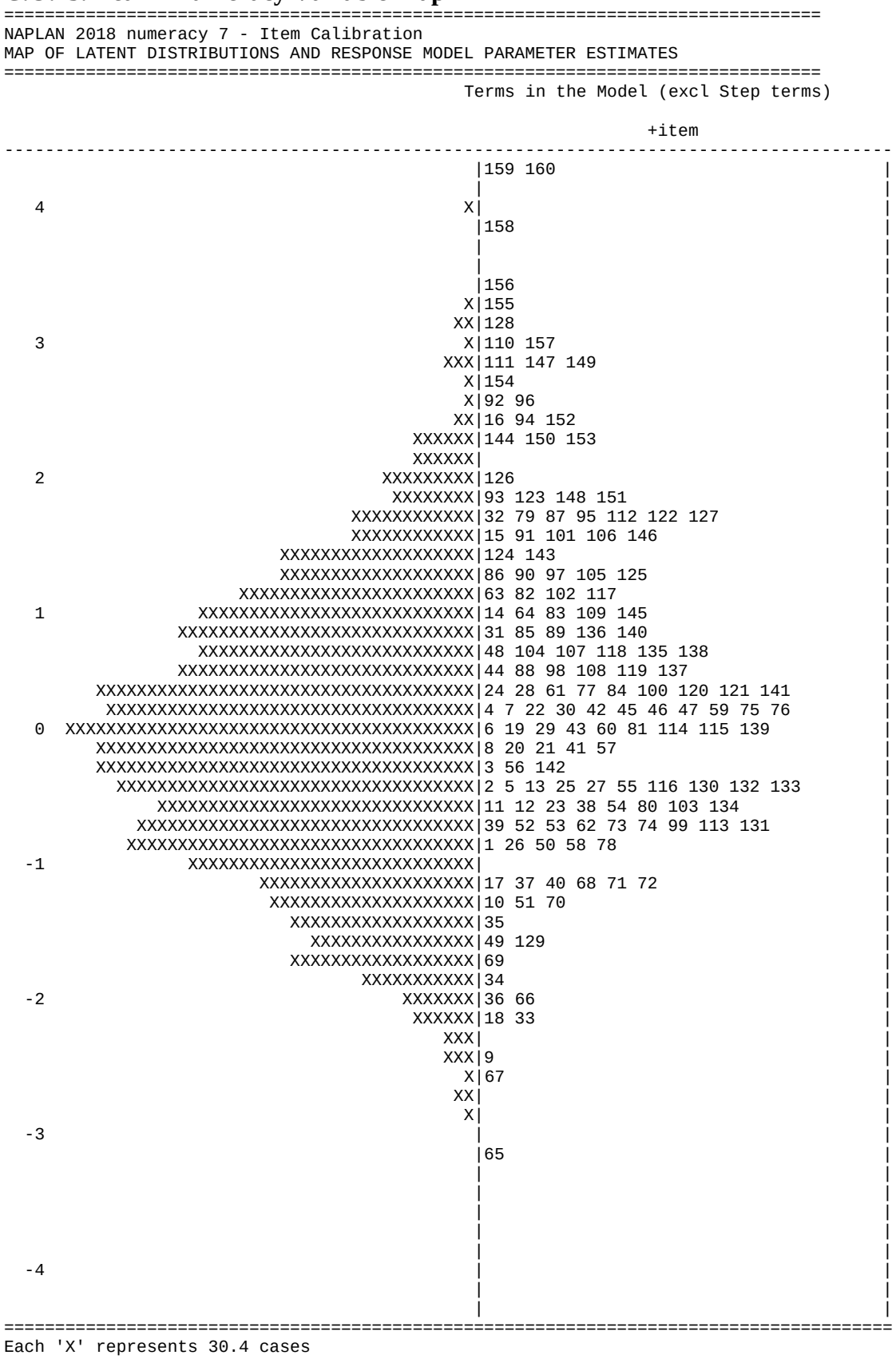
C.O.13. Year 3 Numeracy Variable Map

```
================================================================================
NAPLAN 2018 numeracy 3 - Item Calibration
MAP OF LATENT DISTRIBUTIONS AND RESPONSE MODEL PARAMETER ESTIMATES
================================================================================
                                        Terms in the Model (excl Step terms)

                                                                    +item
--------------------------------------------------------------------------------
                                          |                                     |
                                          |                                     |
                                          |                                     |
                                          |                                     |
   4                                      |                                     |
                                        X |                                     |
                                          |                                     |
                                          |                                     |
                                          |                                     |
                                        X |                                     |
   3                                      |114 119                              |
                                      XXX |115 118                              |
                                      XXX |117                                  |
                                      XXX |103 113 116                          |
                                     XXXX |95 107                               |
                                  XXXXXXX |                                     |
                                    XXXXX |79 81 111 112                        |
   2                           XXXXXXXXXX |                                     |
                                 XXXXXXXX |70 109                               |
                             XXXXXXXXXXXXX |83                                   |
                            XXXXXXXXXXXXXX |67 71 80 93                          |
                           XXXXXXXXXXXXXXX |66 69 78                             |
                         XXXXXXXXXXXXXXXX |61 91 94                             |
   1                 XXXXXXXXXXXXXXXXXXXX |63 64 75 82 106 108 110              |
                  XXXXXXXXXXXXXXXXXXXXXX |60 62 65 72 102                      |
                    XXXXXXXXXXXXXXXXXXXX |77                                   |
              XXXXXXXXXXXXXXXXXXXXXXXXX |46 89 90 92                          |
           XXXXXXXXXXXXXXXXXXXXXXXXXXX |8 11 12 74 105                       |
       XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX |68 76 101 104                        |
           XXXXXXXXXXXXXXXXXXXXXXXXXXX |9 34 47 86 98                        |
   0       XXXXXXXXXXXXXXXXXXXXXXXXXXX |10 22 35 58 99                       |
               XXXXXXXXXXXXXXXXXXXXXXX |36 73 87 88                          |
           XXXXXXXXXXXXXXXXXXXXXXXXXXX |5 59                                 |
                  XXXXXXXXXXXXXXXXXXXX |6 45 54 96                           |
                 XXXXXXXXXXXXXXXXXXXXX |21 24 31 32 85                       |
                    XXXXXXXXXXXXXXXXXX |4 7                                  |
  -1                   XXXXXXXXXXXXXXXX |30 33 43 53 84 97                    |
                         XXXXXXXXXXXXXX |55 56 57 100                         |
                          XXXXXXXXXXXXX |3                                    |
                           XXXXXXXXXXXX |15 23                                |
                             XXXXXXXXXX |16 27 37                             |
                              XXXXXXXXX |19 28 29 41 42 44                    |
  -2                            XXXXXXX |14 18 20 39 40                       |
                                  XXXXX |2                                    |
                                   XXXX |26                                   |
                                   XXXX |38                                   |
                                   XXXX |25                                   |
                                     XX |17 50 51                             |
                                        |1 52                                 |
  -3                                  X |49                                   |
                                     XX |                                     |
                                        |                                     |
                                        |48                                   |
                                      X |                                     |
                                        |                                     |
  -4                                    |                                     |
                                        |13                                   |
                                        |                                     |
                                        |                                     |
                                        |                                     |
================================================================================
Each 'X' represents 33.3 cases
```

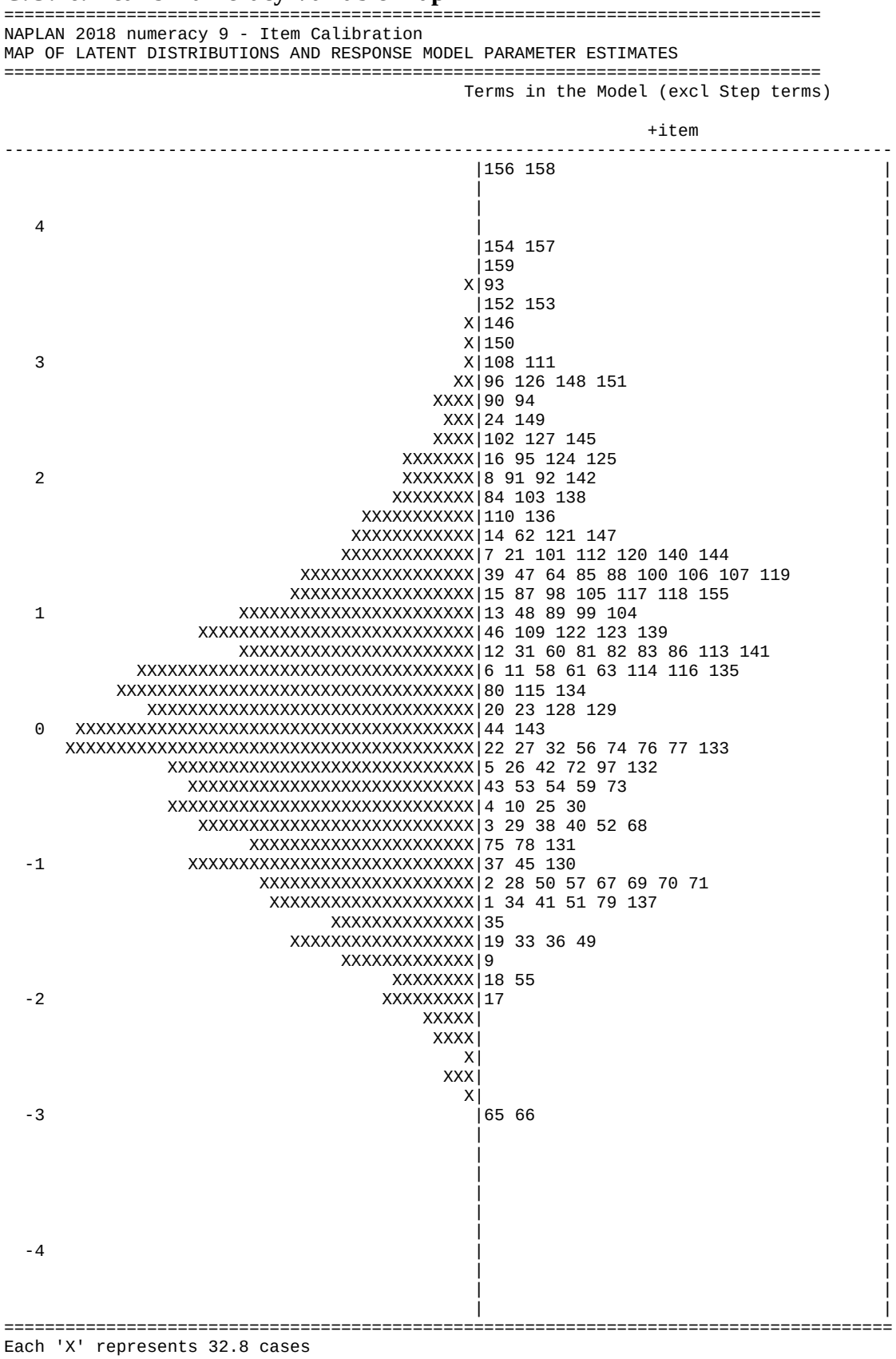
C.O.14. Year 5 Numeracy Variable Map



C.O.15. Year 7 Numeracy Variable Map



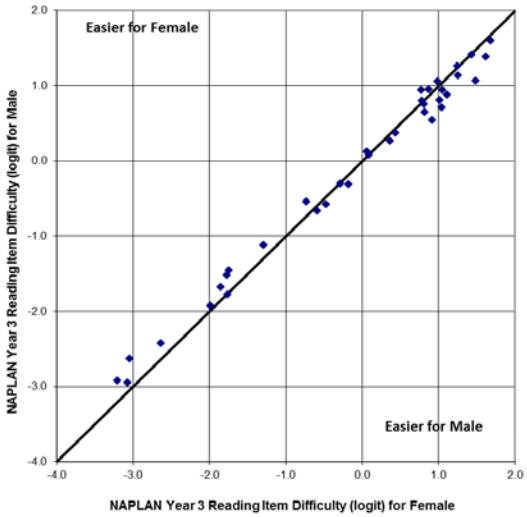
C.O.16. Year 9 Numeracy Variable Map



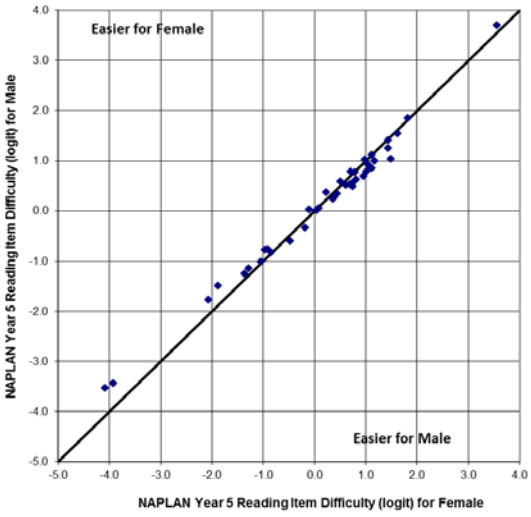
APPENDIX D.P. GENDER DIF ANALYSIS (PAPER TEST)

D.P.1. Comparison of Male and Female Students in Reading

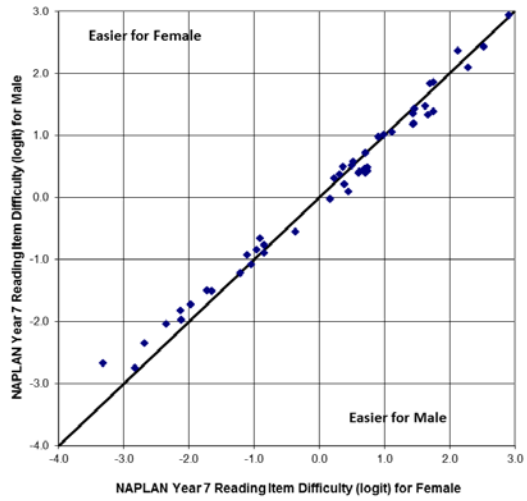
Year 3



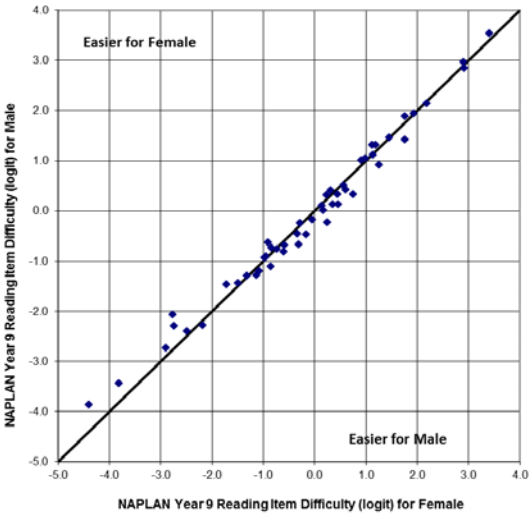
Year 5



Year 7

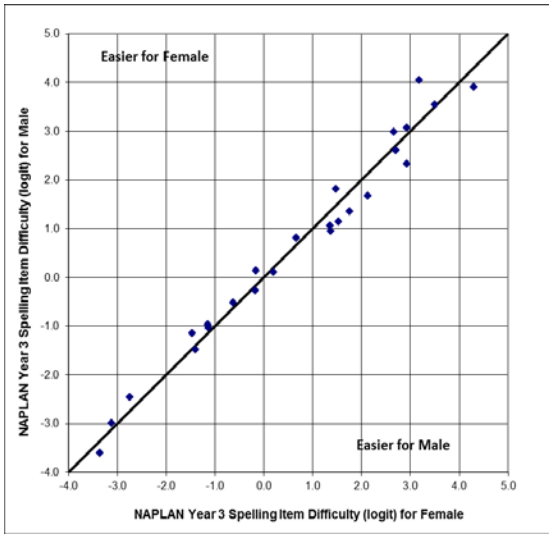


Year 9

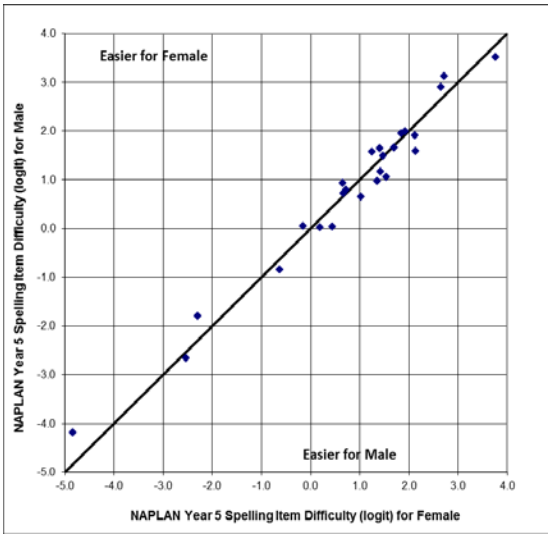


D.P.2. Comparison of Male and Female Students in Spelling

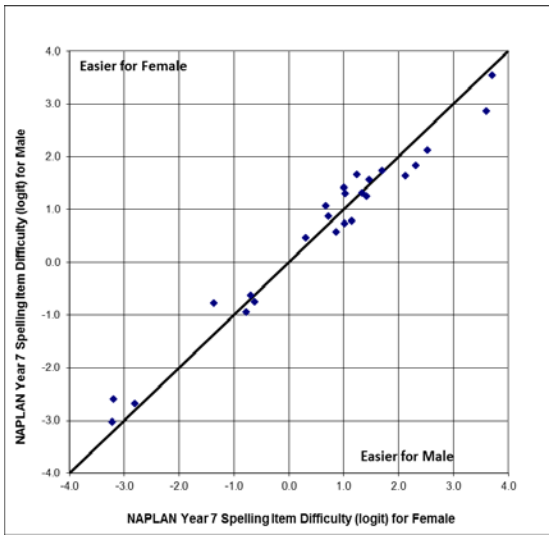
Year 3



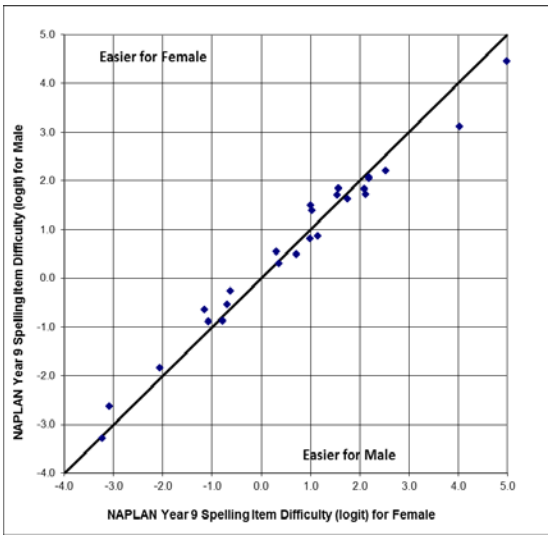
Year 5



Year 7

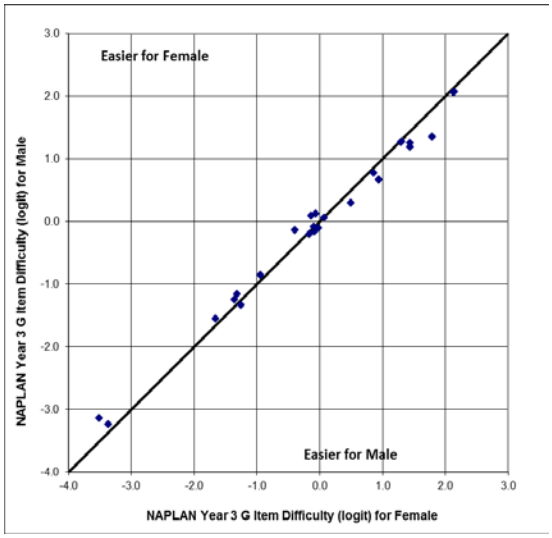


Year 9

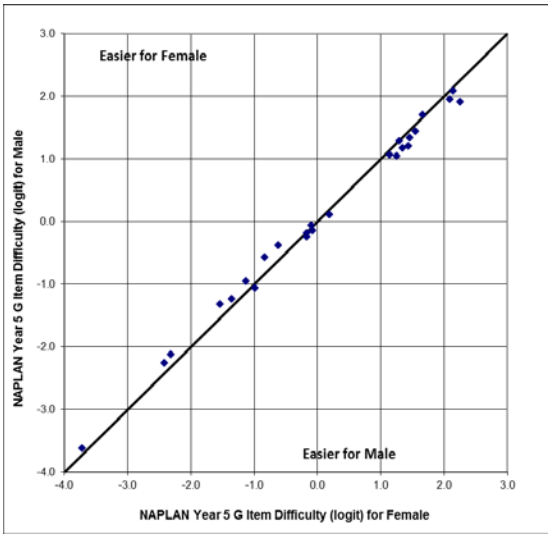


D.P.3. Comparison of Male and Female Students in Grammar and Punctuation

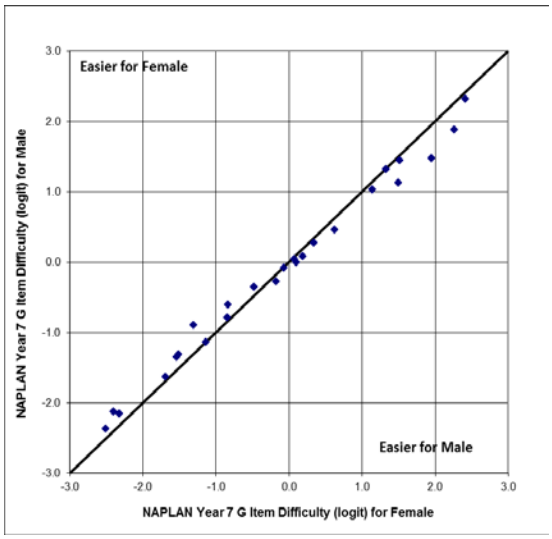
Year 3



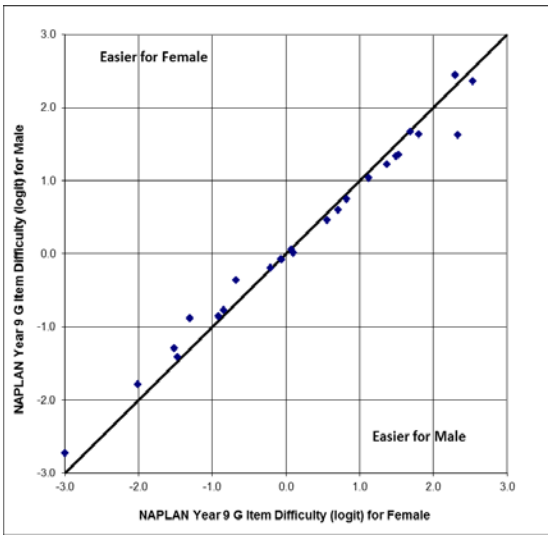
Year 5



Year 7

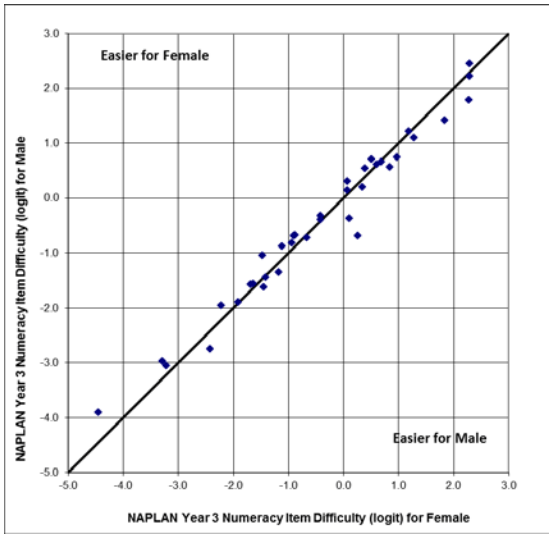


Year 9

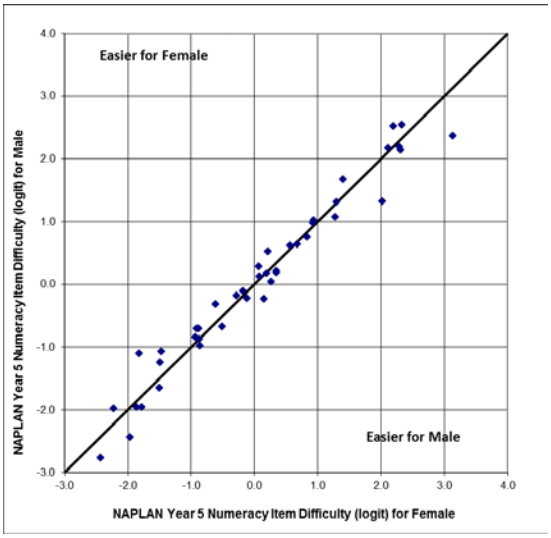


D.P.4. Comparison of Male and Female Students in Numeracy

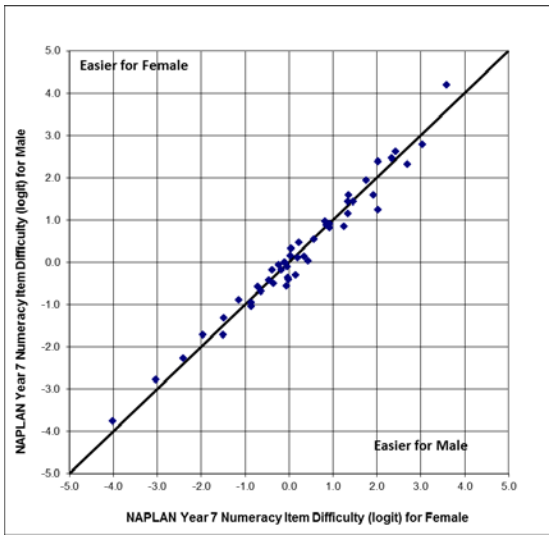
Year 3



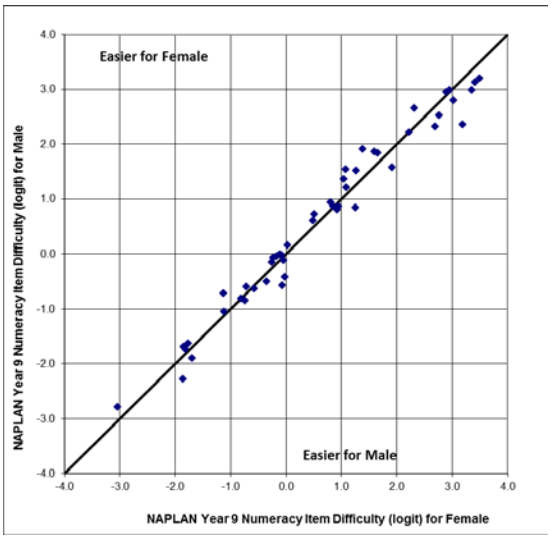
Year 5



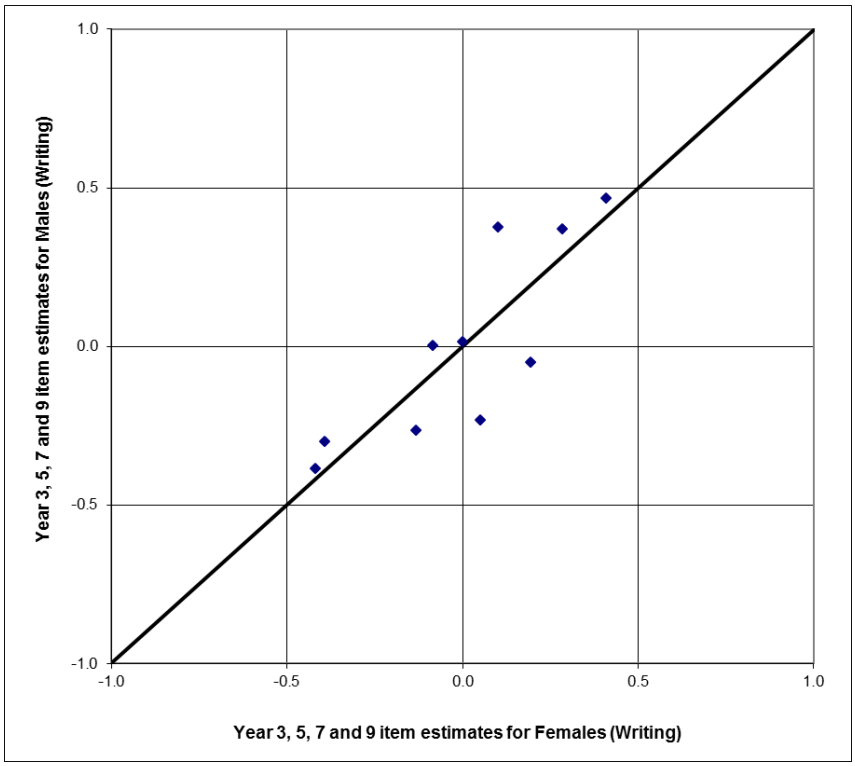
Year 7



Year 9

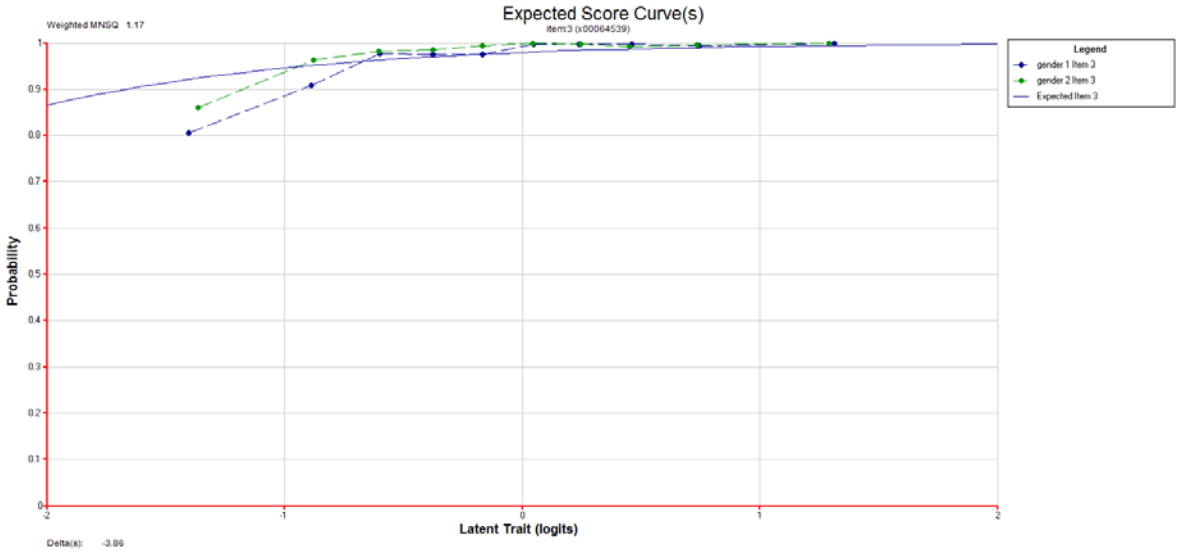


D.P.5. Comparison of Male and Female Students in Writing

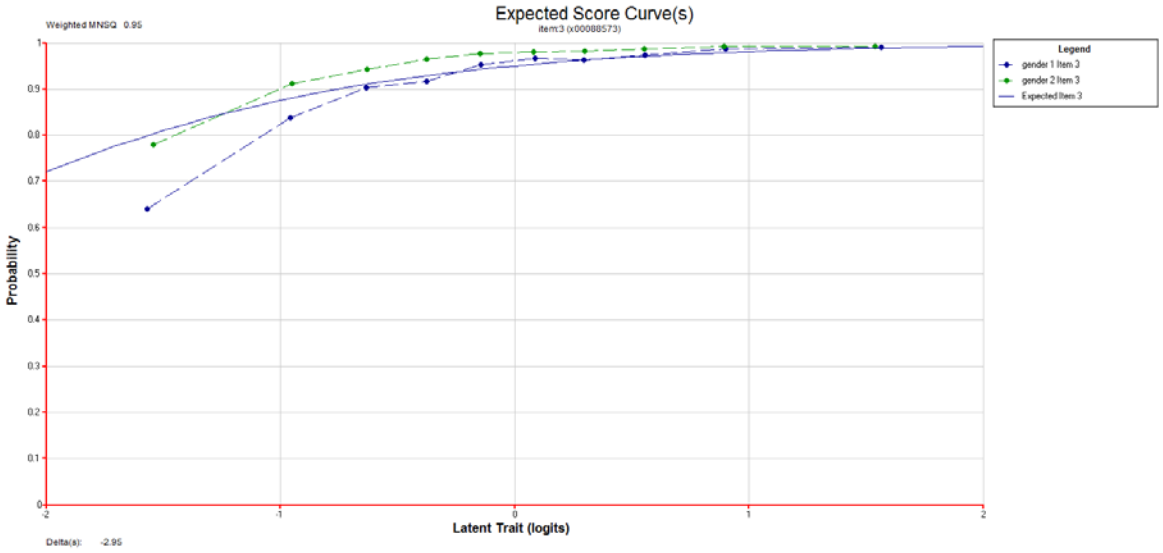


D.P.6 Item DIF Plots for Items Showing Gender DIF[1]

D.P.6.1. Year 5 Reading[2]

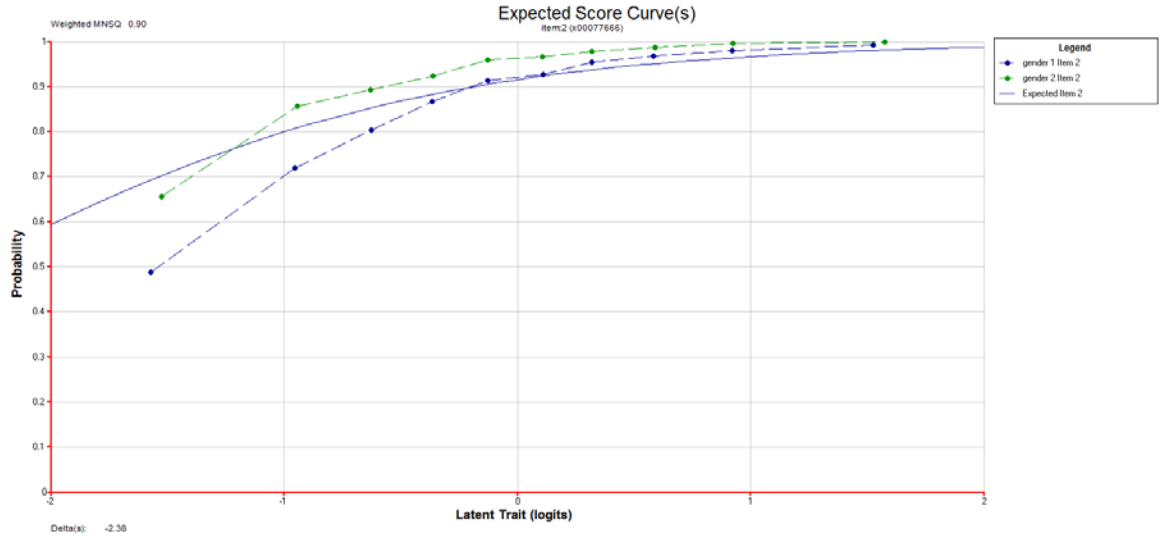


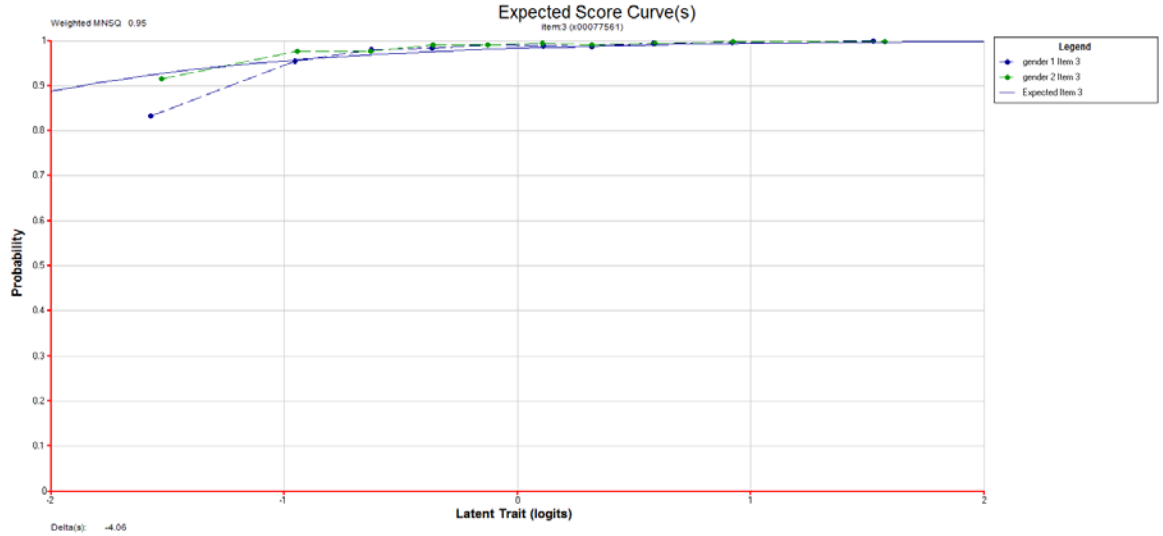
F.P.6.2. Year 7 Reading



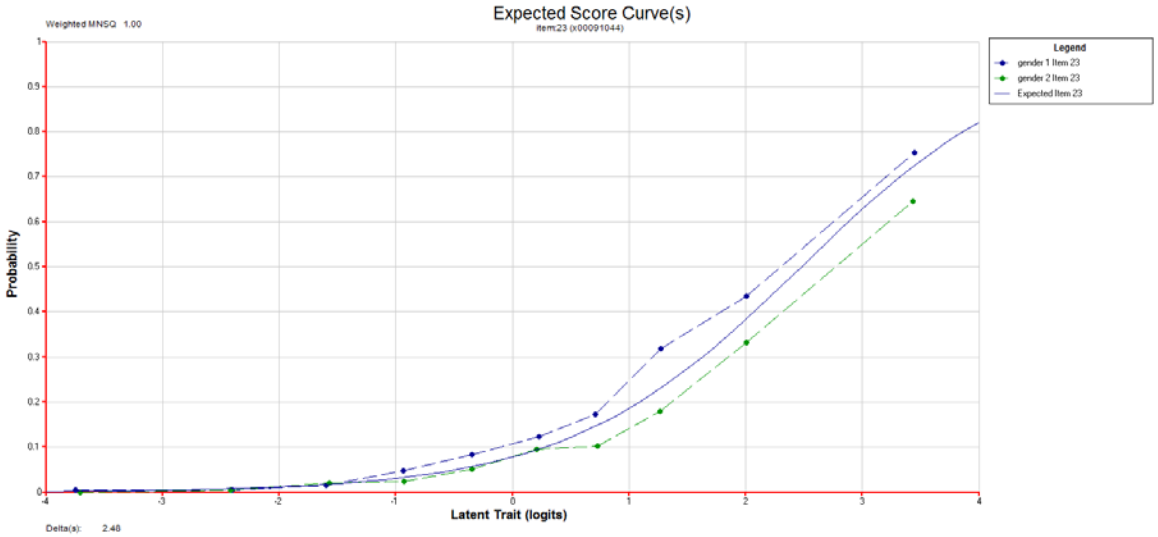
[1] 'gender 1' indicates 'Male' and 'gender 2' indicates 'Female'.
[2] There's no item showing gender DIF in Year 3 Reading.

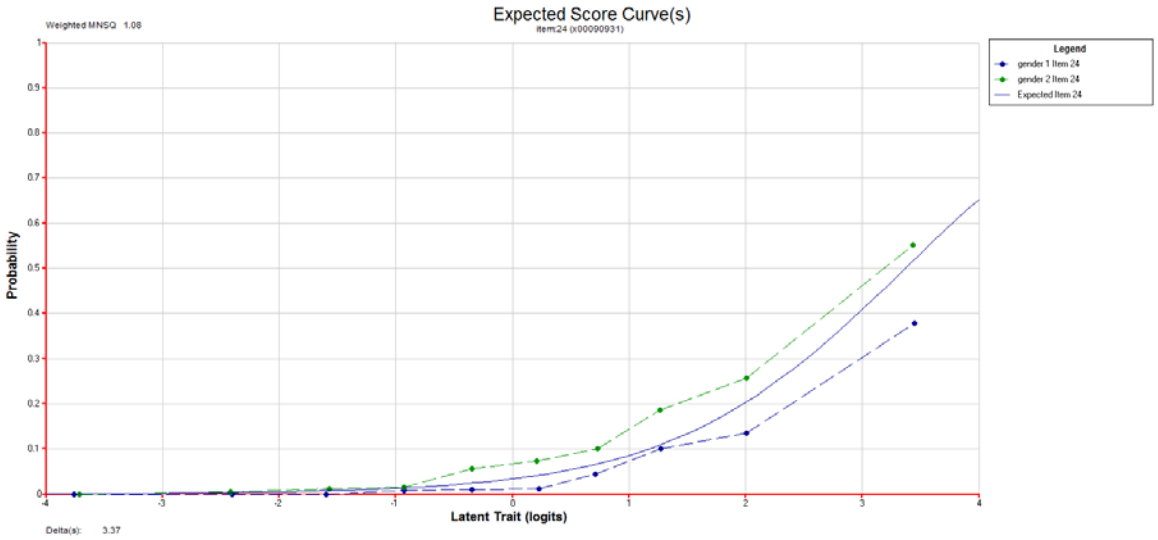
D.P.6.3. Year 9 Reading



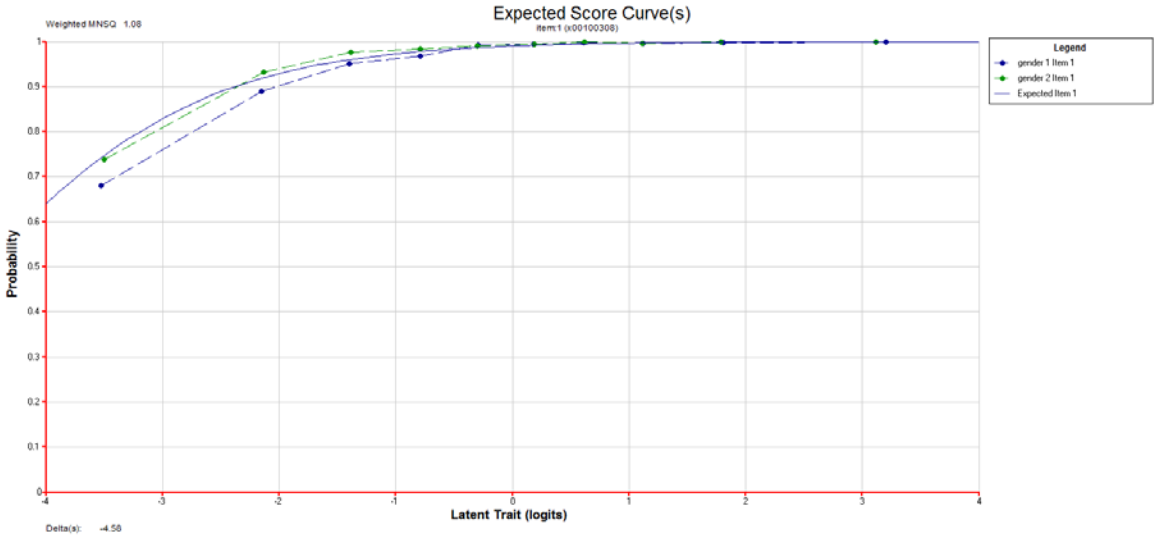


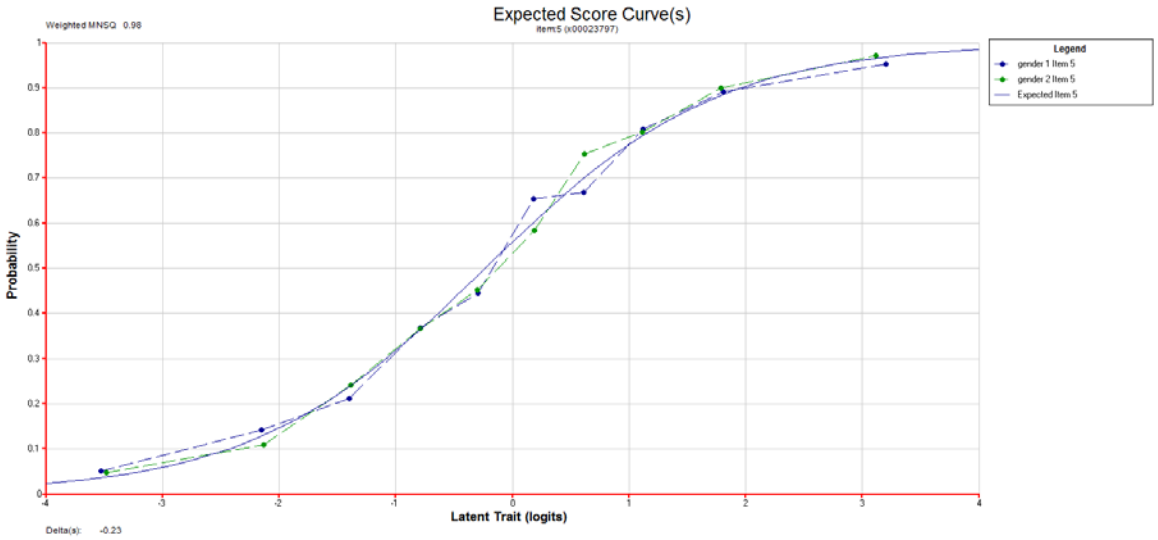
D.P.6.4. Year 3 Spelling

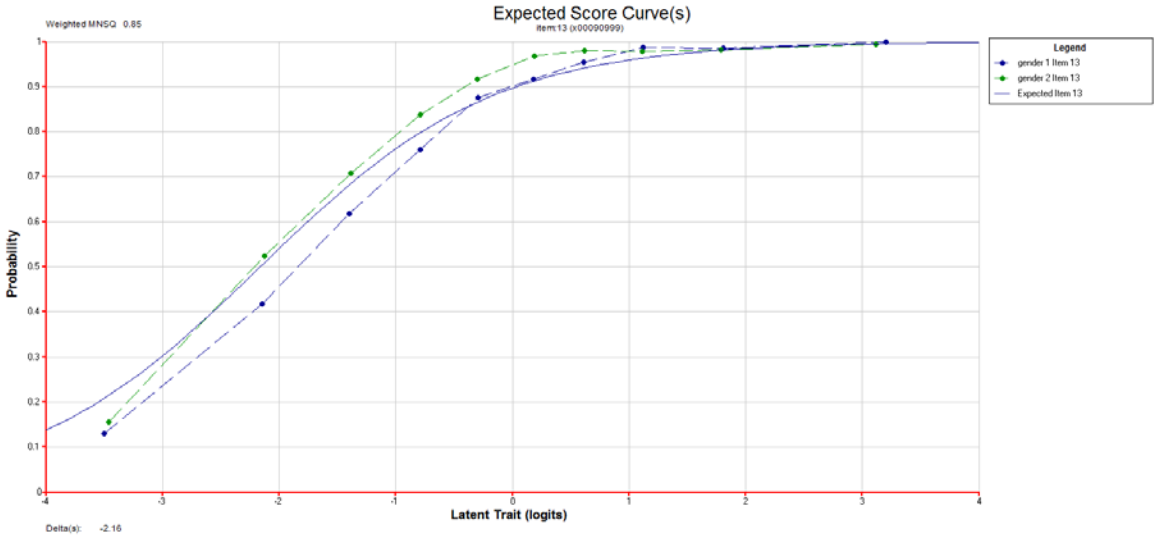




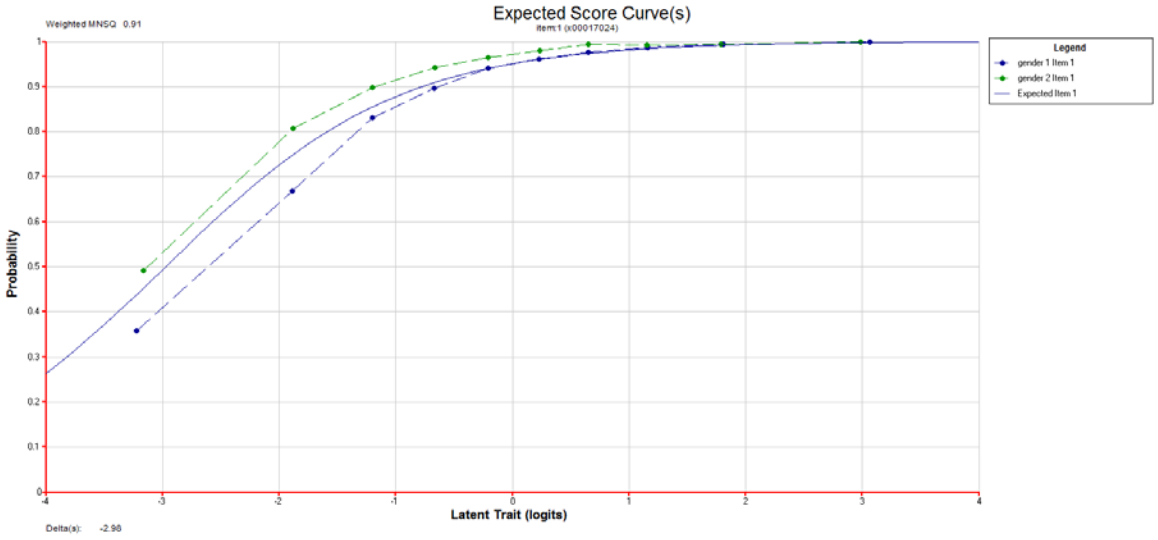
D.P.6.5. Year 5 Spelling

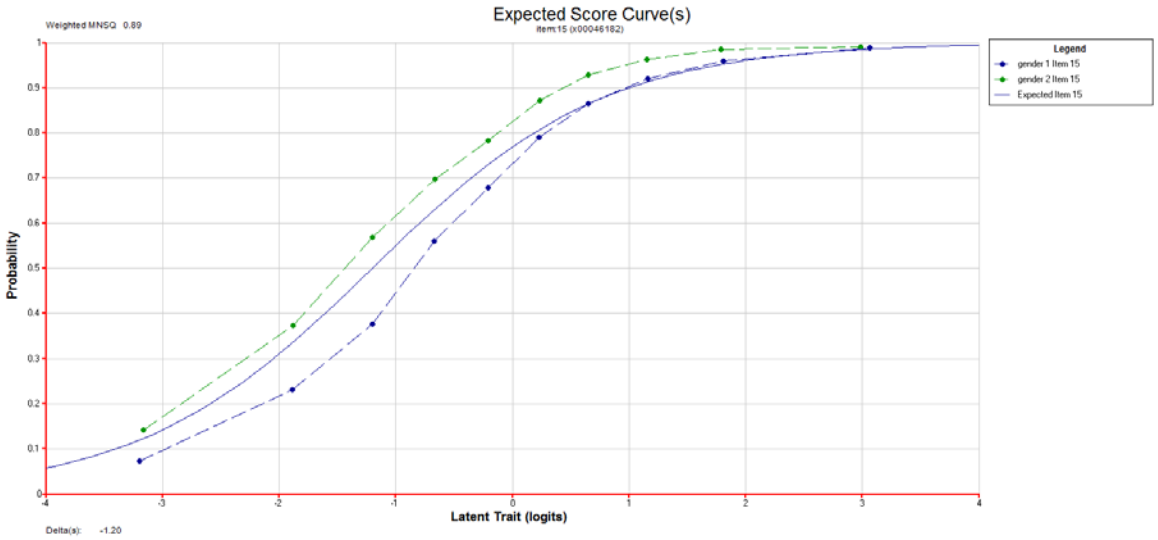


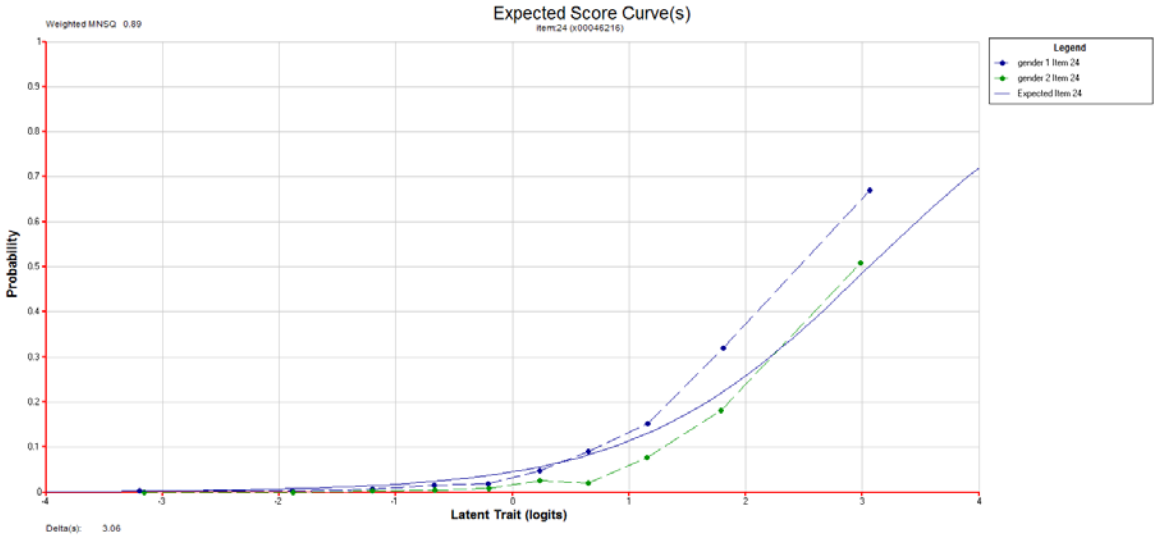




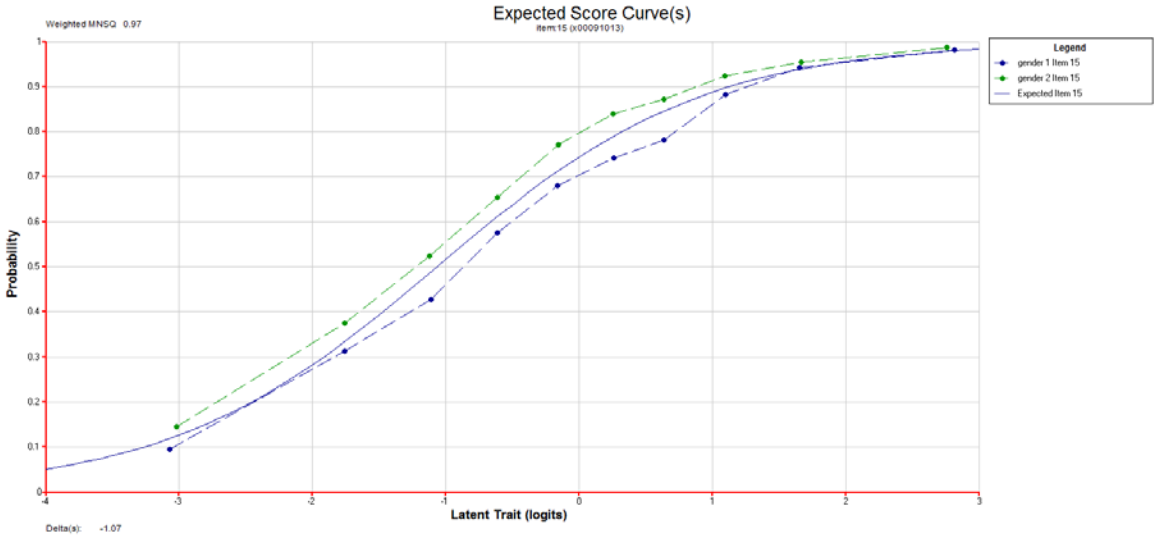
D.P.6.6. Year 7 Spelling

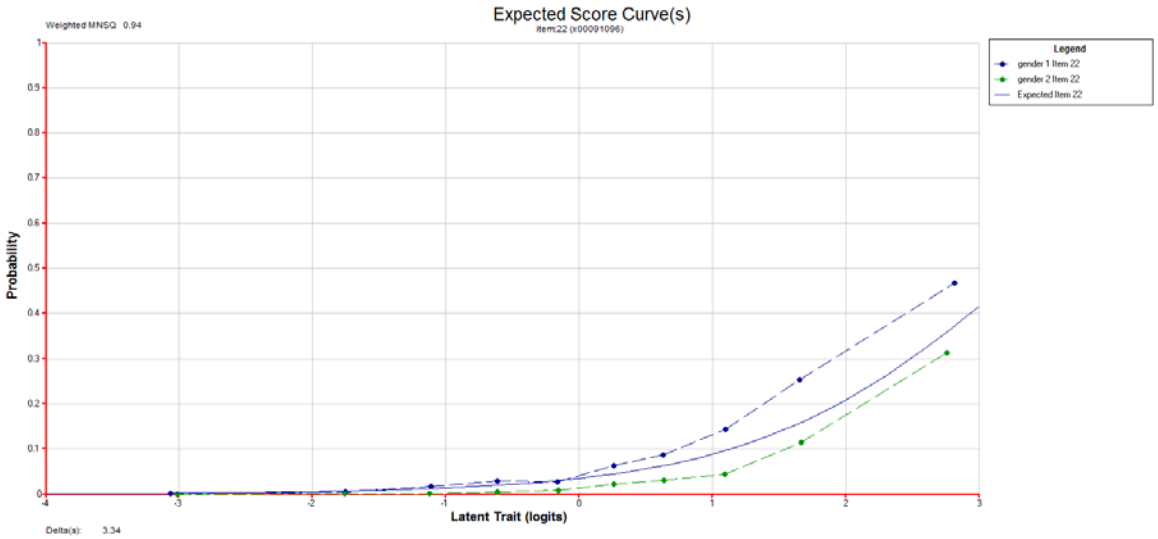


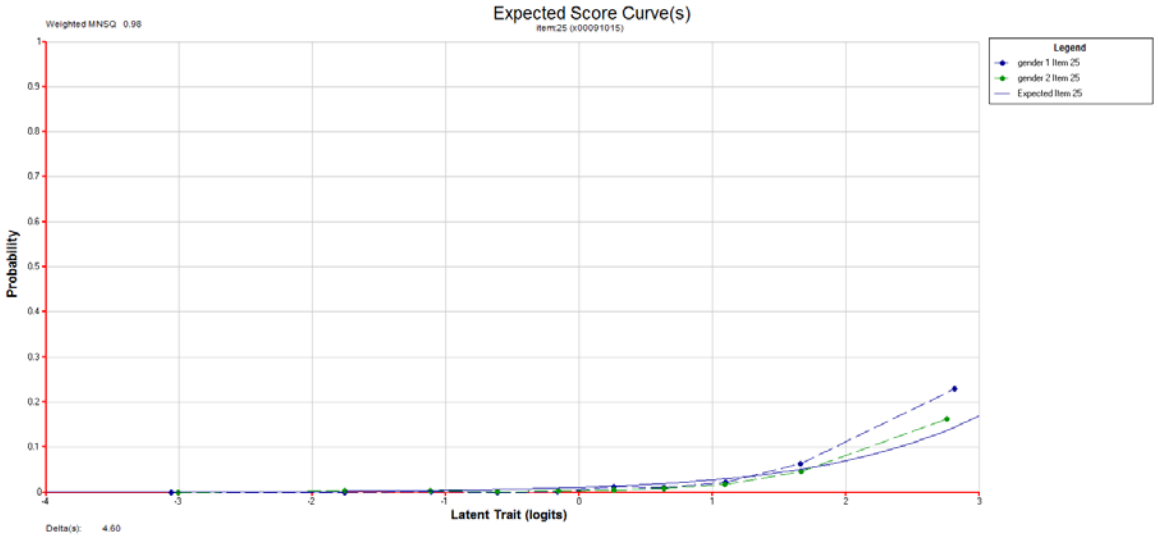




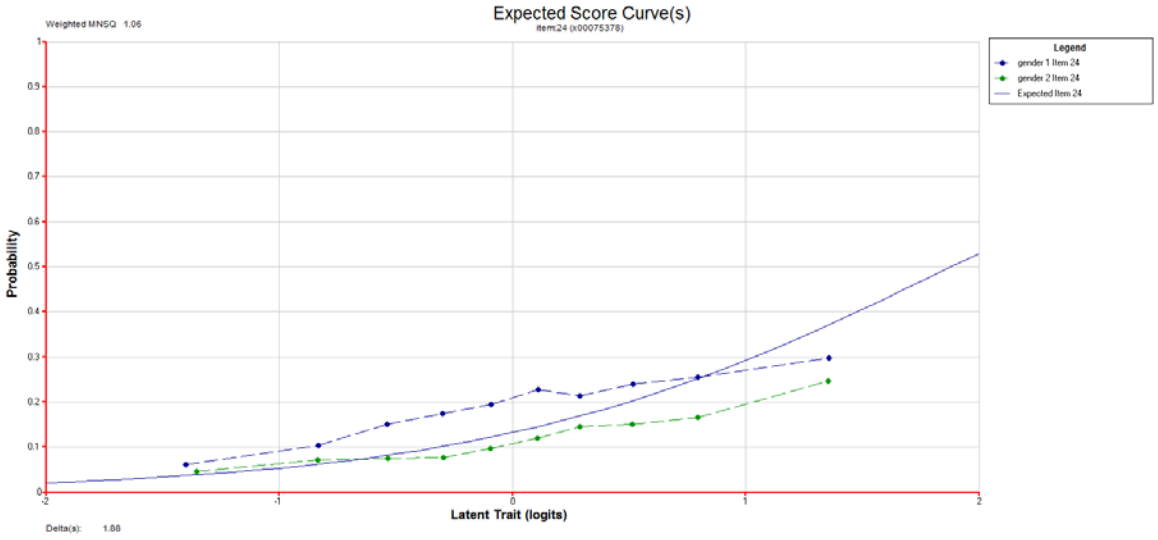
D.P.6.7. Year 9 Spelling





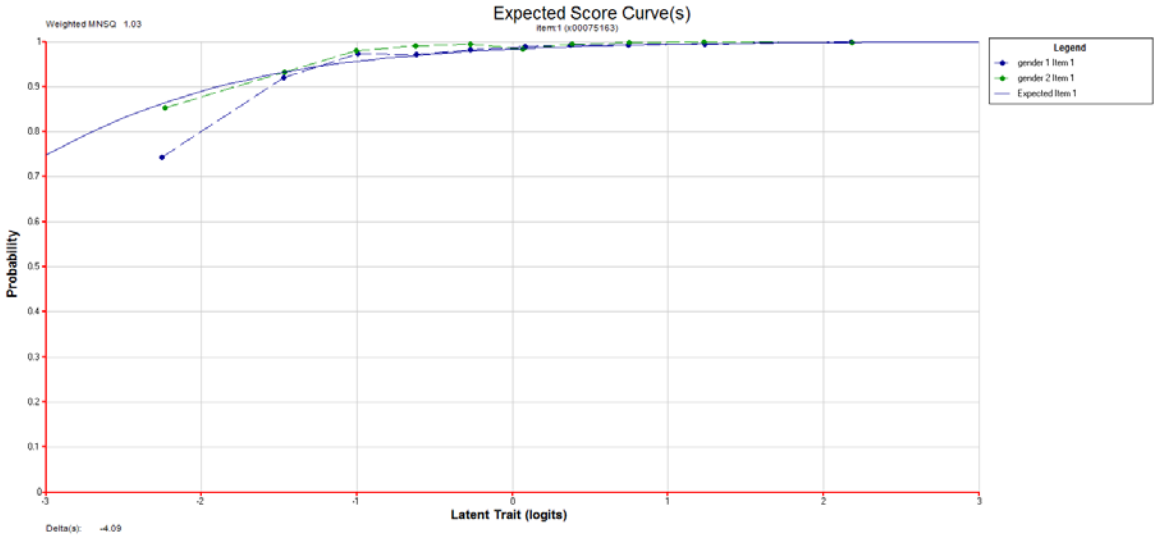


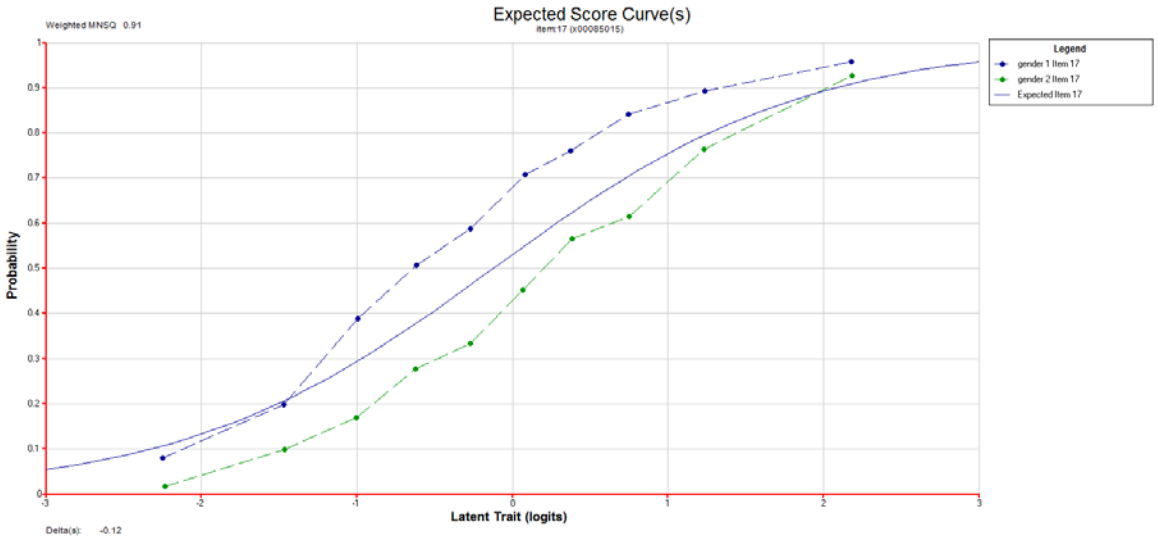
D.P.6.8. Year 9 Grammar and Punctuation[3]



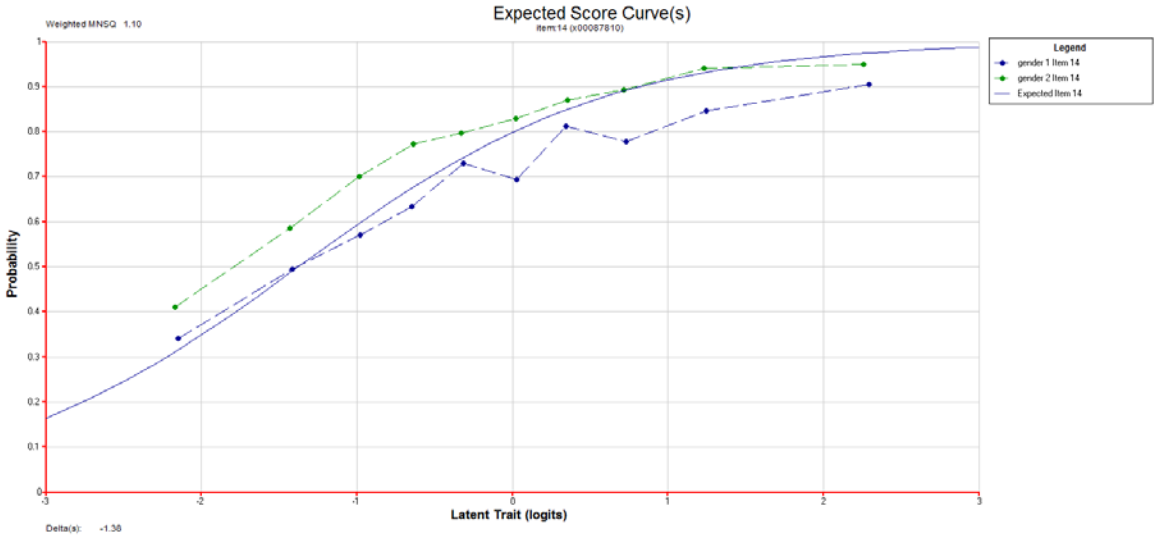
[3] There are no items showing gender DIF in Years 3, 5, and 7 Grammar and Punctuatoin.

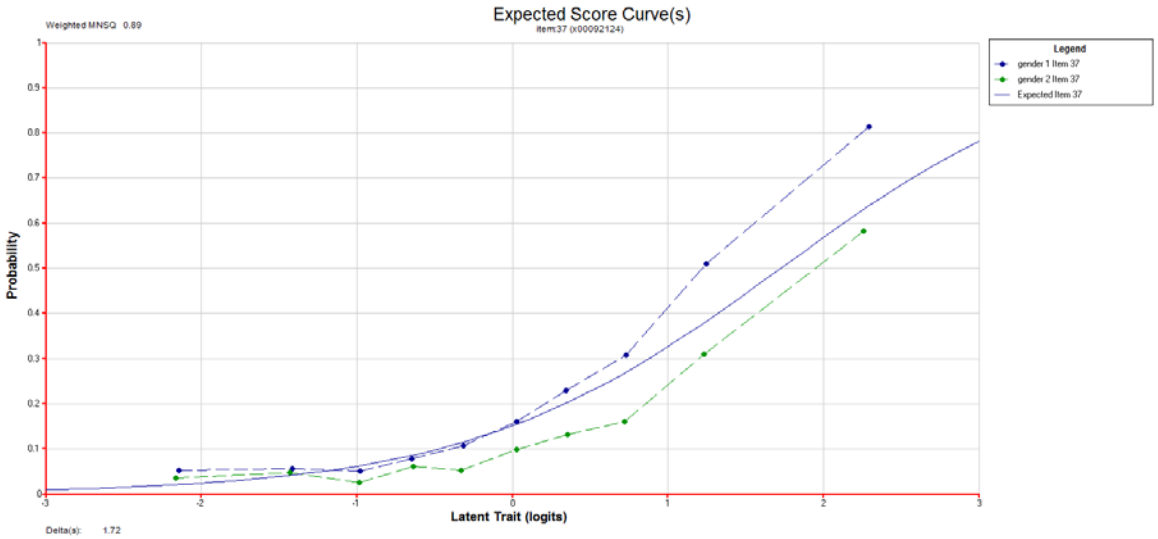
D.P.6.9. Year 3 Numeracy

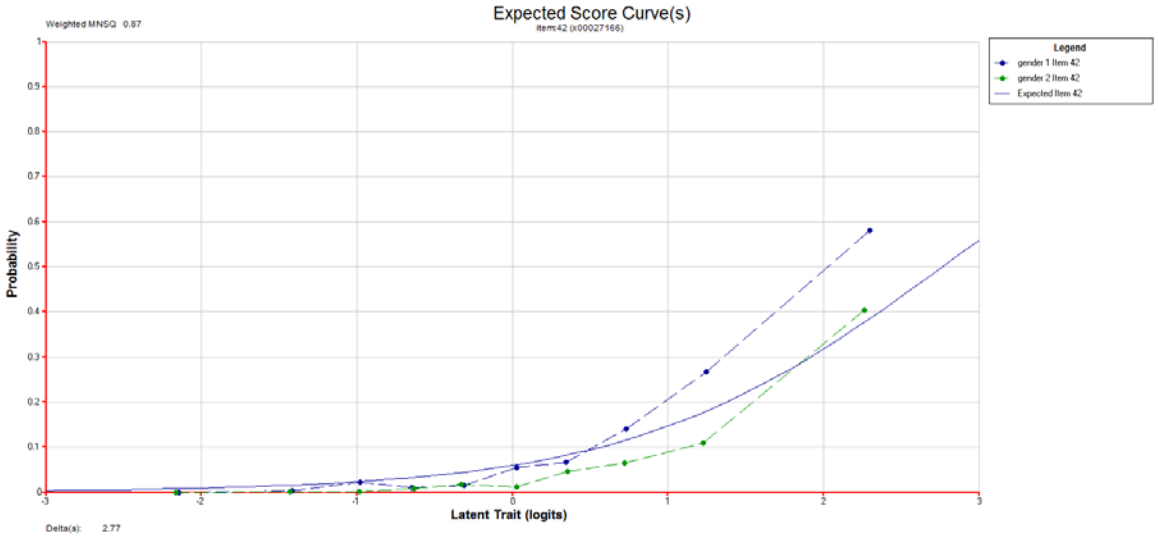




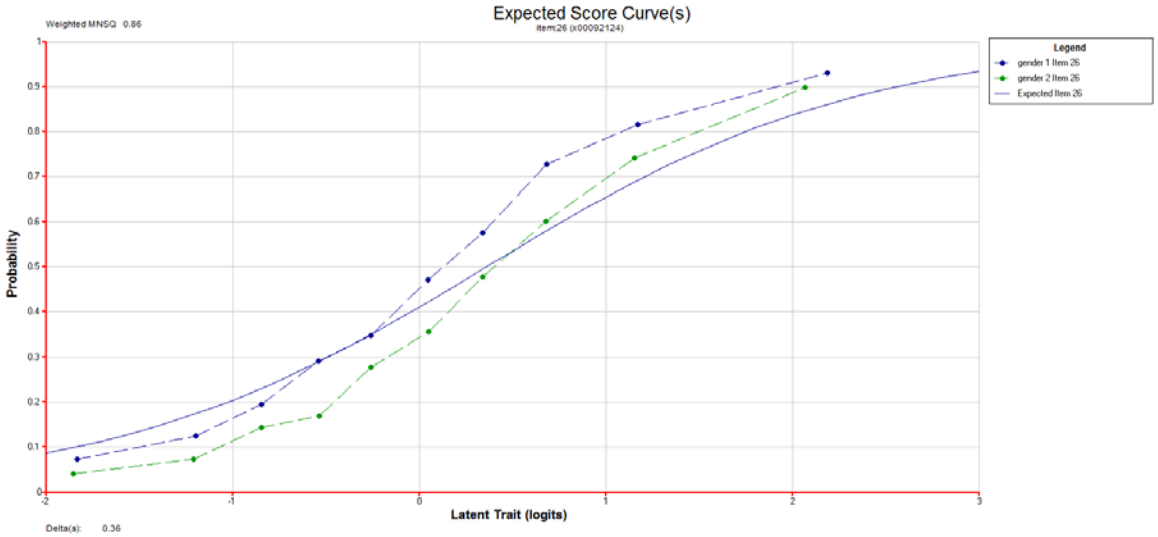
D.P.6.10. Year 5 Numeracy

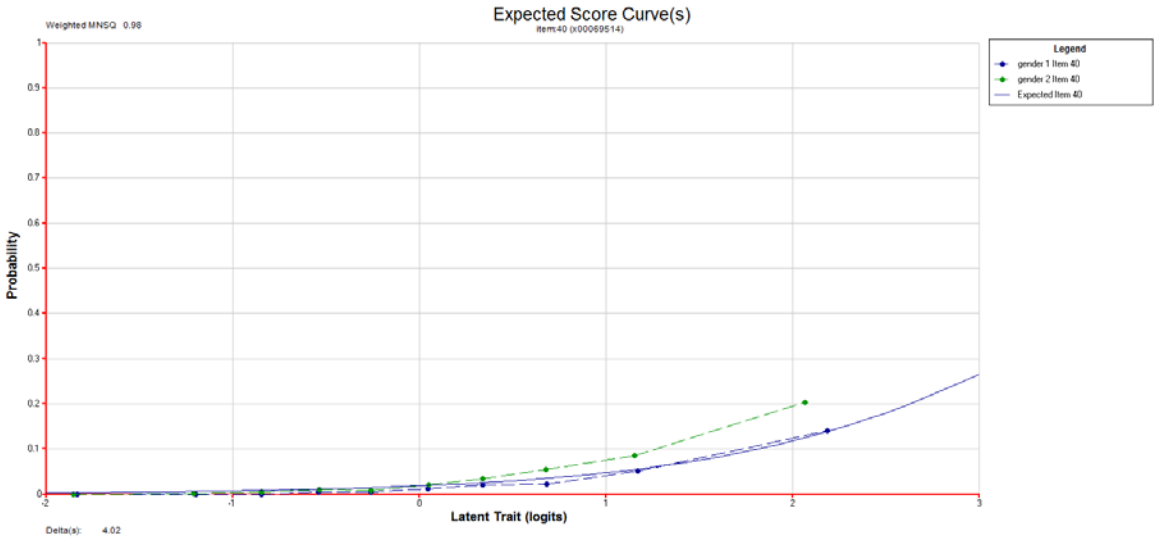




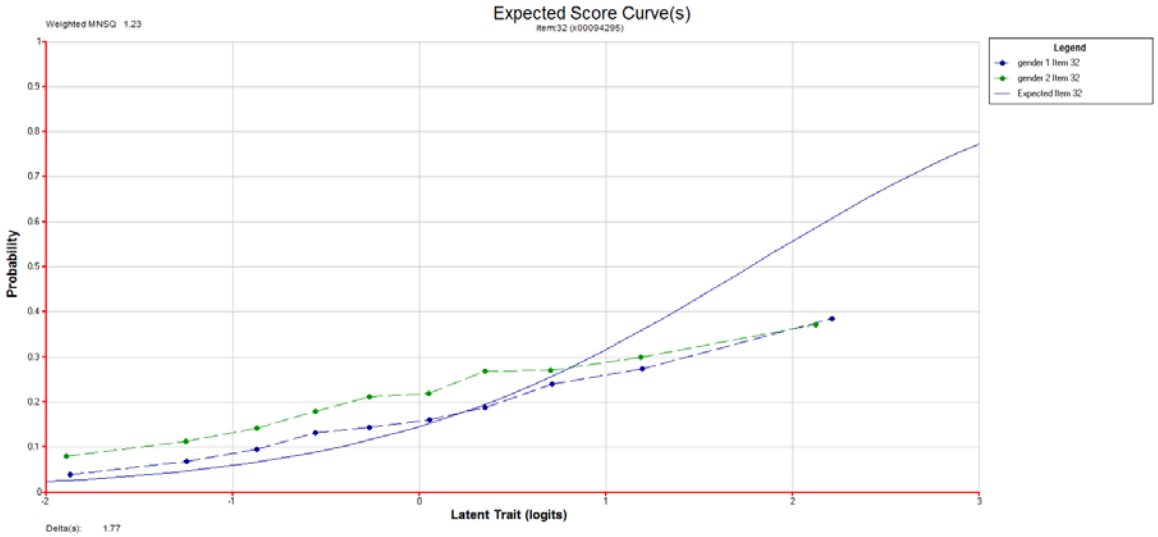


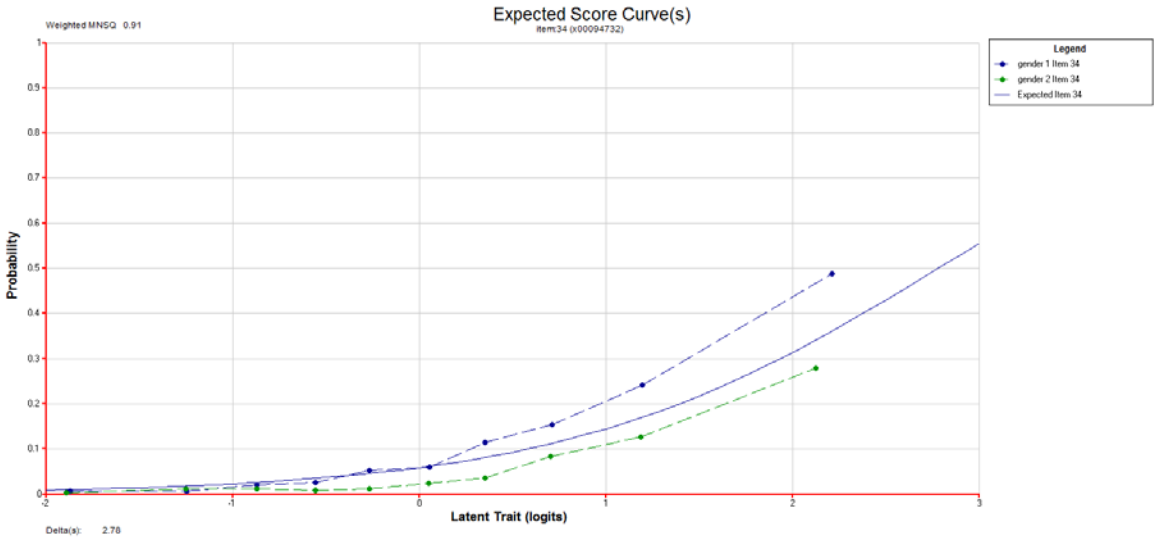
D.P.6.11. Year 7 Numeracy





D.P.6.12. Year 9 Numeracy

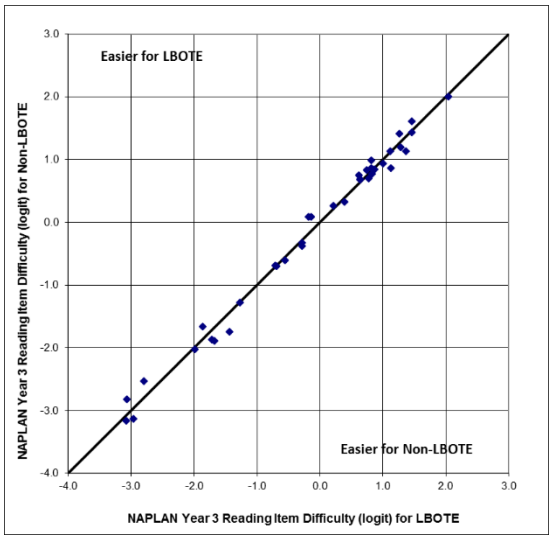




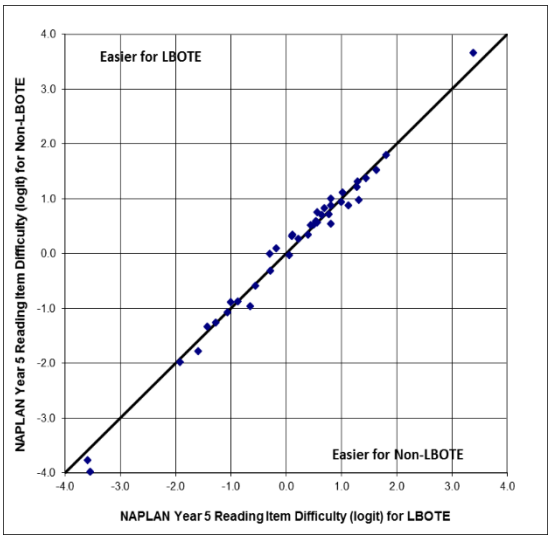
APPENDIX E.P. LBOTE DIF ANALYSIS (PAPER TEST)

E.P.1. Comparison of LBOTE and Non-LBOTE Students in Reading

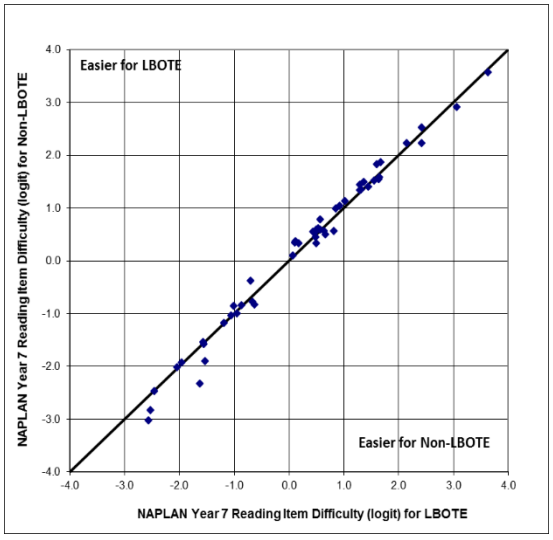
Year 3



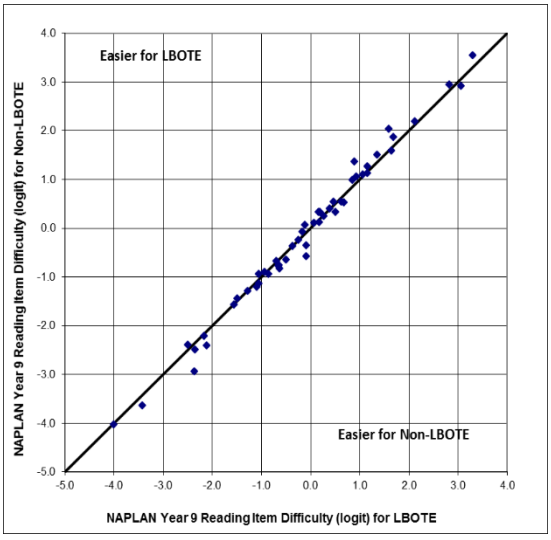
Year 5



Year 7

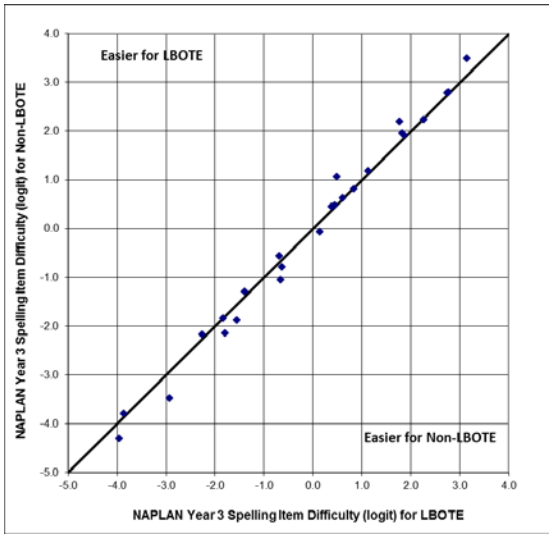


Year 9

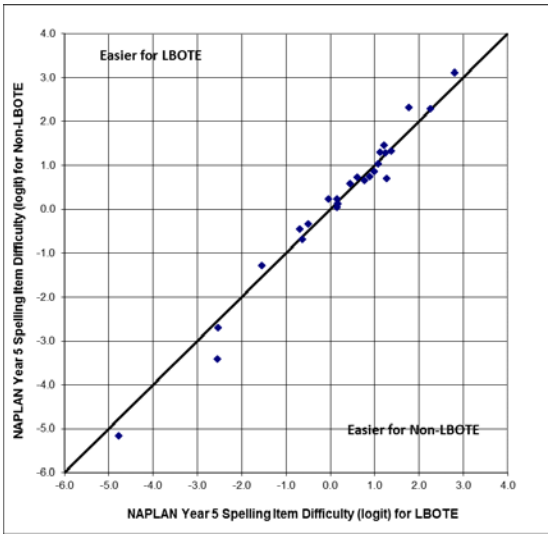


E.P.2. Comparison of LBOTE and Non-LBOTE Students in Spelling

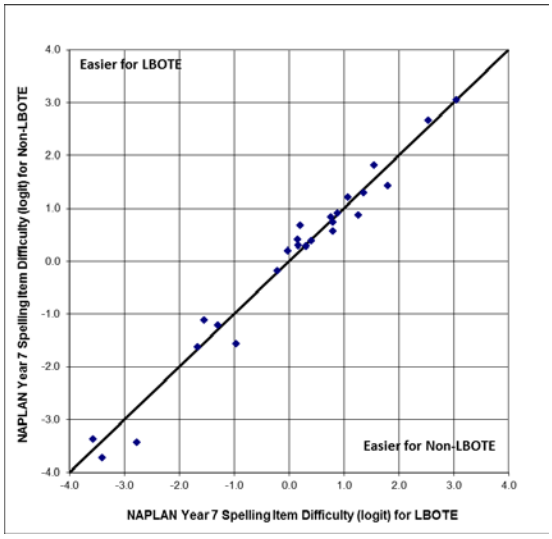
Year 3



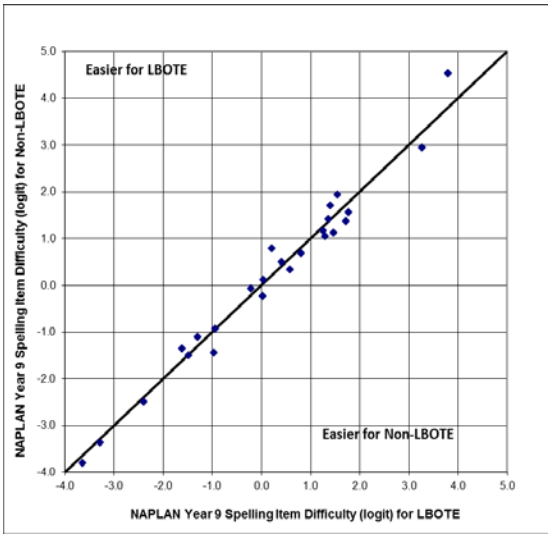
Year 5



Year 7

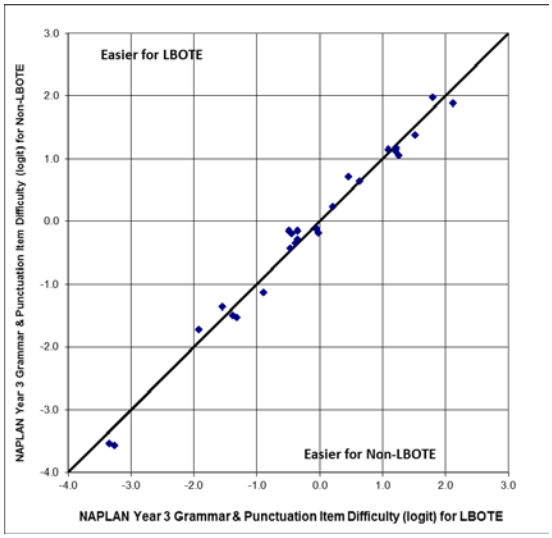


Year 9

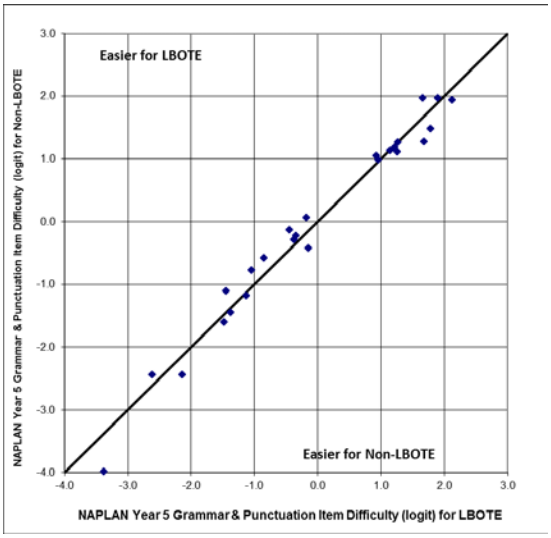


E.P.3. Comparison of LBOTE and Non-LBOTE Students in Grammar and Punctuation

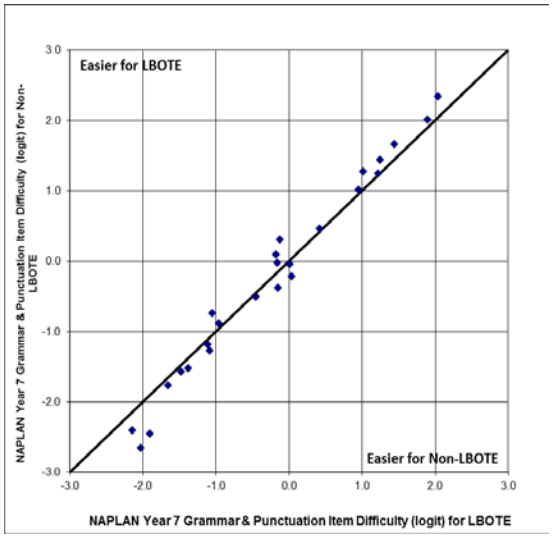
Year 3



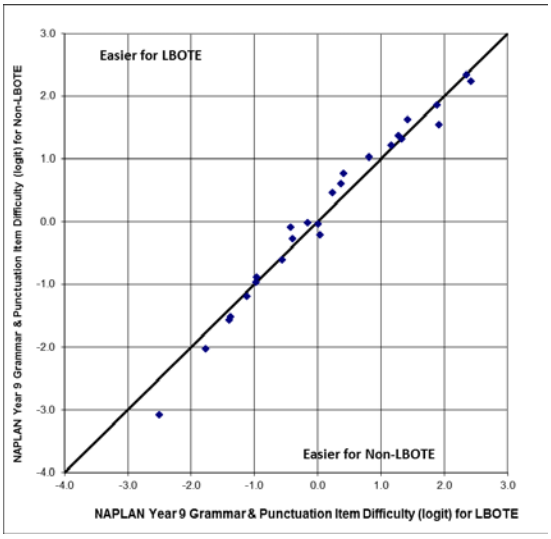
Year 5



Year 7

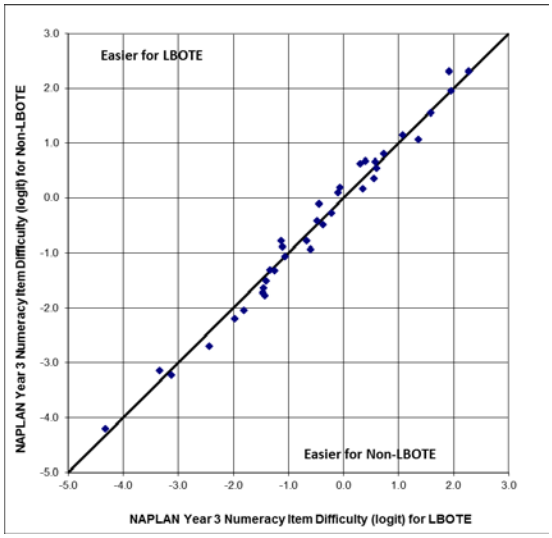


Year 9

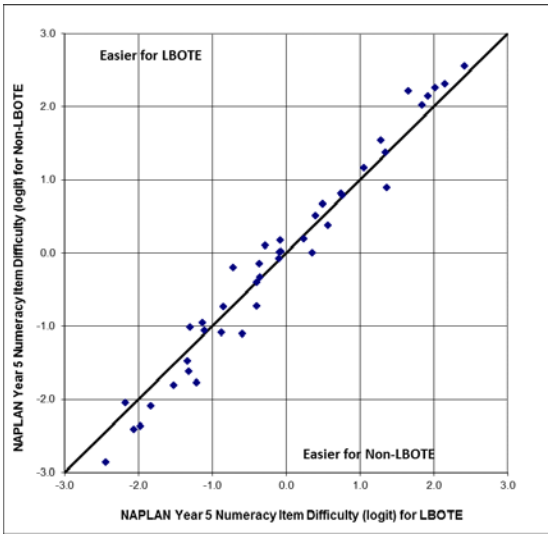


E.P.4. Comparison of LBOTE and Non-LBOTE Students in Numeracy

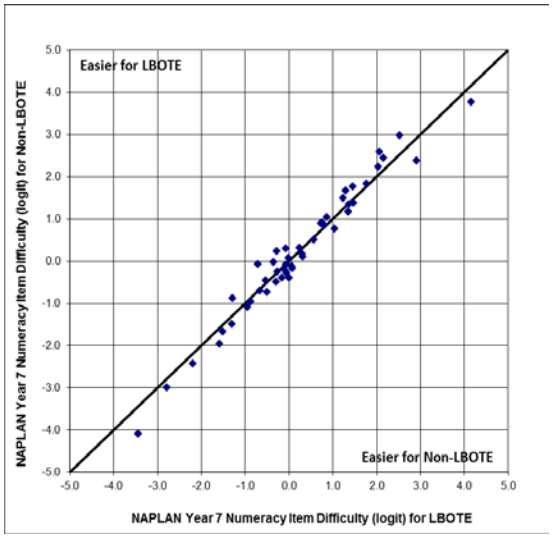
Year 3



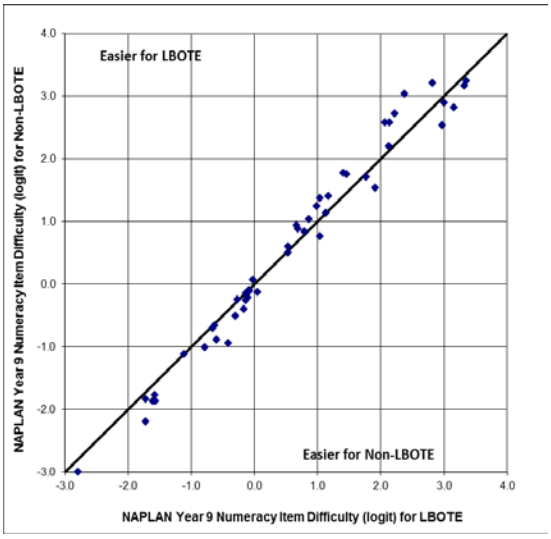
Year 5



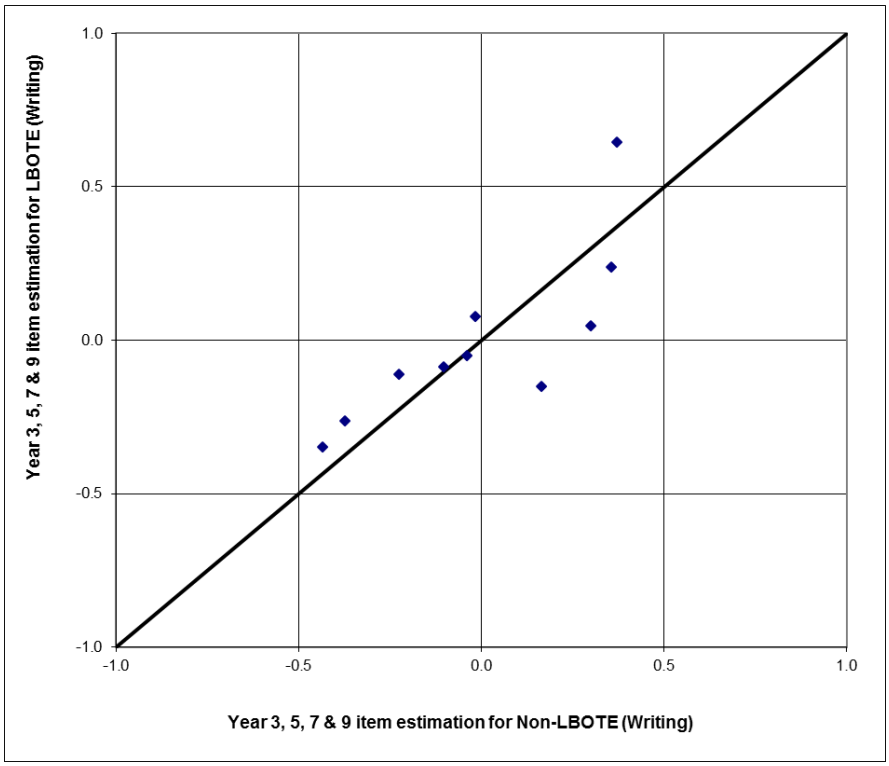
Year 7



Year 9

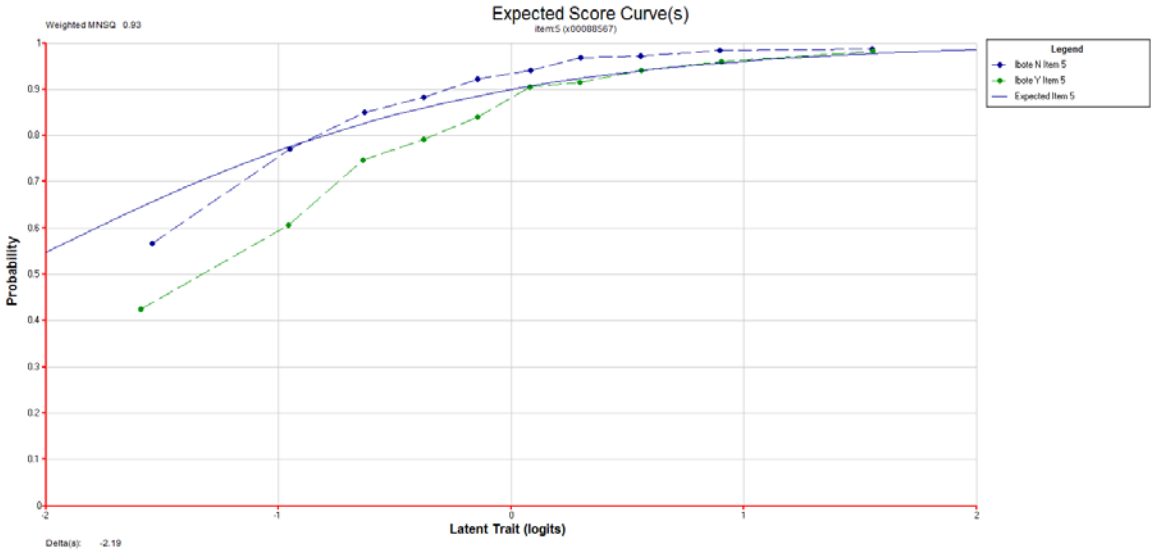


E.P.5. Comparison of LBOTE and Non-LBOTE Students in Writing

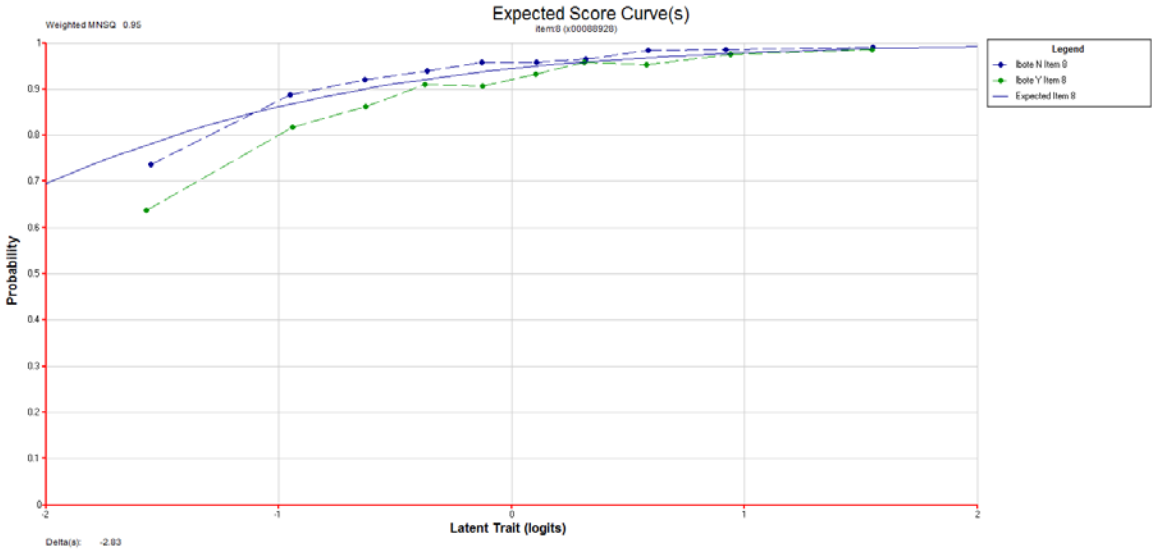


E.P.6 Item DIF Plots for Items Showing LBOTE DIF[4]

E.P.6.1. Year 7 Reading[5]

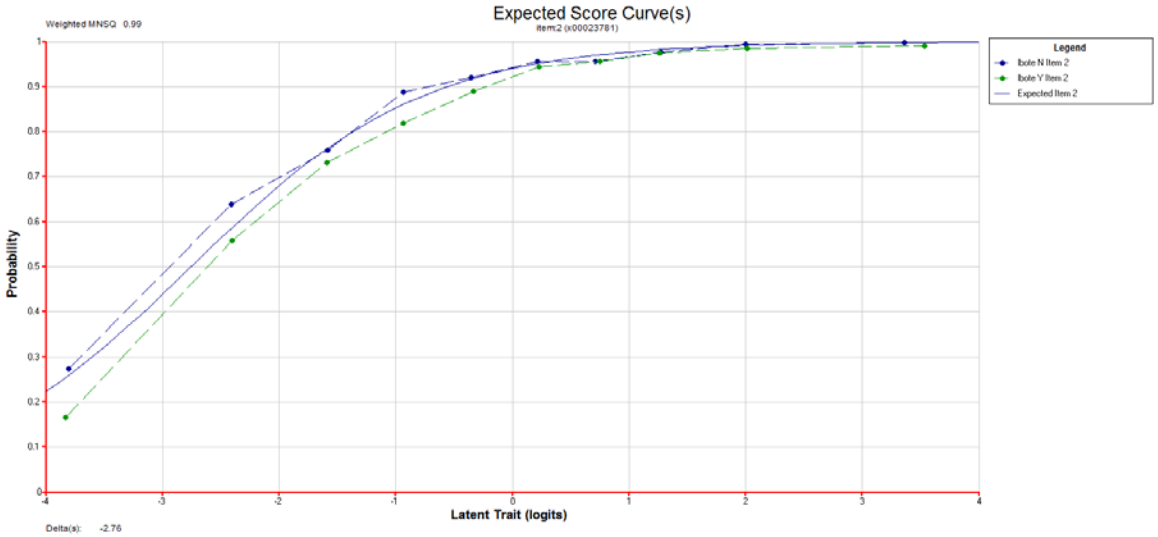


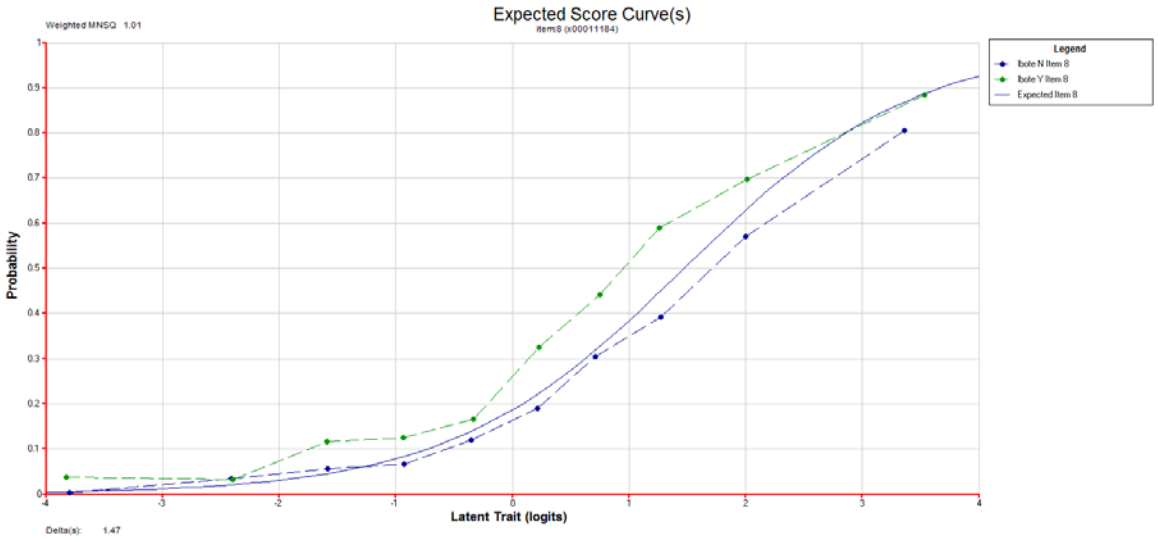
G.P.6.2. Year 9 Reading



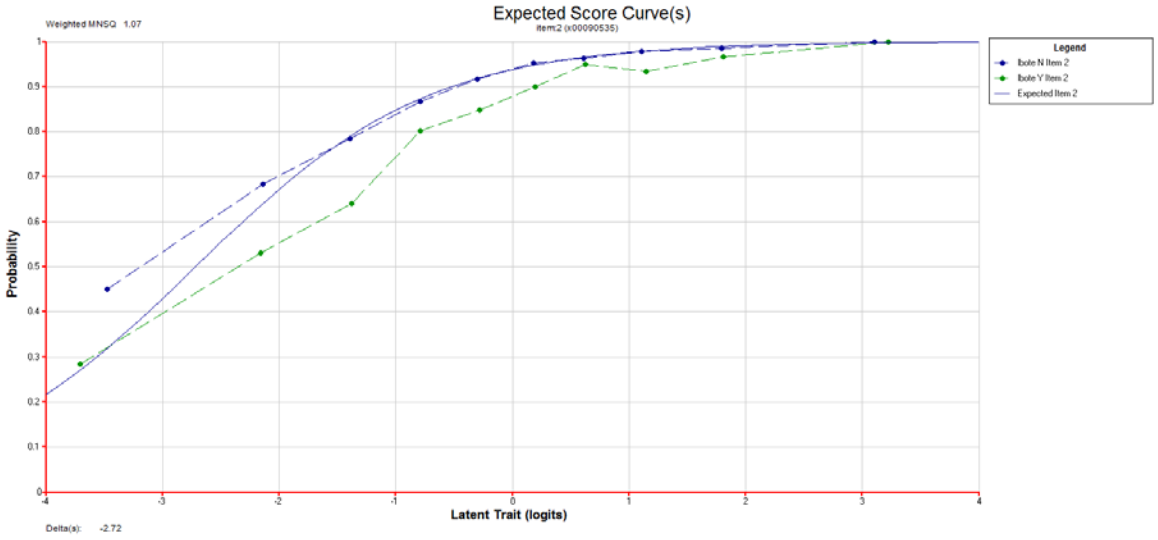
[4] 'lbote N' indicates 'Non-LBOTE group' and 'lbote Y' indicates 'LBOTE group'.
[5] There are no items showing LBOTE DIF in Years 3 and 5 Reading.

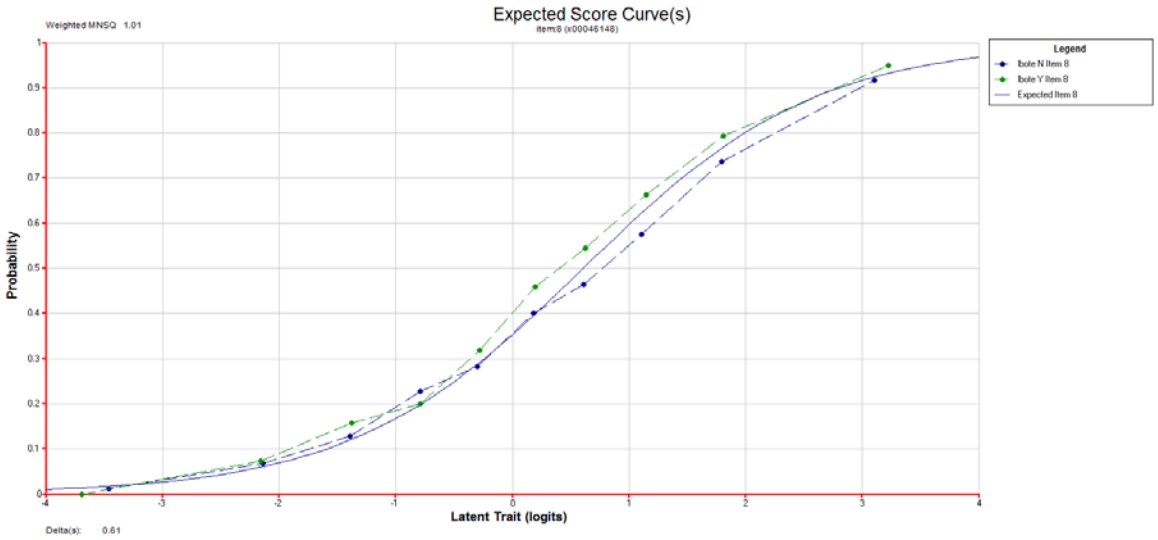
E.P.6.3. Year 3 Spelling

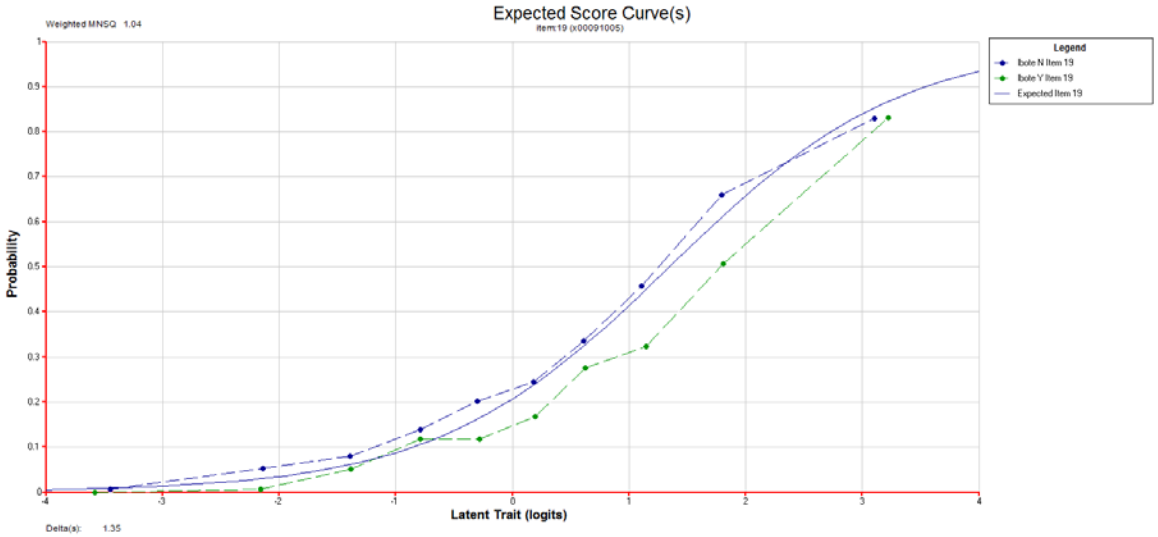




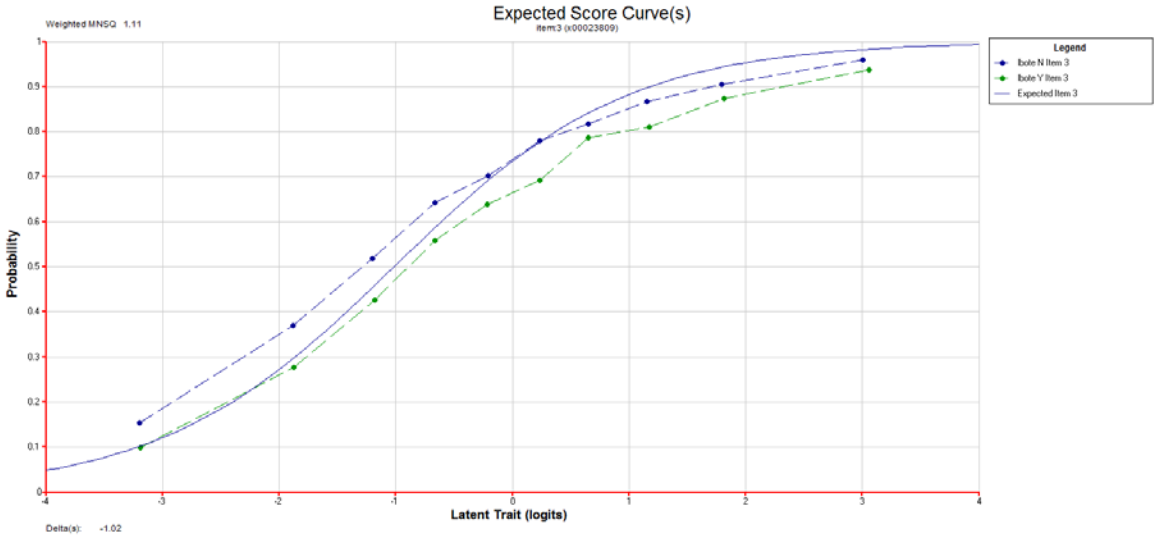
E.P.6.4. Year 5 Spelling

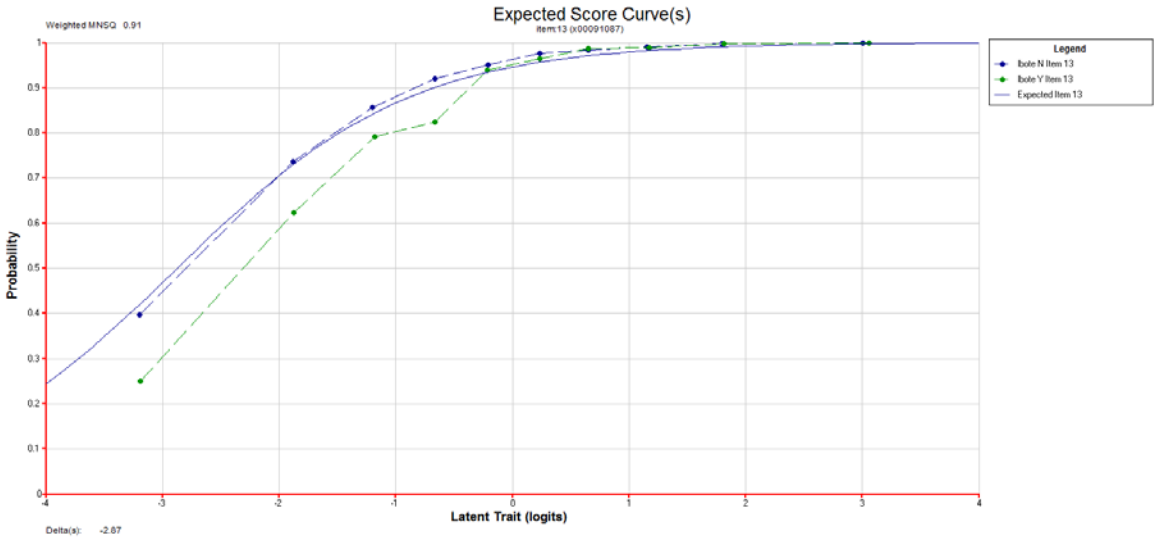




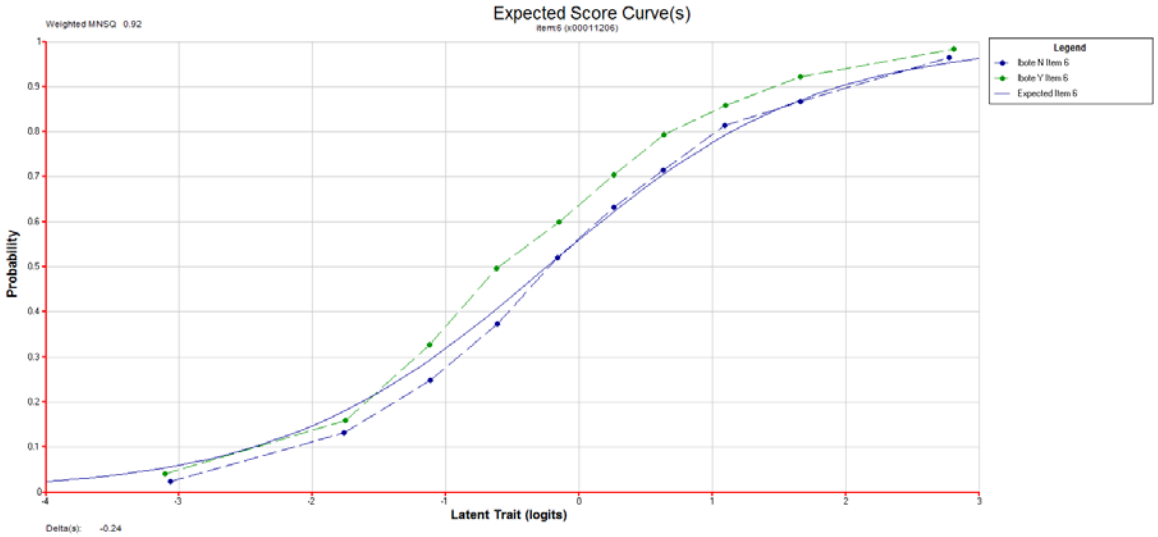


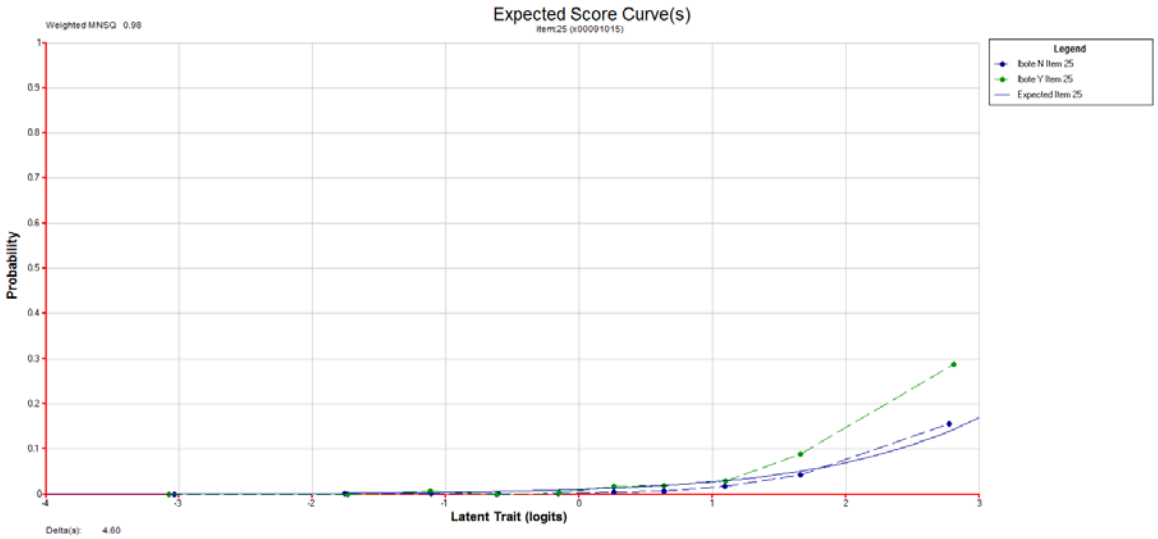
E.P.6.5. Year 7 Spelling



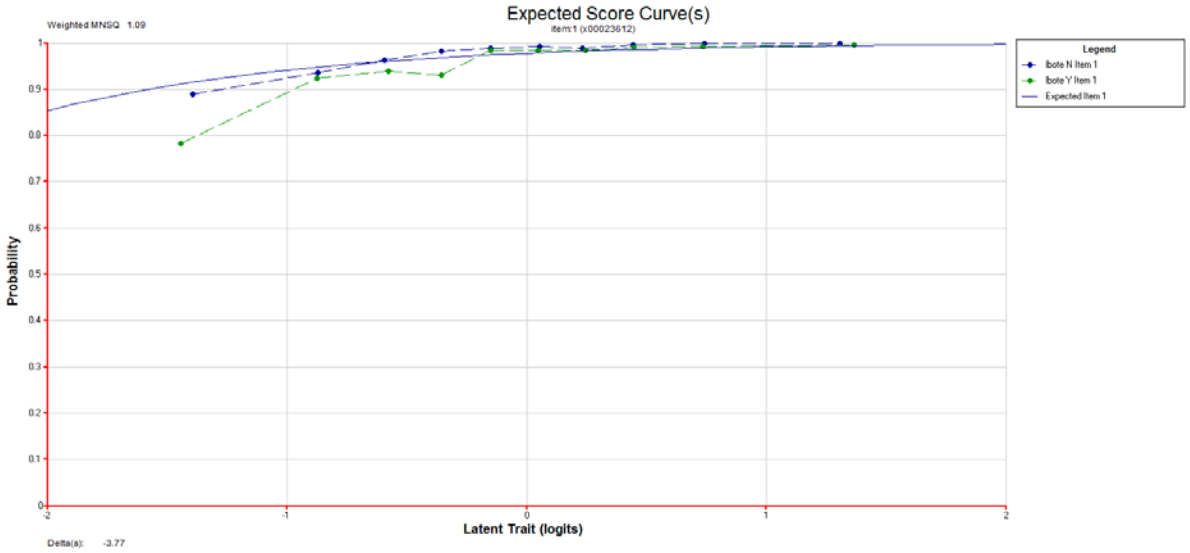


E.P.6.6. Year 9 Spelling



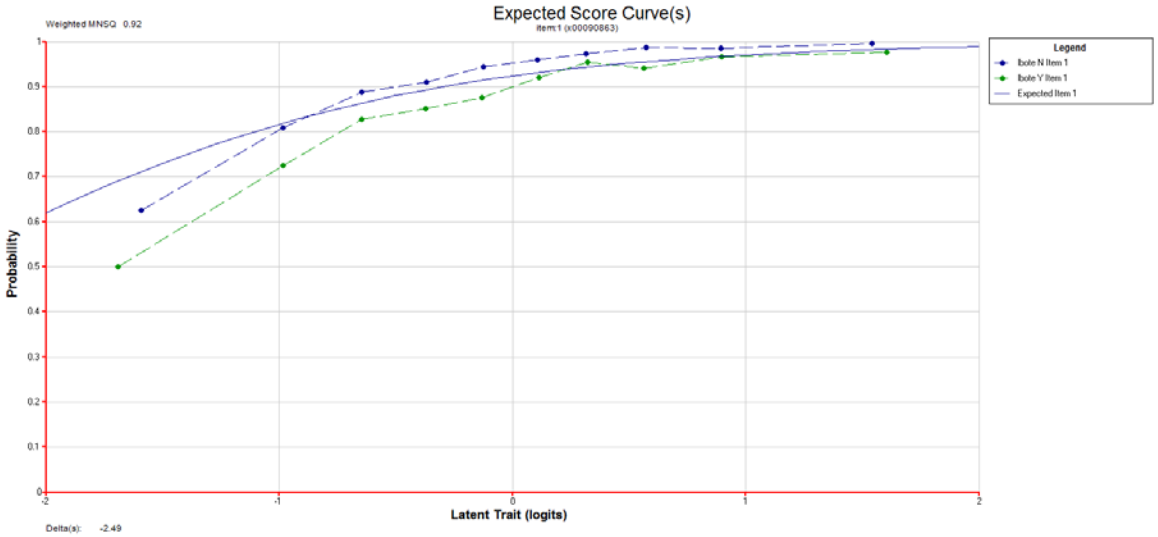


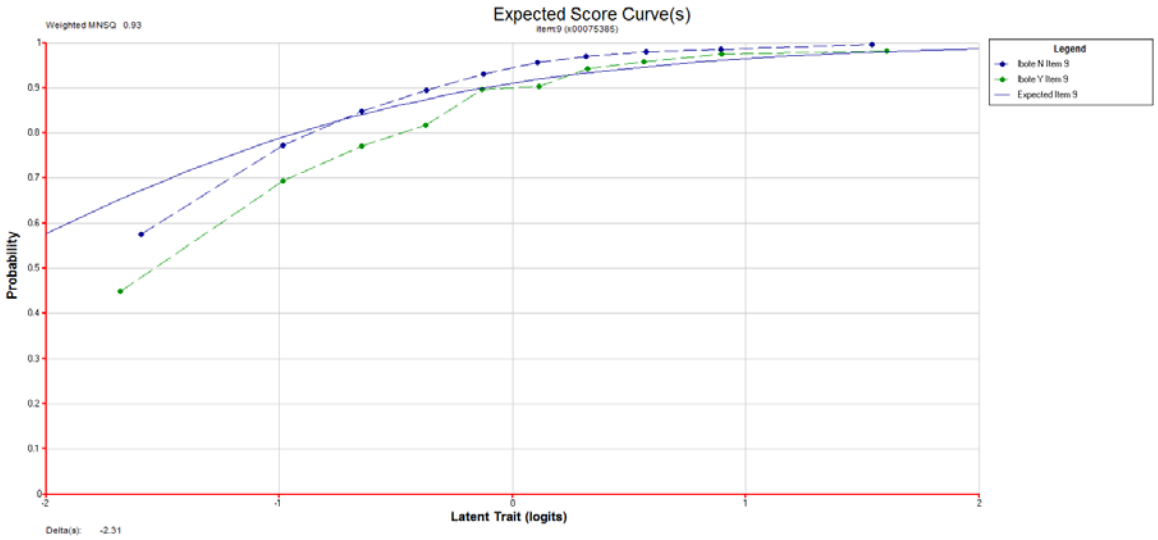
E.P.6.7. Year 5 Grammar and Punctuation[6]



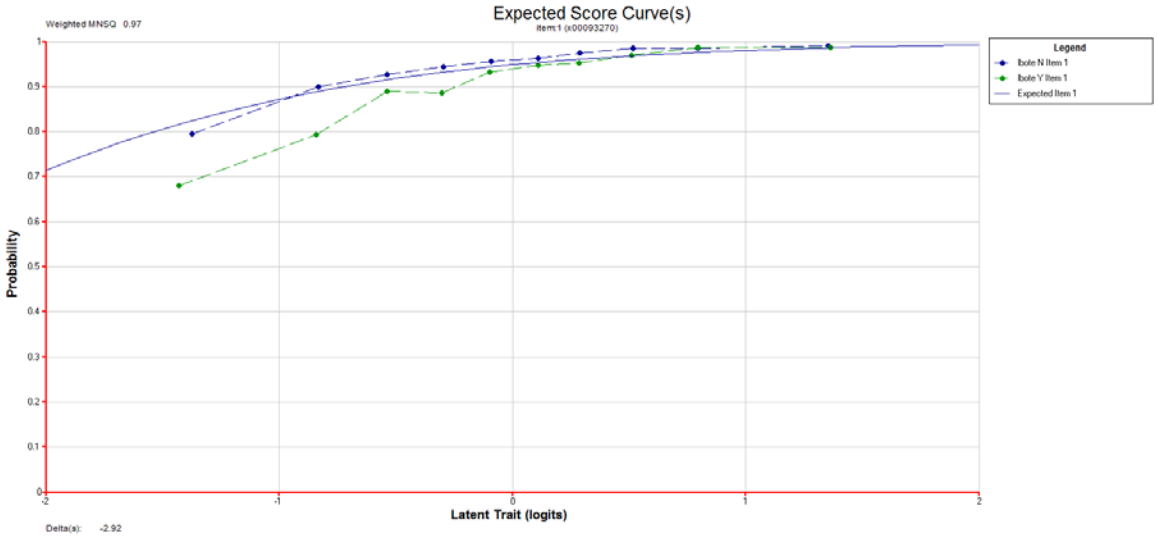
[6] There's no item showing LBOTE DIF in Year 3 Grammar and Punctuation.

E.P.6.8. Year 7 Grammar and Punctuation

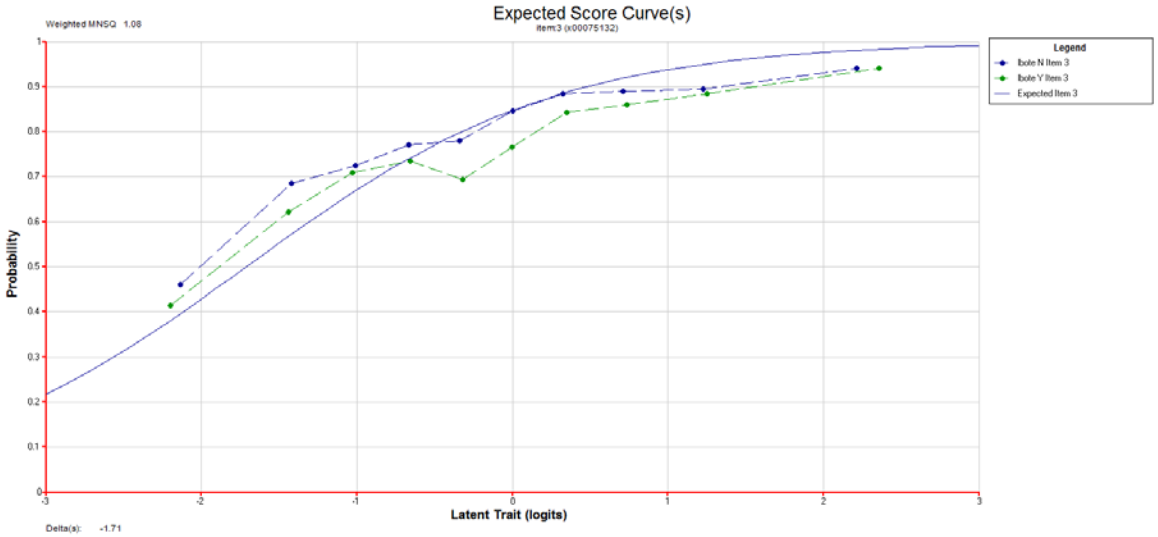


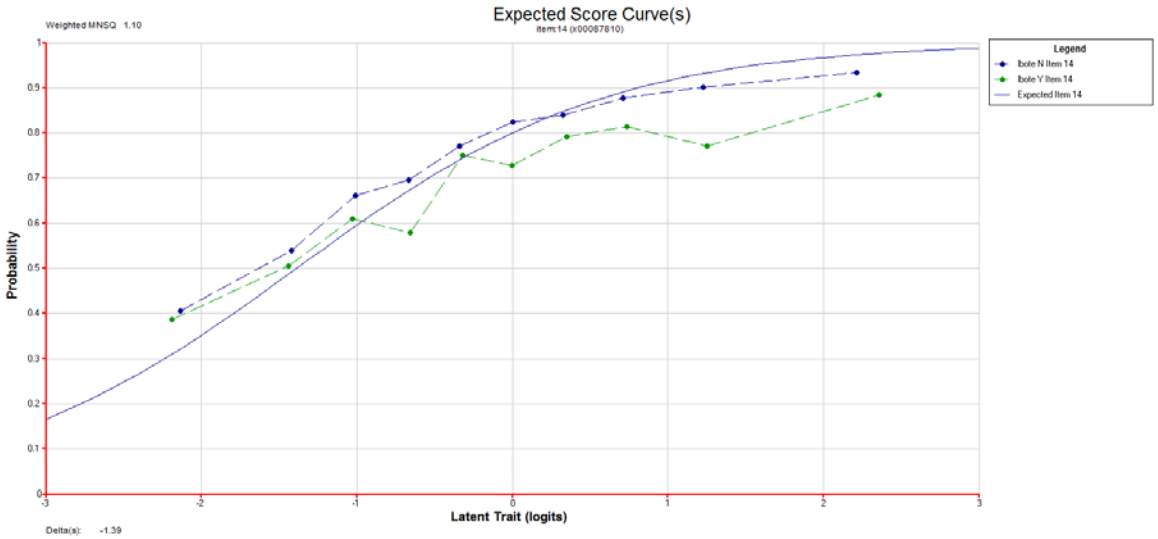


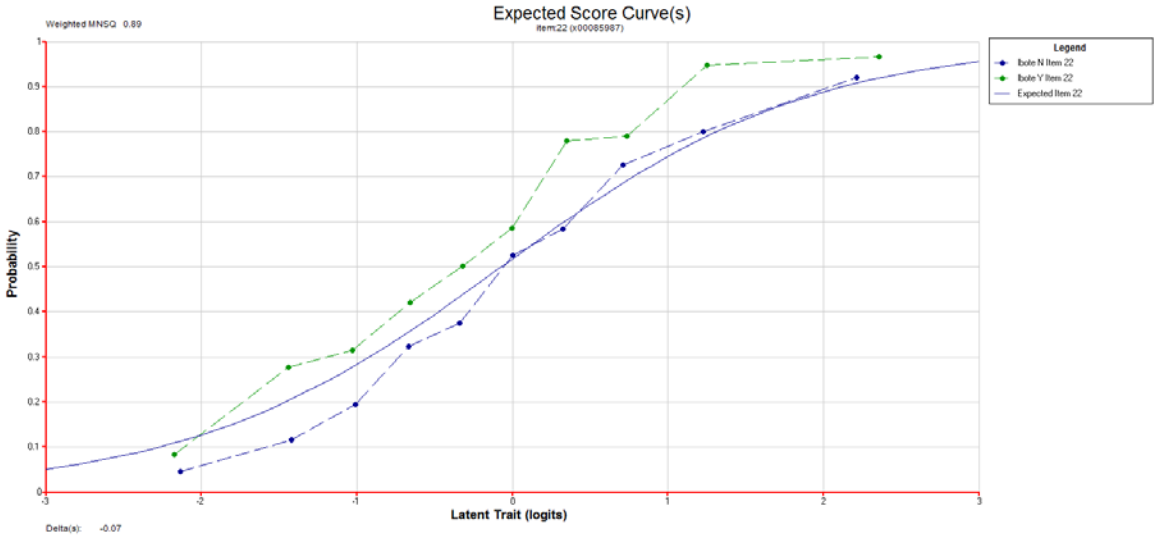
E.P.6.9. Year 9 Grammar and Punctuation



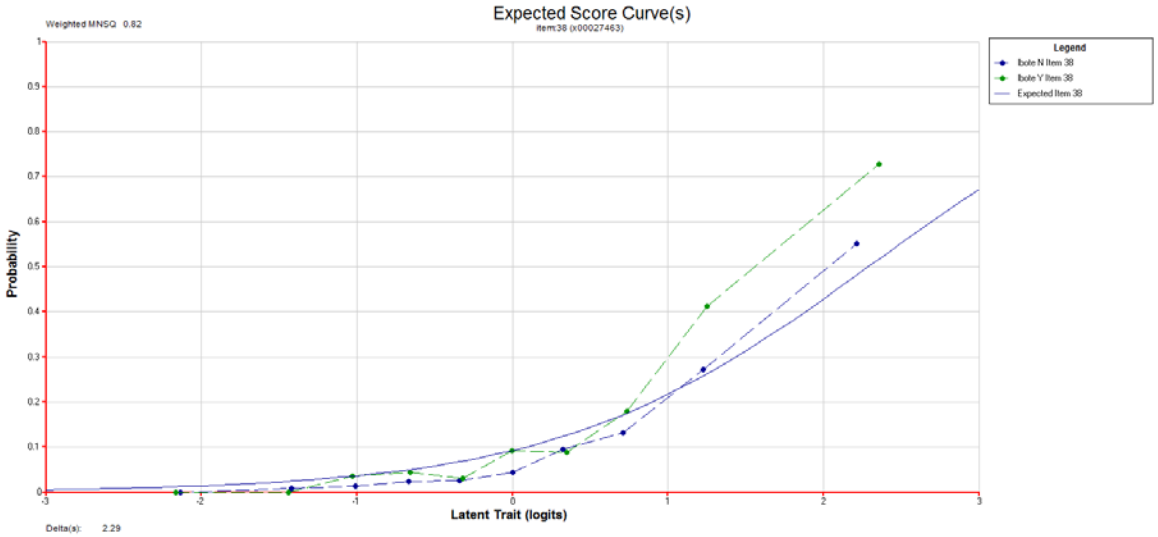
E.P.6.10. Year 5 Numeracy[7]



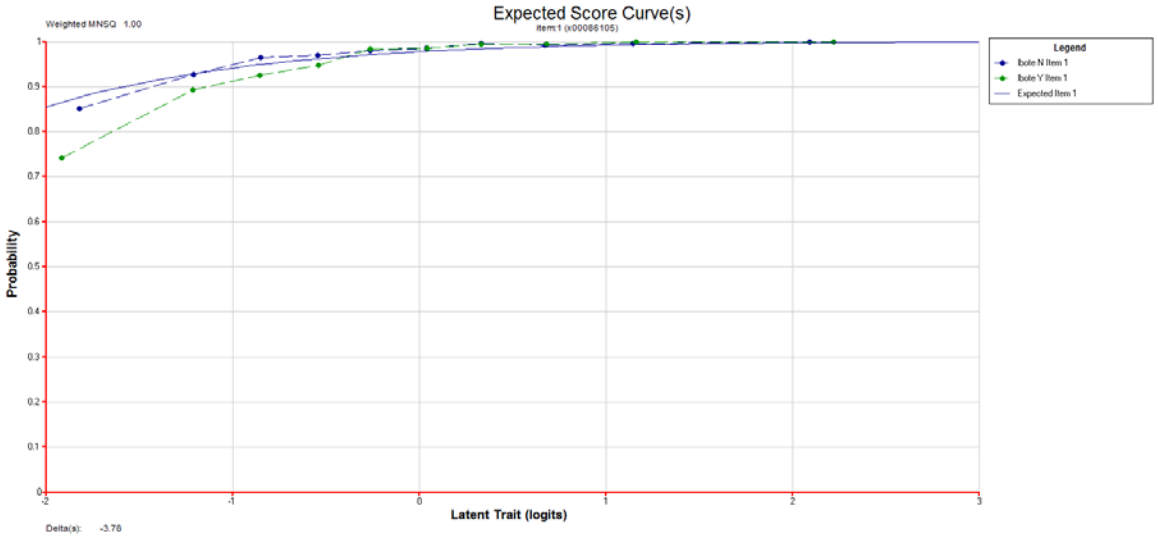


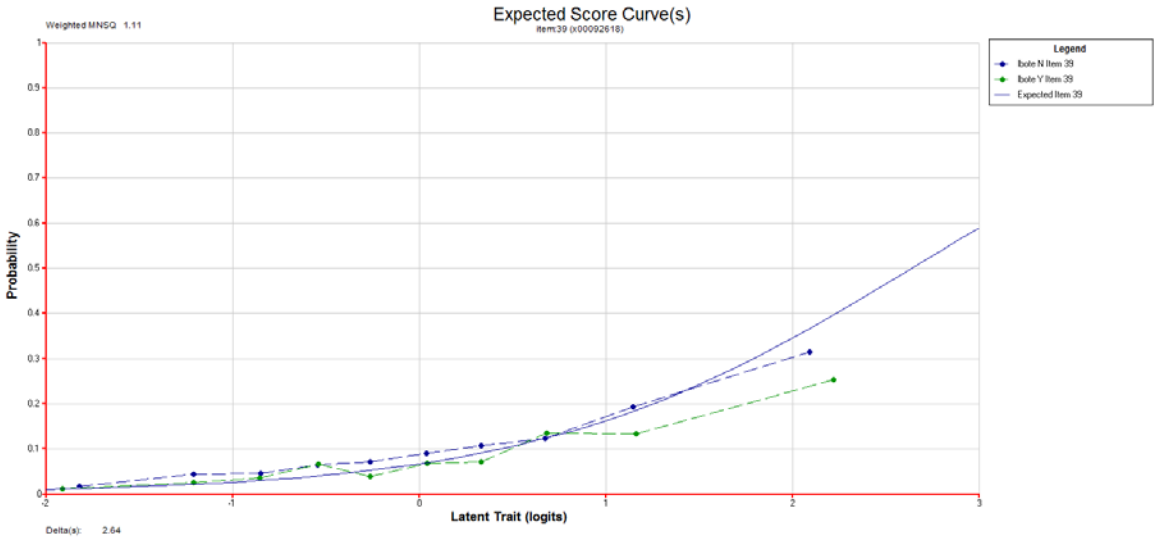


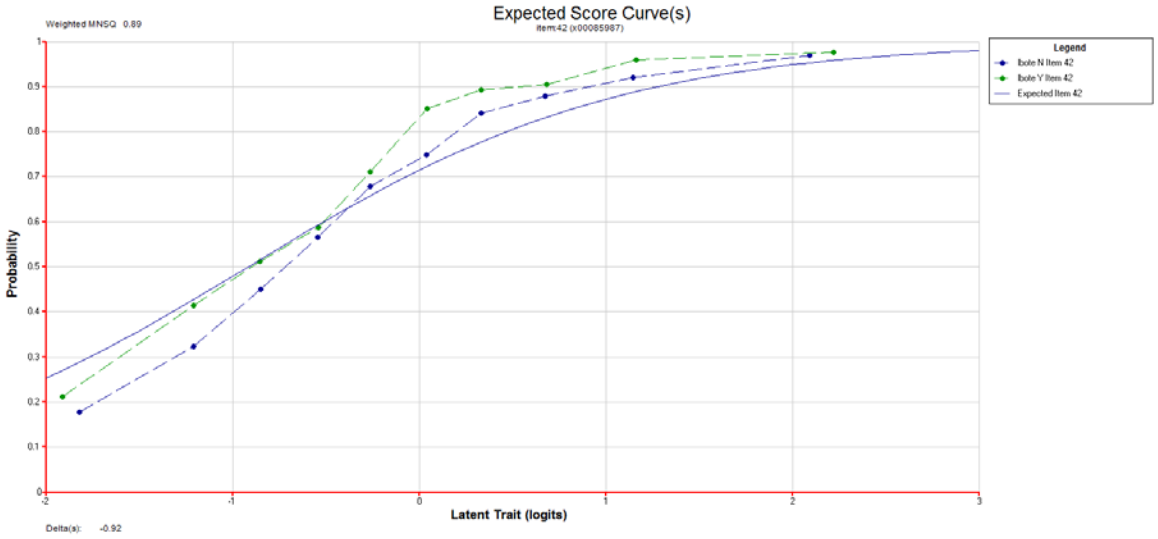
[7] There's no item showing LBOTE DIF in Year 3 Numeracy.

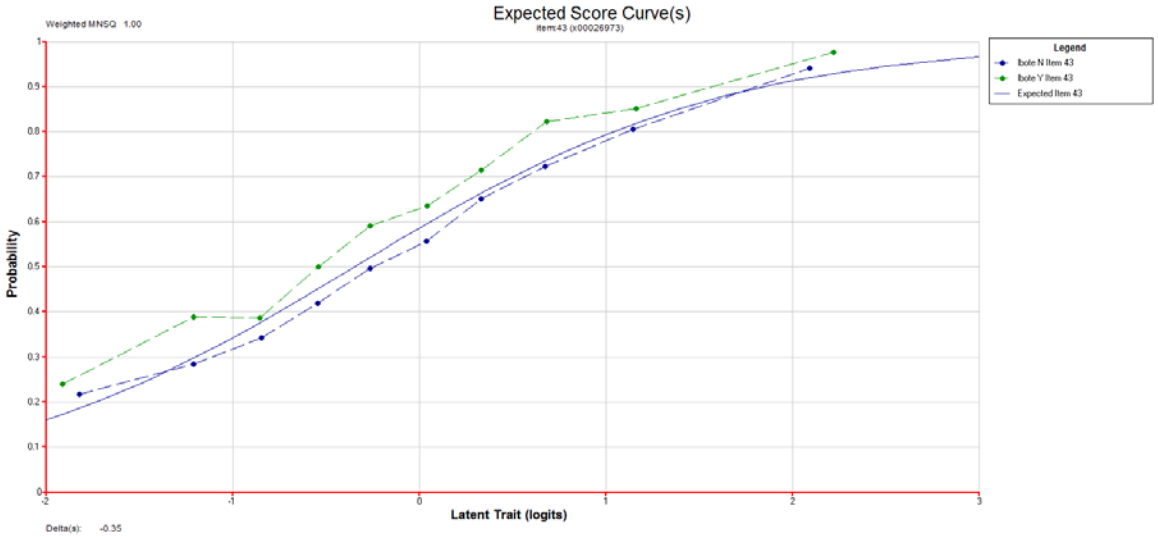

Expected Score Curve(s)
Item:38 (x00027463)
Weighted MNSQ 0.82
Probability
Latent Trait (logits)
Legend
Ibole N Item 38
Ibole Y Item 38
Expected Item 38
Delta(s): 2.29

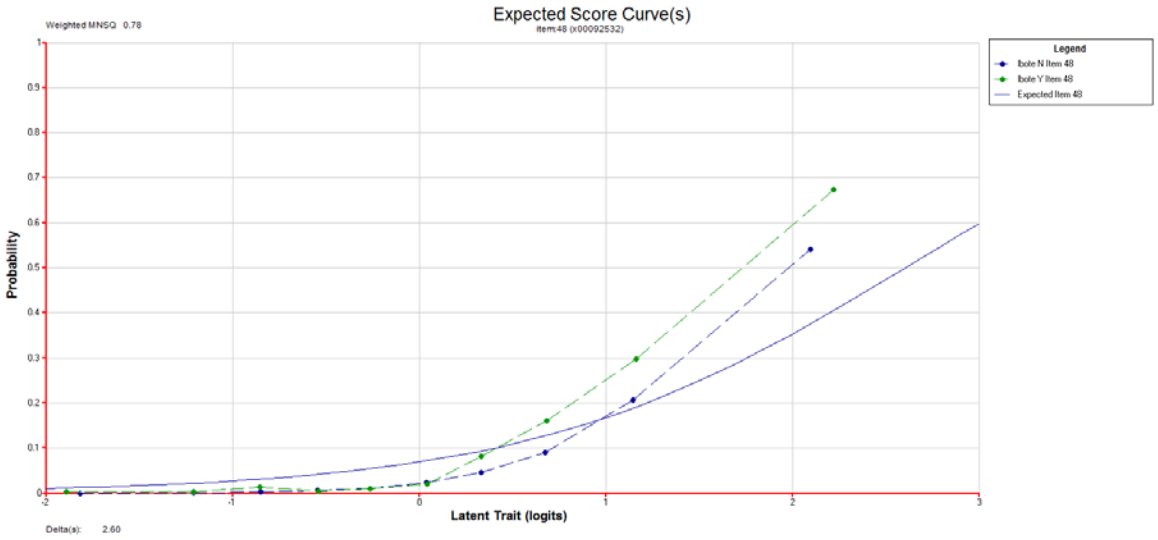
E.P.6.11. Year 7 Numeracy



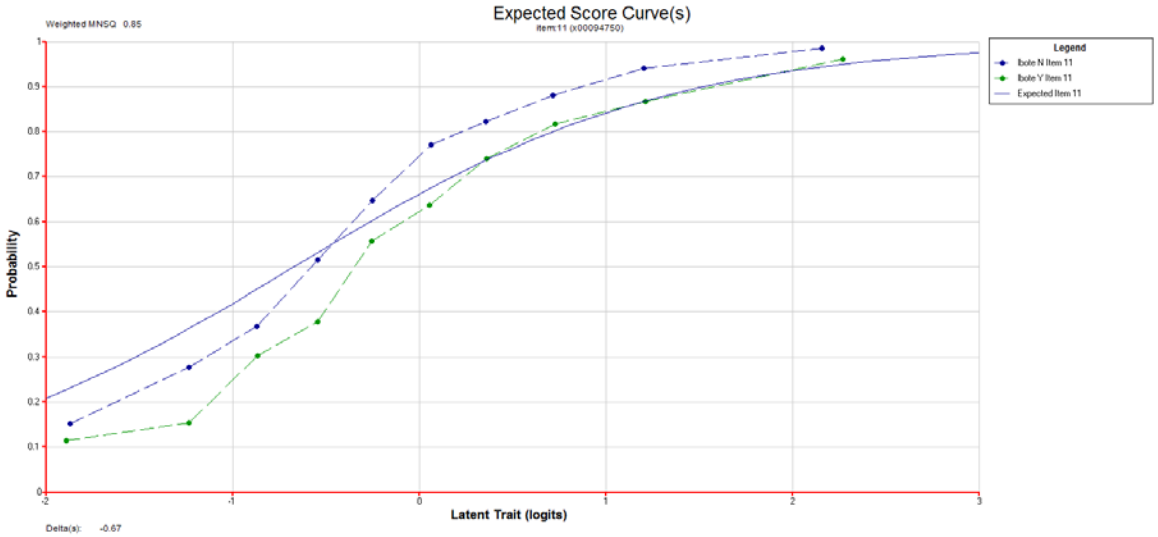


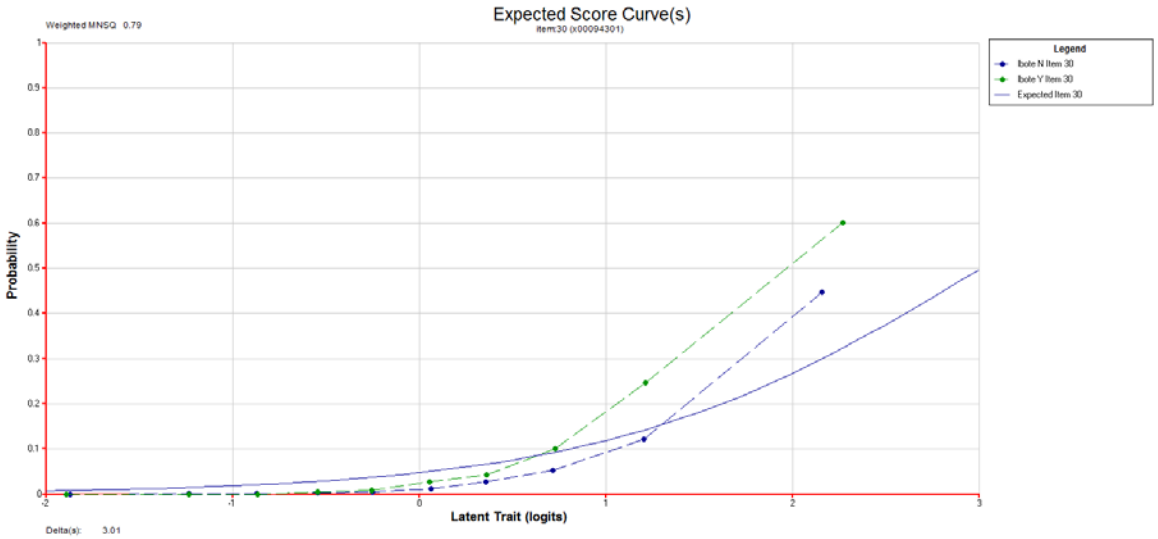


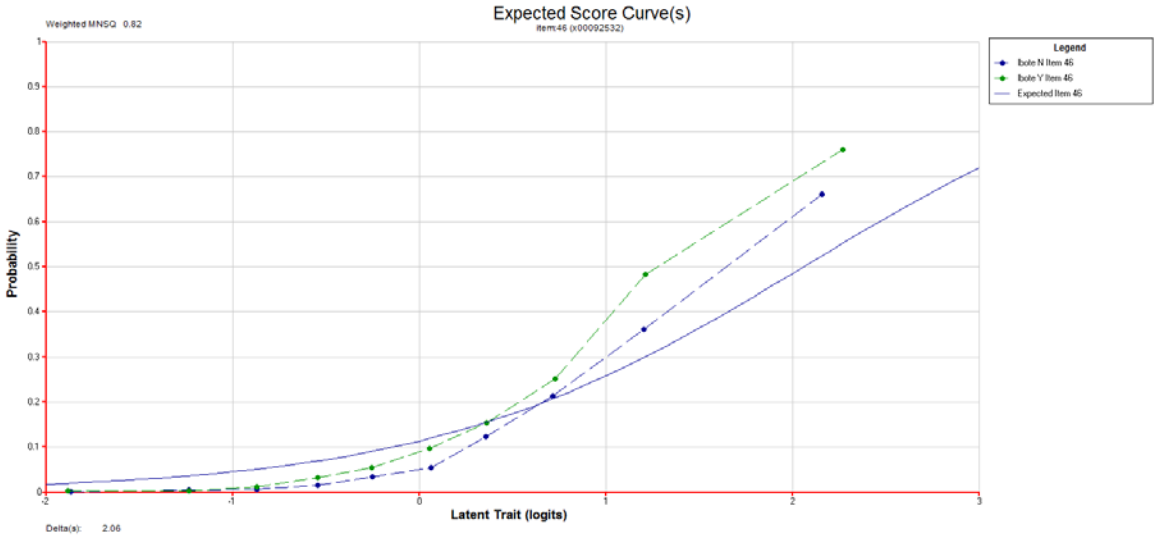

Expected Score Curve(s)
Item:43 (x00026973)
Weighted MNSQ 1.00
Probability
Latent Trait (logits)
Delta(s): -0.35
Legend
Ibote N Item 43
Ibote Y Item 43
Expected Item 43

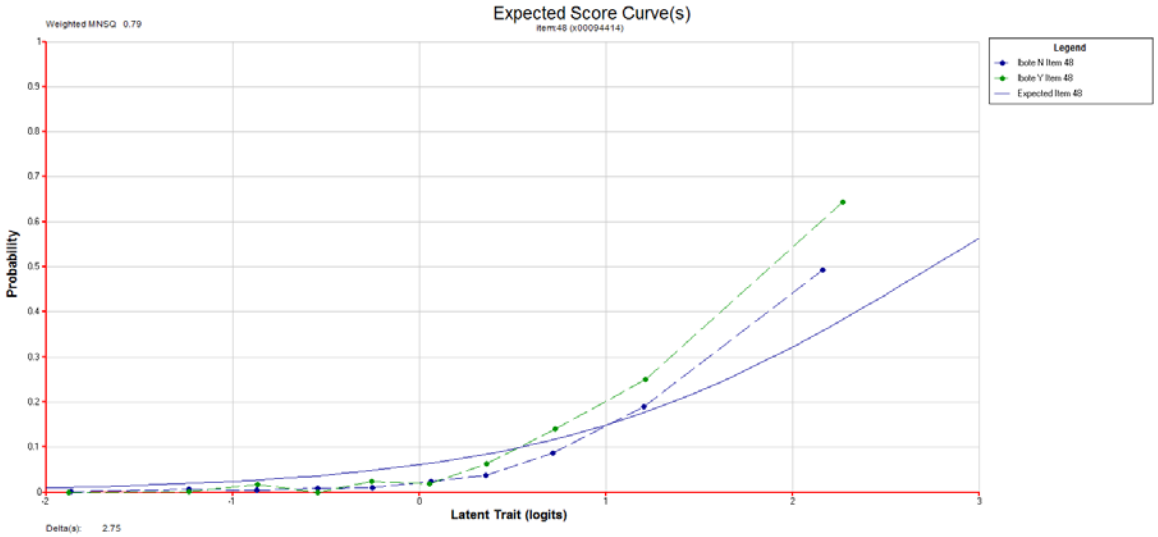

Expected Score Curve(s)
Item:48 (x00092532)
Weighted MNSQ 0.78
Probability
Latent Trait (logits)
Delta(s): 2.60
Legend
Ibote N Item 48
Ibote Y Item 48
Expected Item 48

E.P.6.12. Year 9 Numeracy





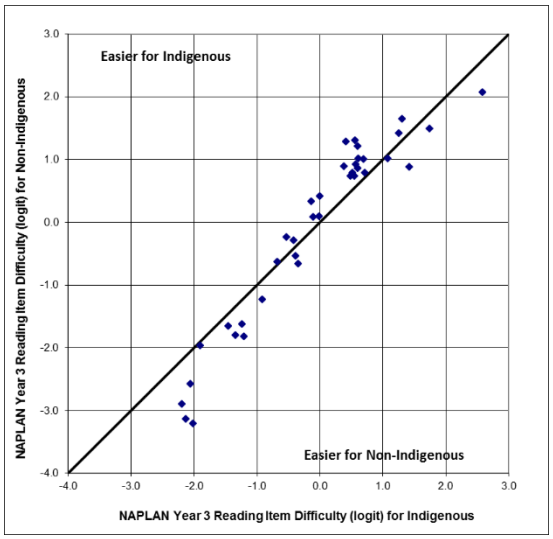



Expected Score Curve(s)
Item:48 (x00094414)
Weighted MNSQ 0.79
Probability
Latent Trait (logits)
Delta(s): 2.75
Legend
Ibole N Item 48
Ibole Y Item 48
Expected Item 48

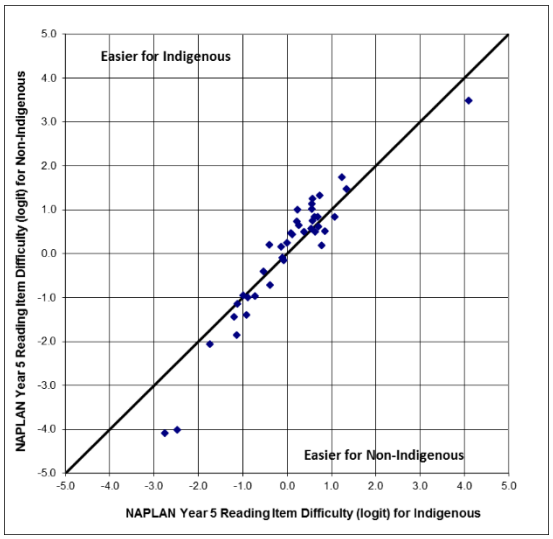
APPENDIX F.P. INDIGENOUS STATUS DIF ANALYSIS (PAPER TEST)

F.P.1. Comparison of Indigenous and Non- Indigenous Students in Reading

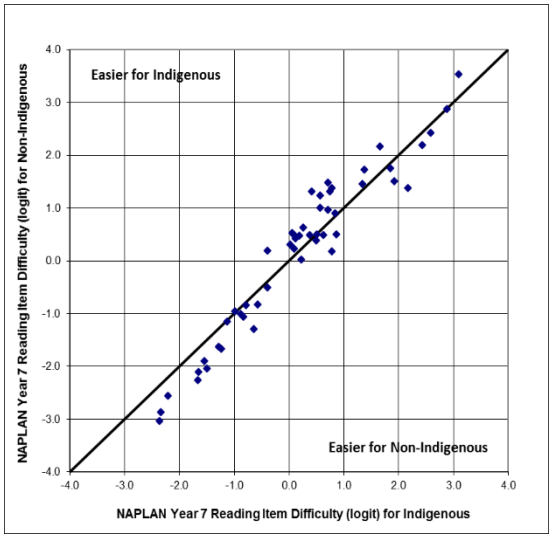
Year 3



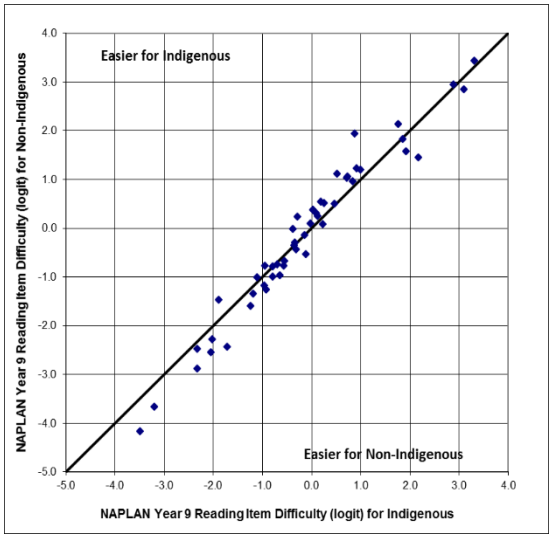
Year 5



Year 7

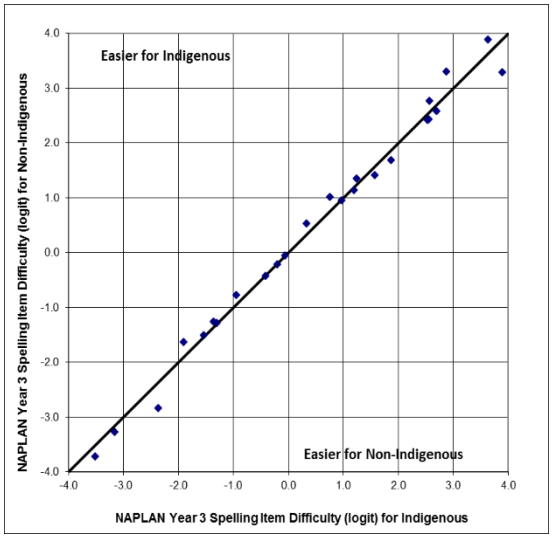


Year 9

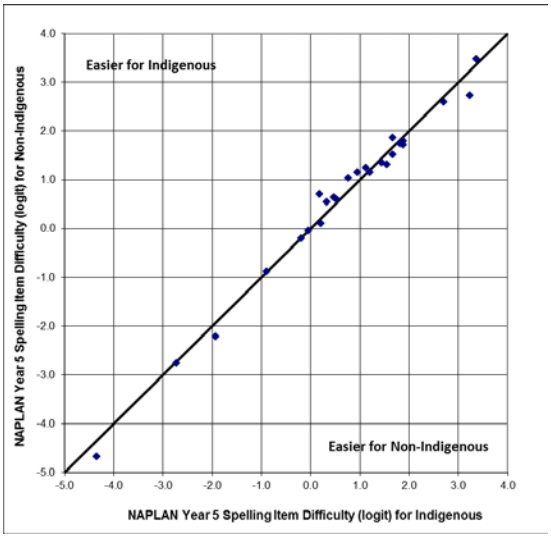


F.P.2. Comparison of Indigenous and Non- Indigenous Students in Spelling

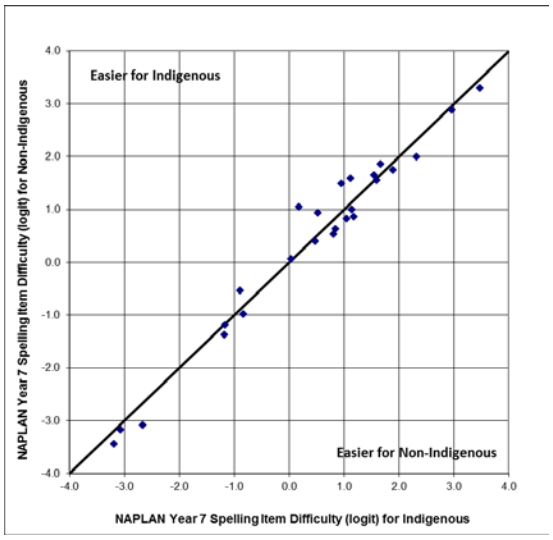
Year 3



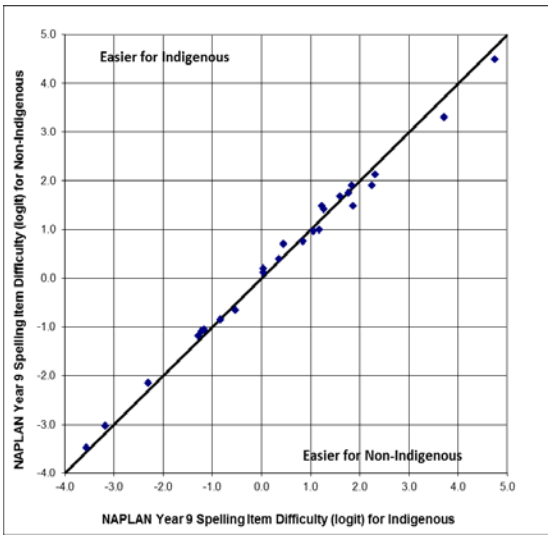
Year 5



Year 7

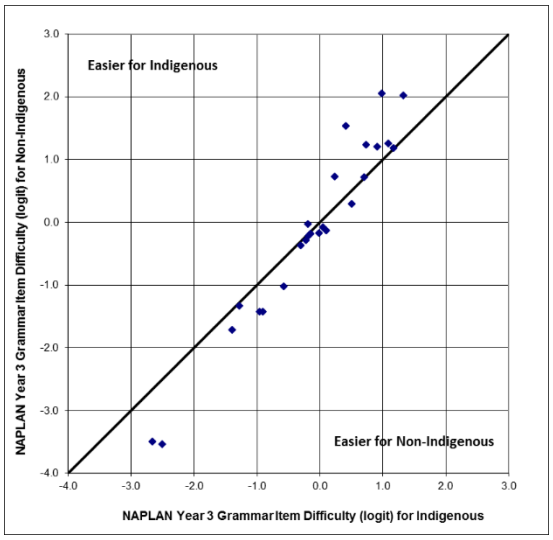


Year 9

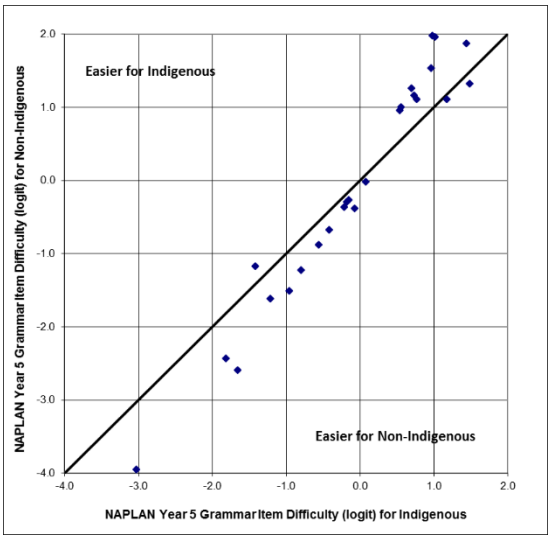


F.P.3. Comparison of Indigenous and Non- Indigenous Students in Grammar and Punctuation

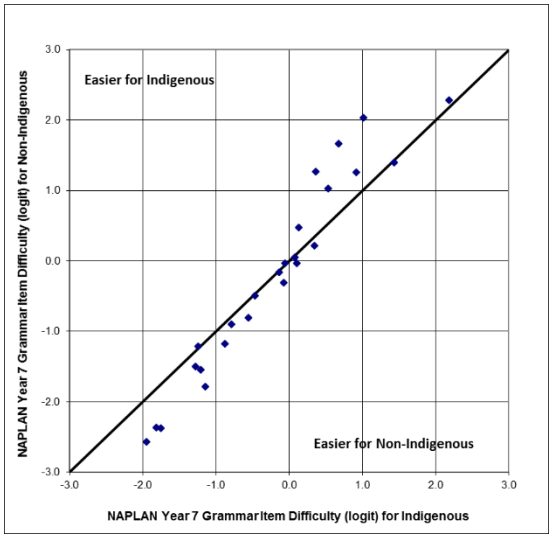
Year 3



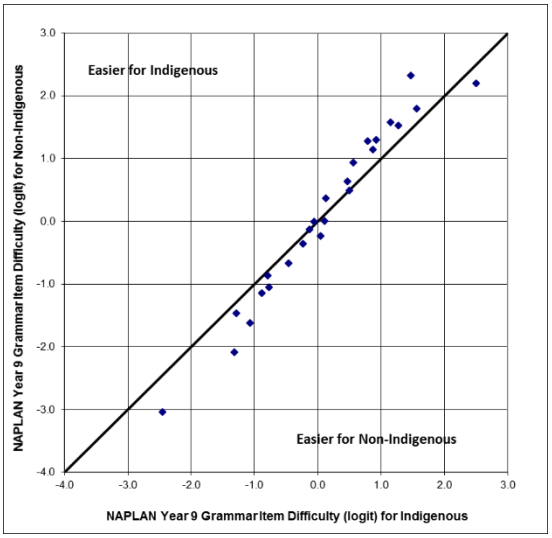
Year 5



Year 7

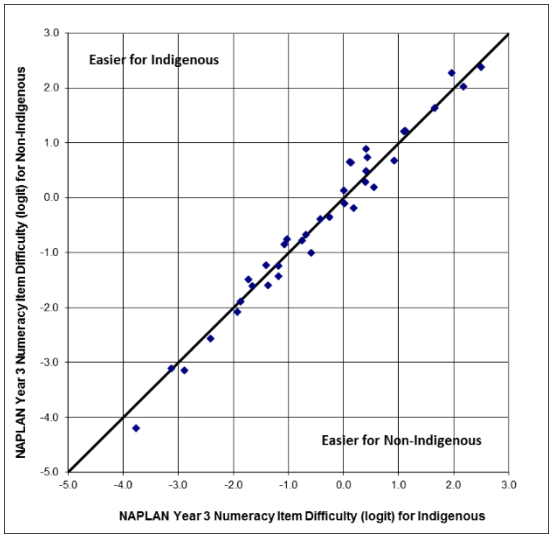


Year 9

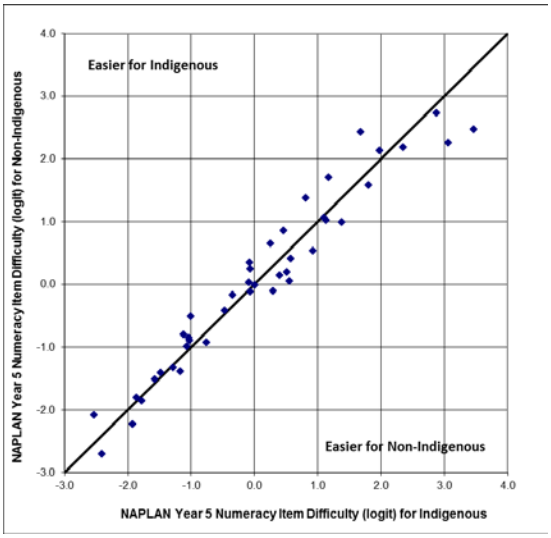


F.P.4. Comparison of Indigenous and Non- Indigenous Students in Numeracy

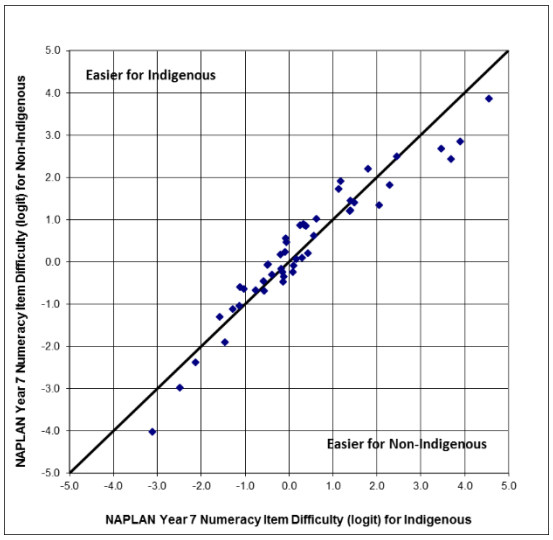
Year 3



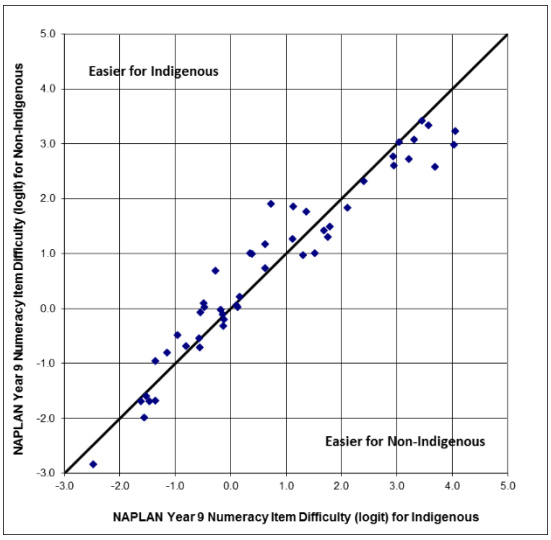
Year 5



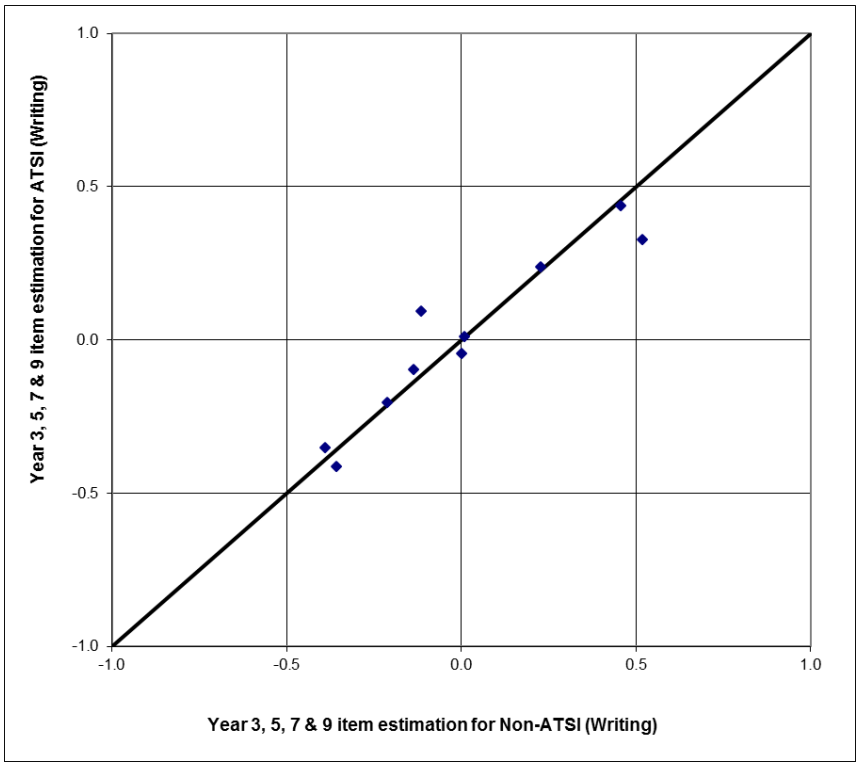
Year 7



Year 9

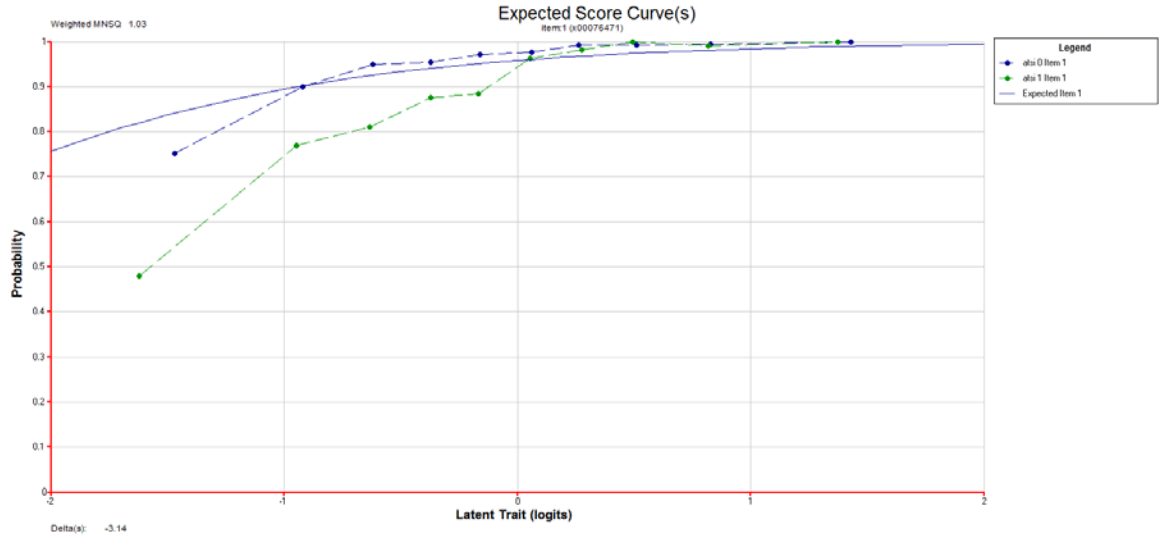


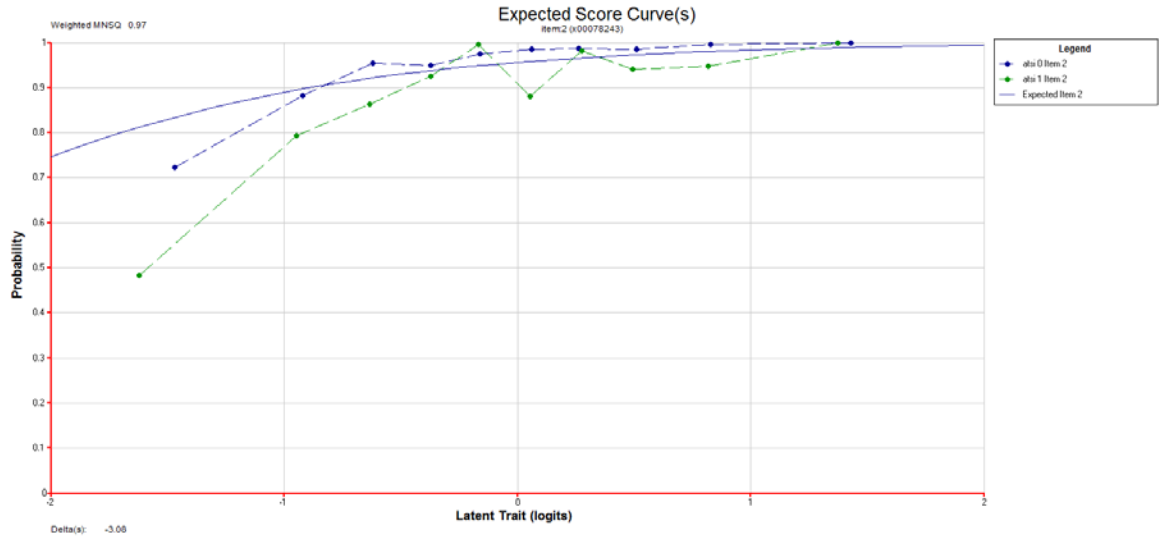
F.P.5. Comparison of Indigenous and Non- Indigenous Students in Writing

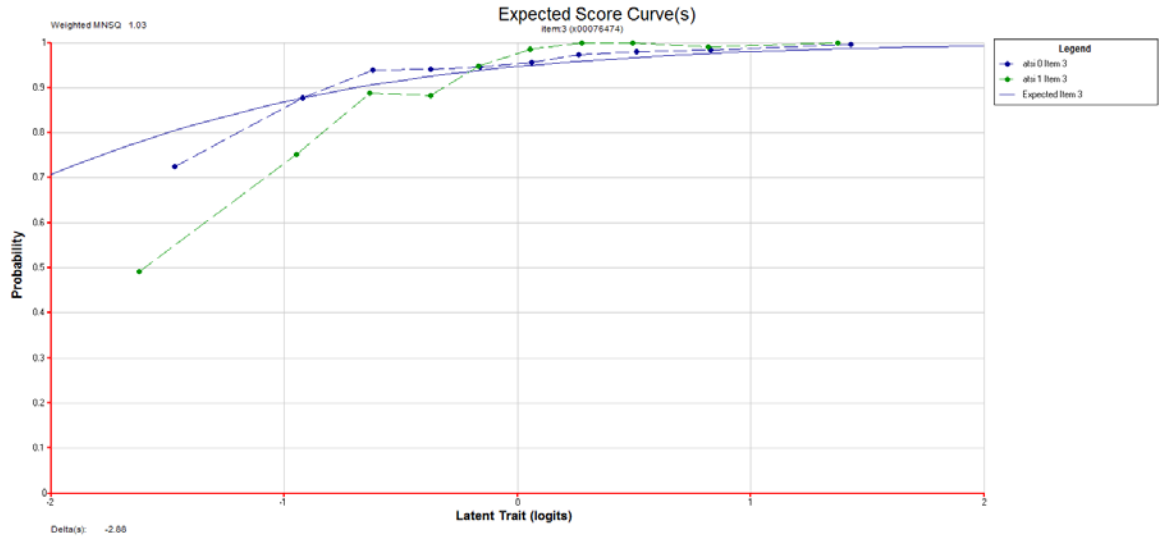


F.P.6 Item DIF Plots for Items Showing Indigenous Status DIF[8]

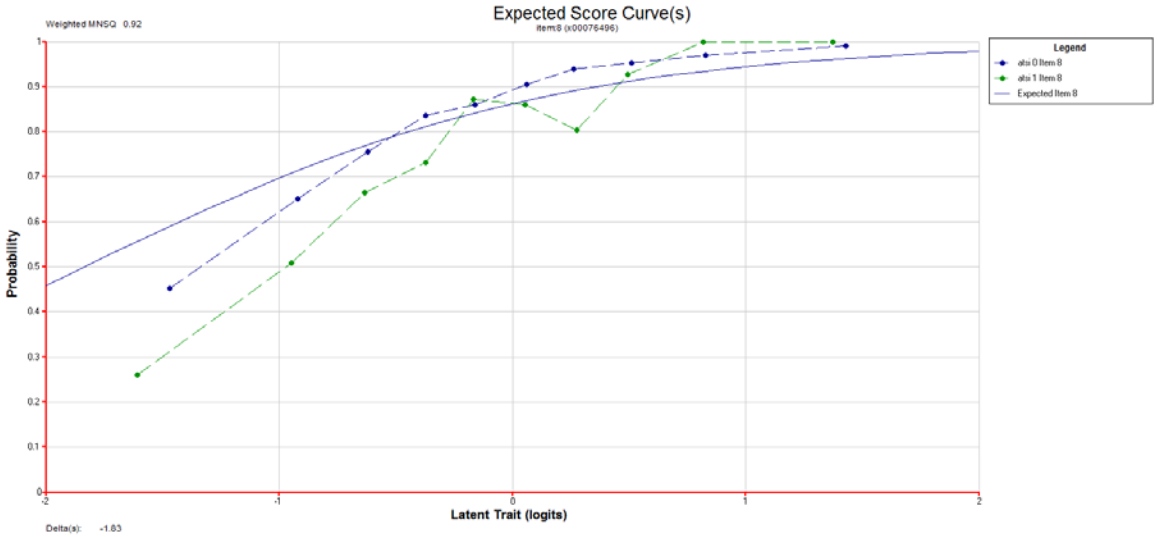
H.P.6.1. Year 3 Reading

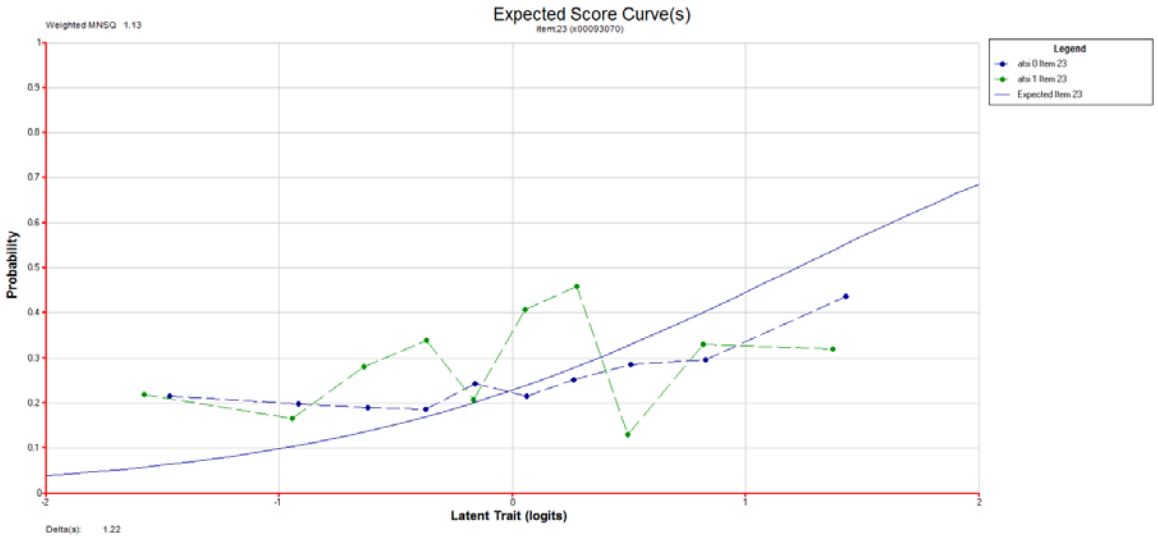


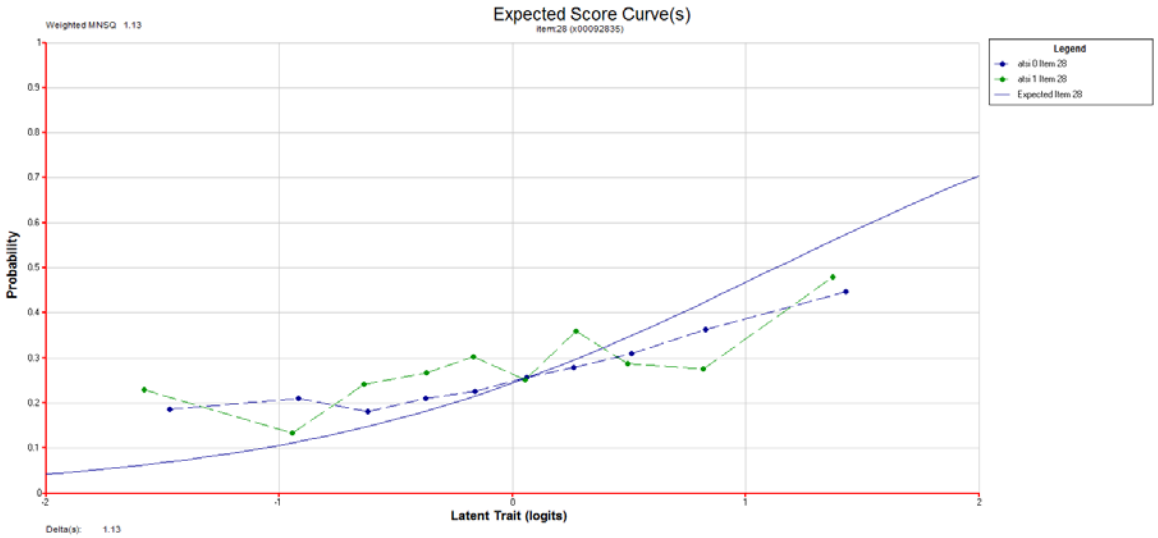


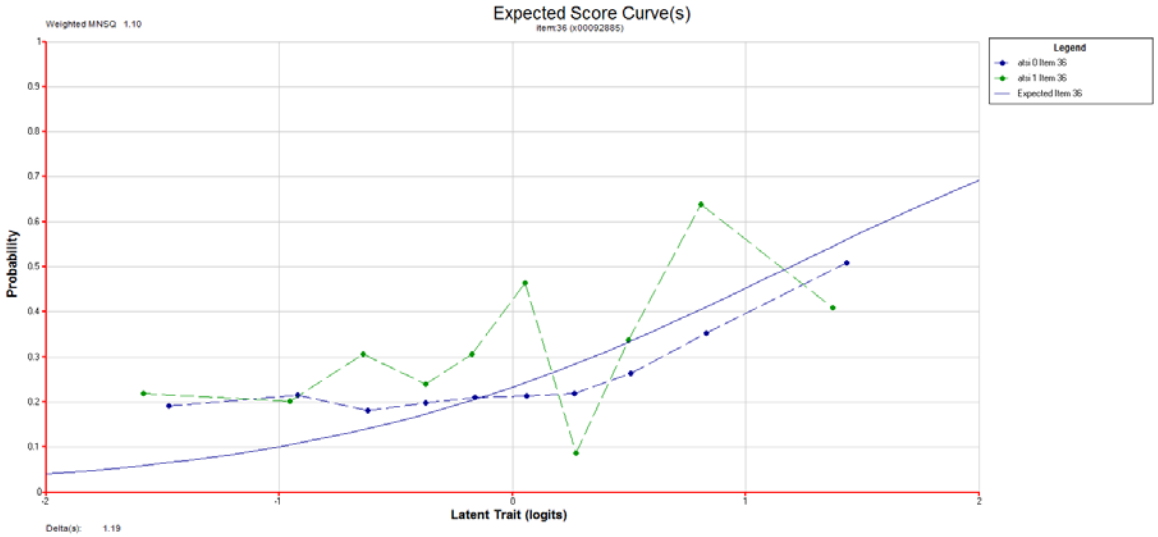


[8] 'atsi 1' indicates 'Indigenous group' and 'atsi 0' indicates 'Non-Indigenous group'.

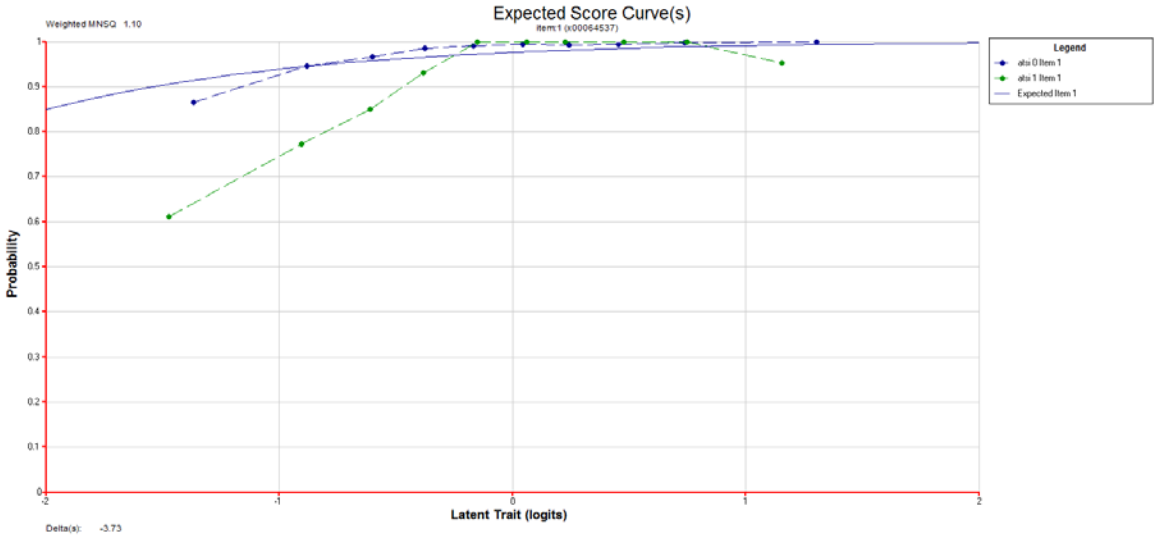

Expected Score Curve(s)
Item:8 (x00076496)
Weighted MNSQ 0.92
Probability
Latent Trait (logits)
Legend
obs 0 Item 8
obs 1 Item 8
Expected Item 8
Delta(s): -1.83

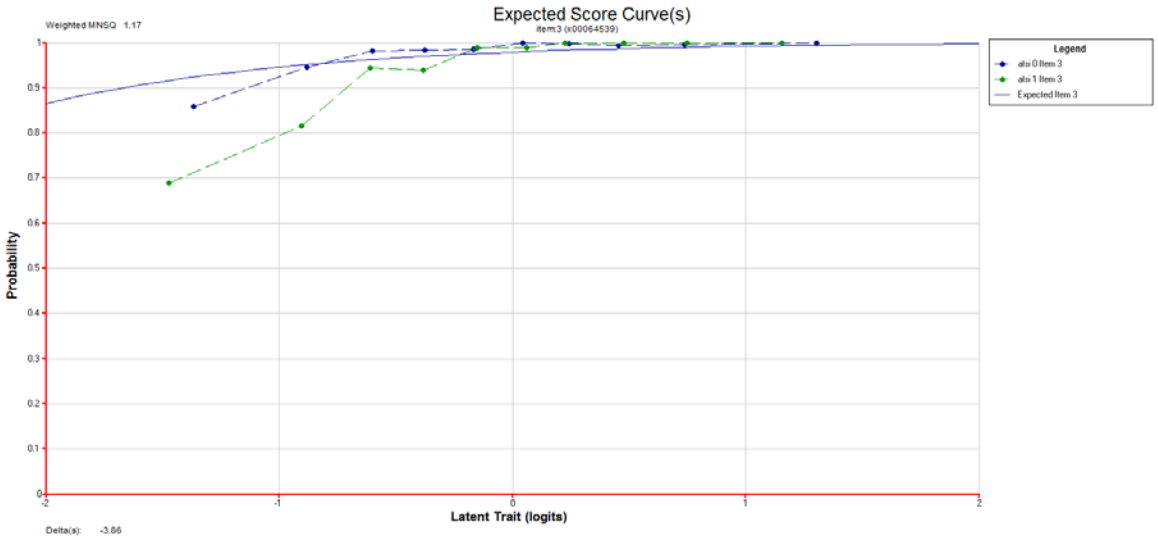

Expected Score Curve(s)
Item:23 (x00093070)
Weighted MNSQ 1.13
Probability
Latent Trait (logits)
Legend
obs 0 Item 23
obs 1 Item 23
Expected Item 23
Delta(s): 1.22

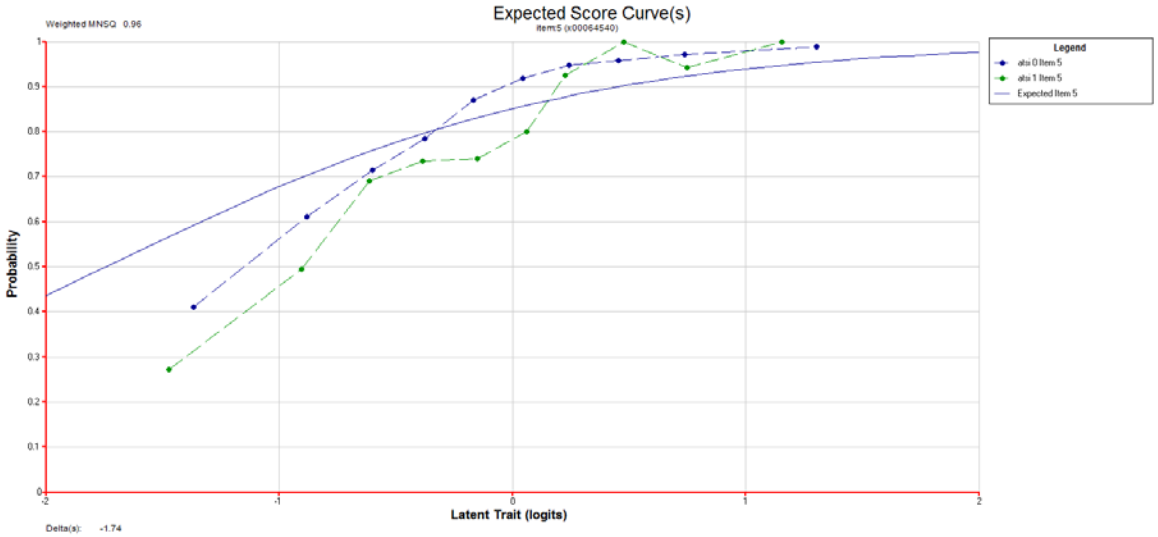

Expected Score Curve(s)
Item:28 (x00092835)
Weighted MNSQ 1.13
Probability
Latent Trait (logits)
Legend
obs 0 Item 28
obs 1 Item 28
Expected Item 28
Delta(s): 1.13

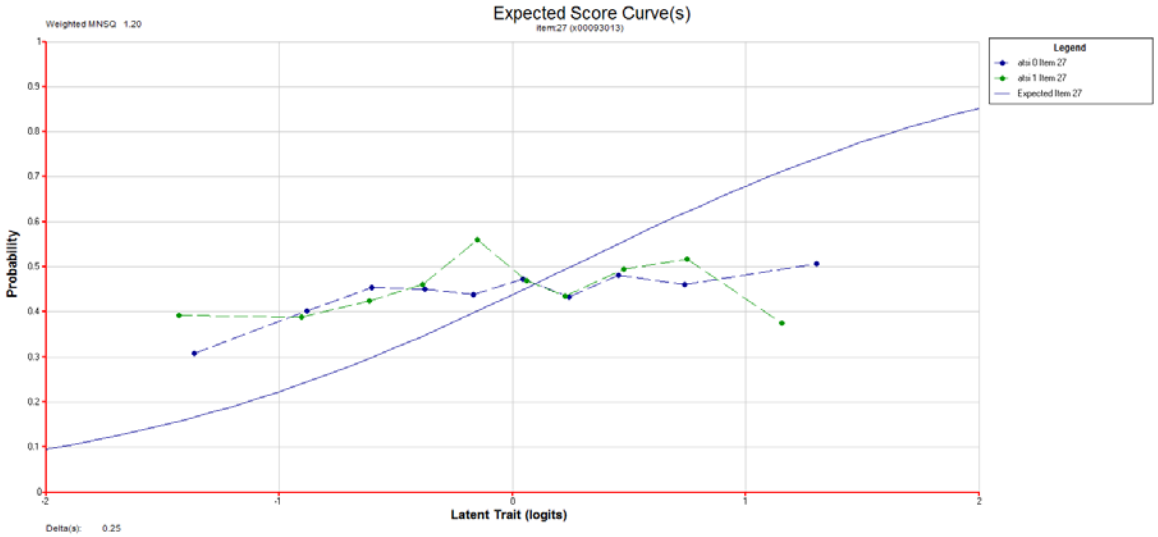

Expected Score Curve(s)
Item:36 (x00092885)
Weighted MNSQ 1.10
Probability
Latent Trait (logits)
Delta(s): 1.19
Legend
obs 0 Item 36
obs 1 Item 36
Expected Item 36

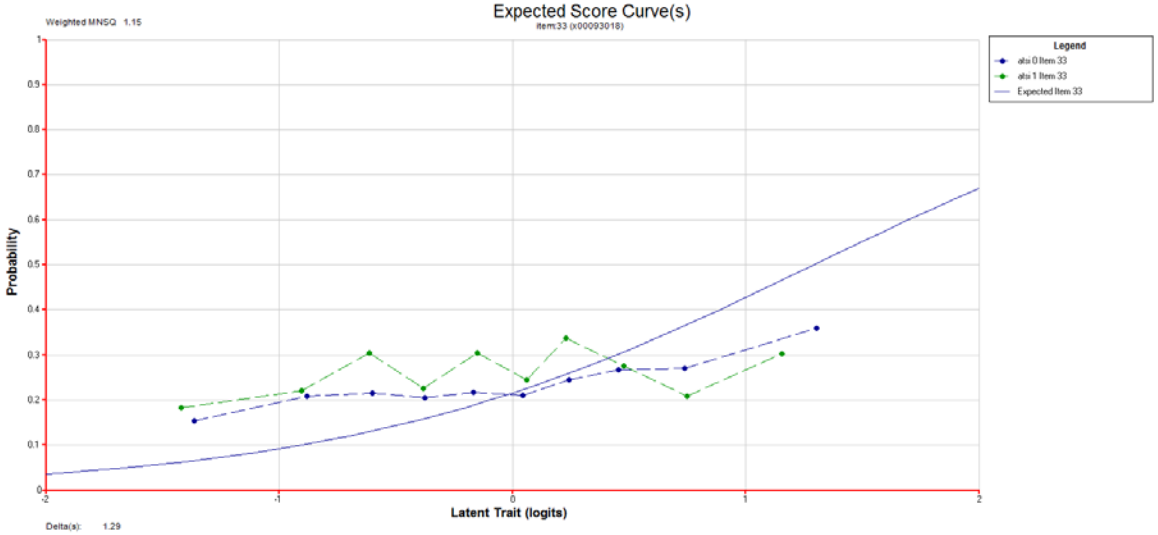
F.P.6.2. Year 5 Reading

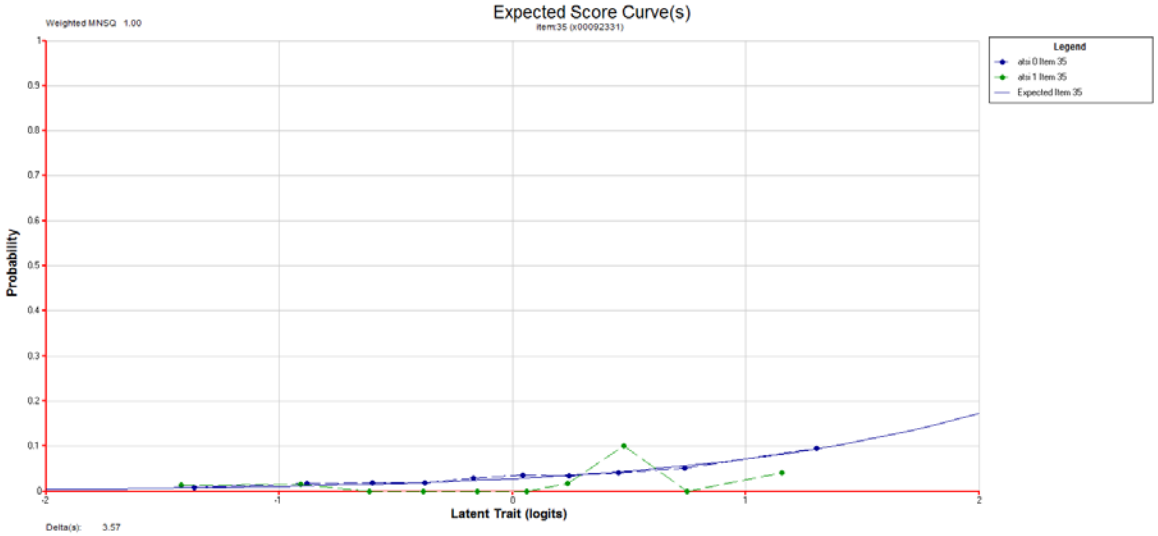




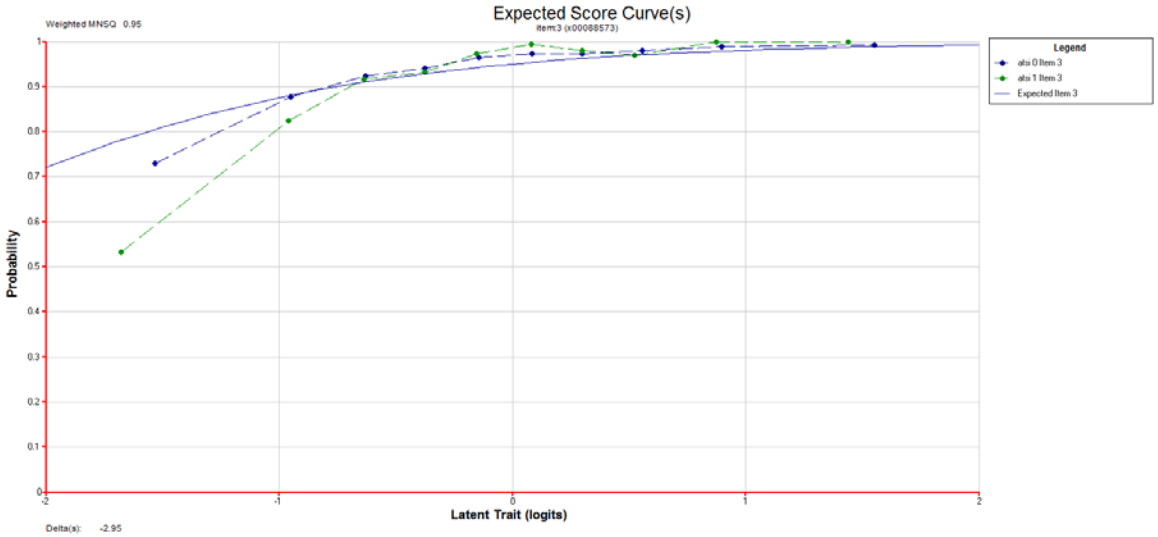


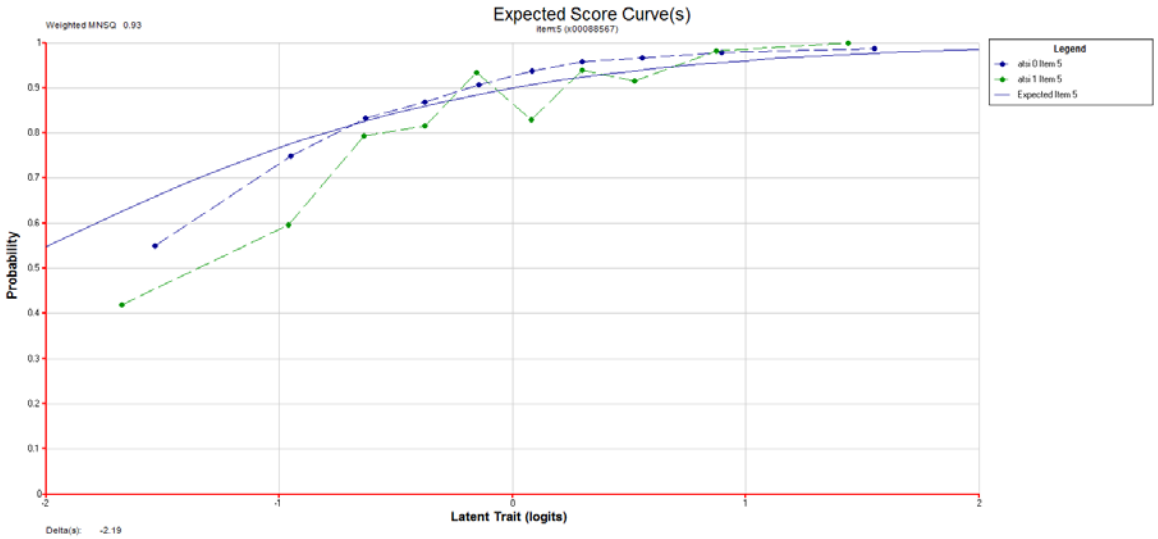

Expected Score Curve(s)
Item:27 (x00093013)
Weighted MNSQ 1.20
Legend
obs 0 Item 27
obs 1 Item 27
Expected Item 27
Probability
Latent Trait (logits)
Delta(s): 0.25

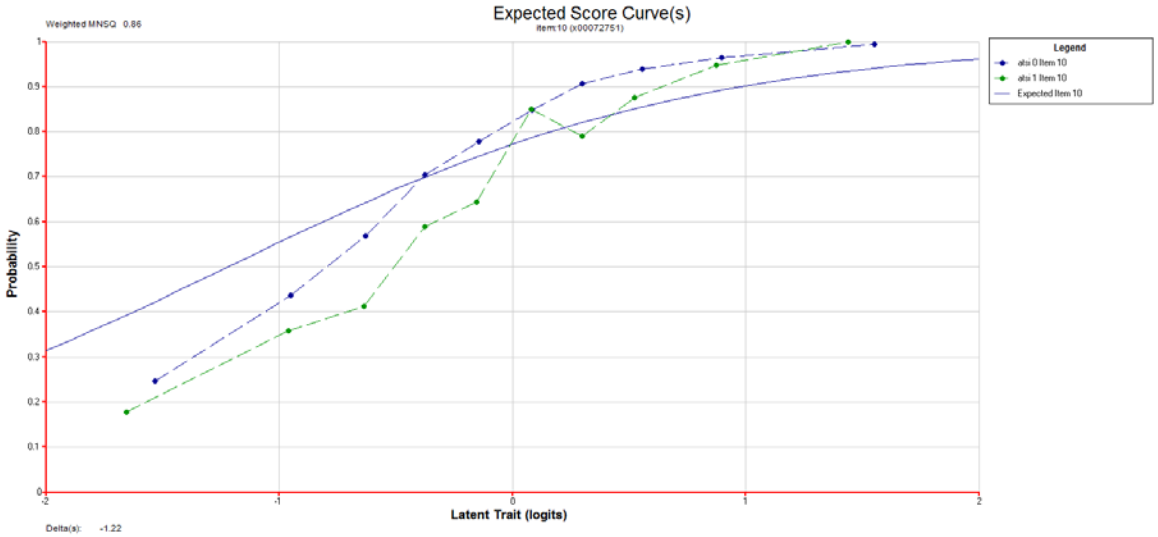

Expected Score Curve(s)
Item:33 (x00093018)
Weighted MNSQ 1.15
Legend
obs 0 Item 33
obs 1 Item 33
Expected Item 33
Probability
Latent Trait (logits)
Delta(s): 1.29

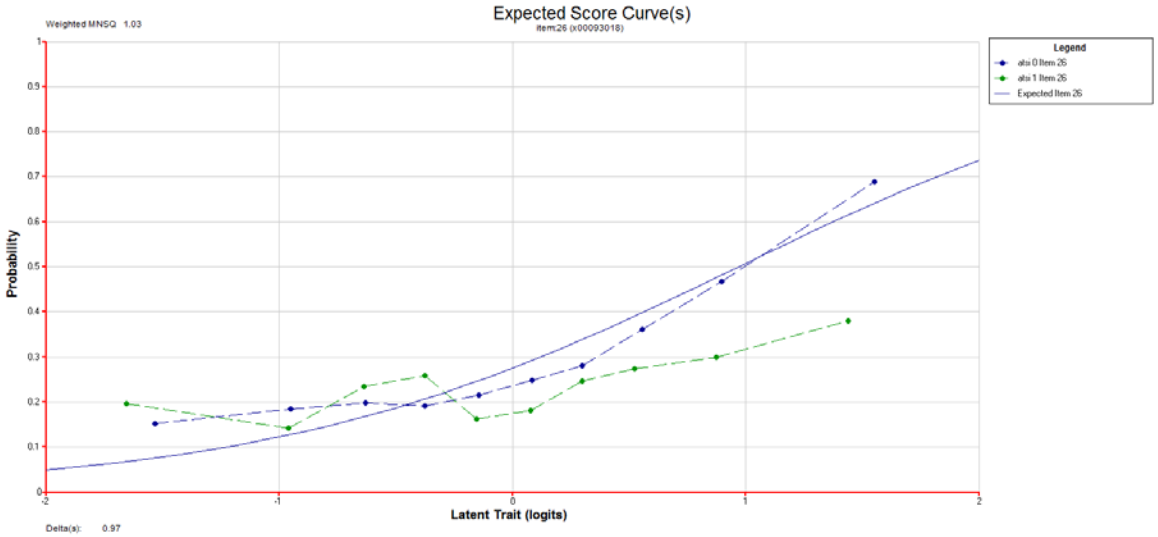

Expected Score Curve(s)
Item:35 (x00092331)
Weighted MNSQ 1.00
Legend
obs 0 Item 35
obs 1 Item 35
Expected Item 35
Probability
Latent Trait (logits)
Delta(s): 3.57

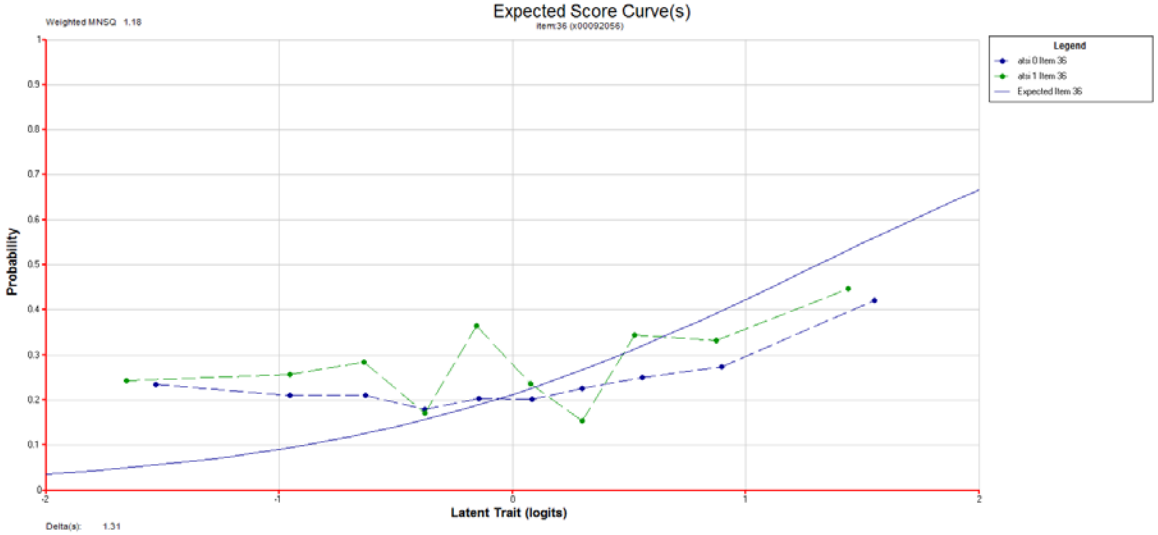
F.P.6.3. Year 7 Reading

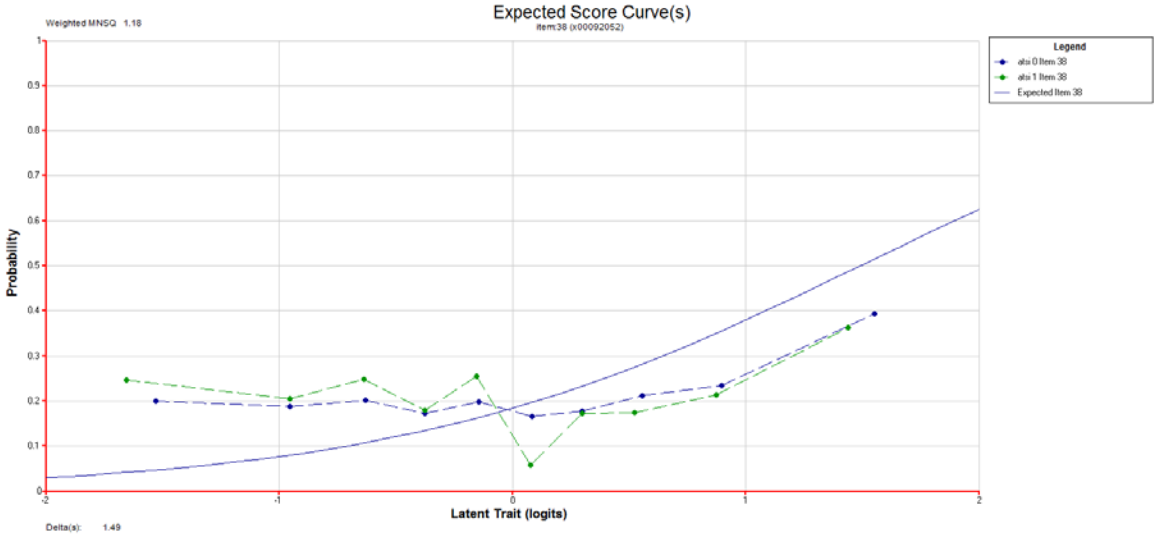




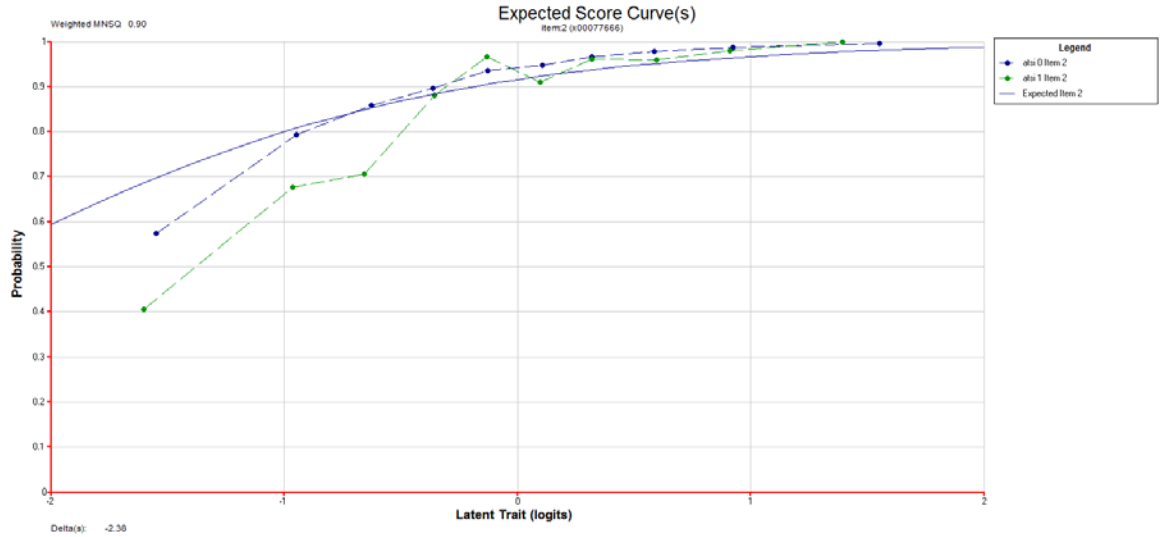


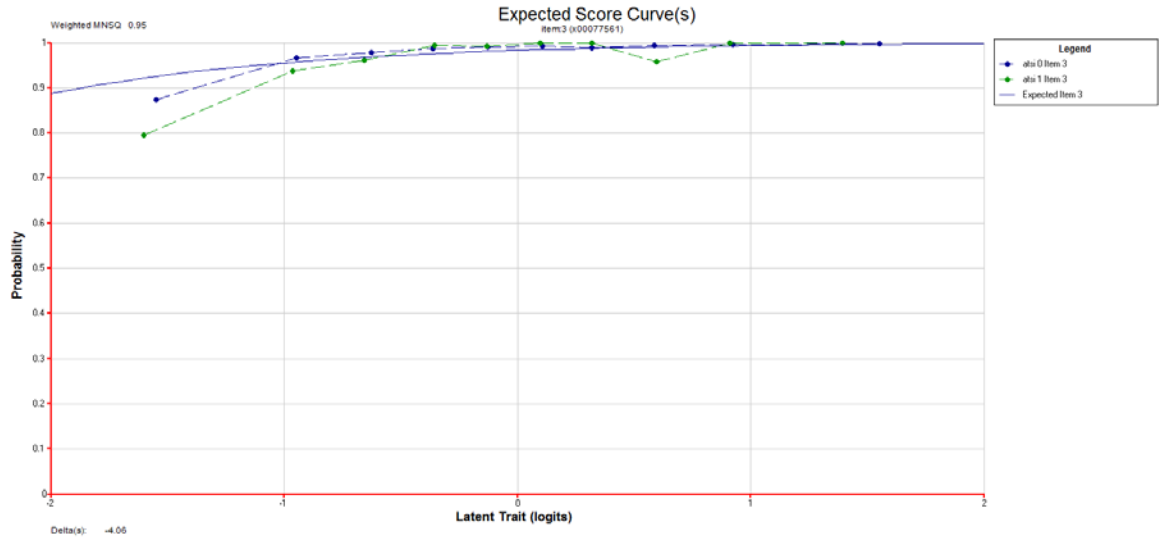

Expected Score Curve(s)
Item:26 (x00093016)
Weighted MNSQ 1.03
Legend
obs 0 Item 26
obs 1 Item 26
Expected Item 26
Probability
Latent Trait (logits)
Delta(s): 0.97

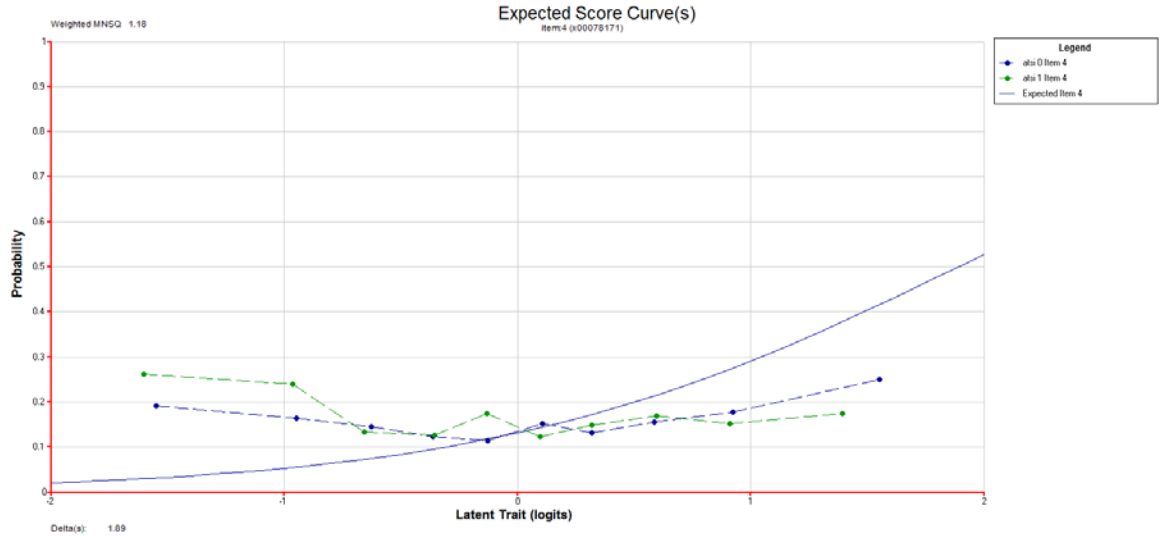

Expected Score Curve(s)
Item:36 (x00092056)
Weighted MNSQ 1.18
Legend
obs 0 Item 36
obs 1 Item 36
Expected Item 36
Probability
Latent Trait (logits)
Delta(s): 1.31

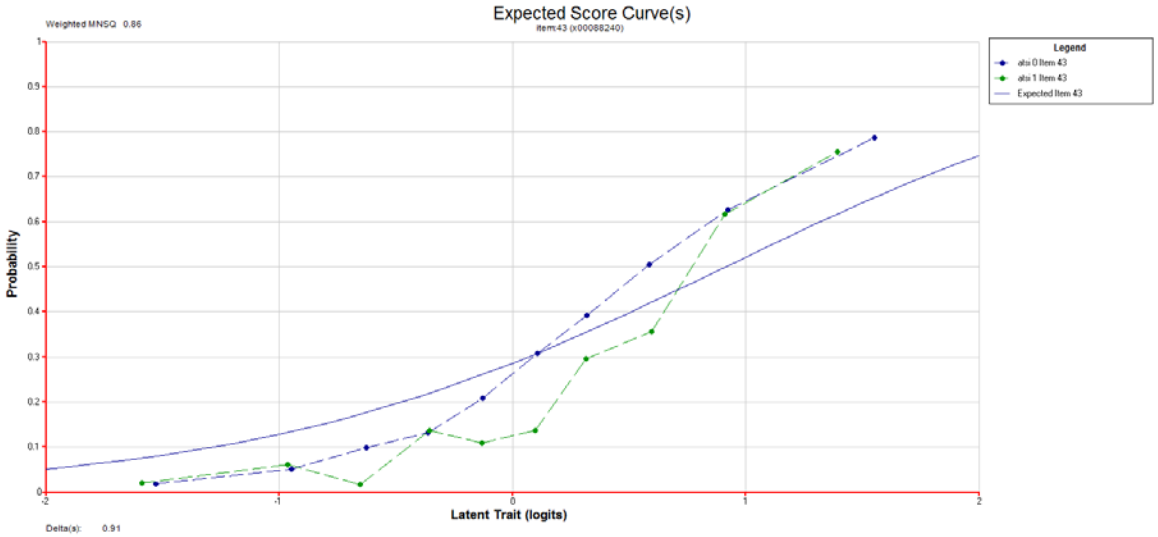

Expected Score Curve(s)
Item:38 (x00092052)
Weighted MNSQ 1.18
Legend
obs 0 Item 38
obs 1 Item 38
Expected Item 38
Probability
Latent Trait (logits)
Delta(s): 1.49

F.P.6.4. Year 9 Reading

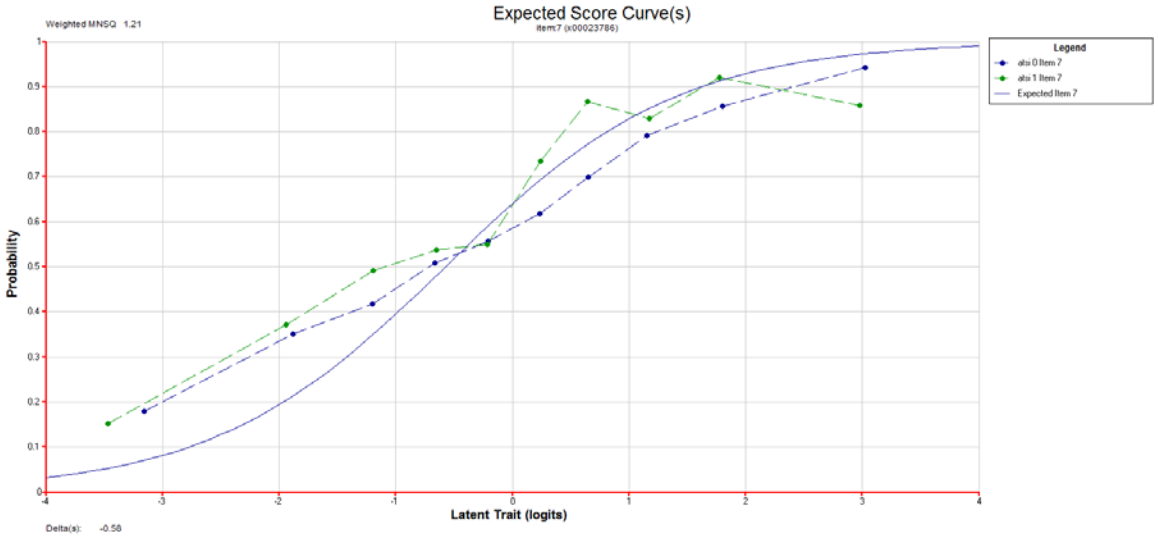




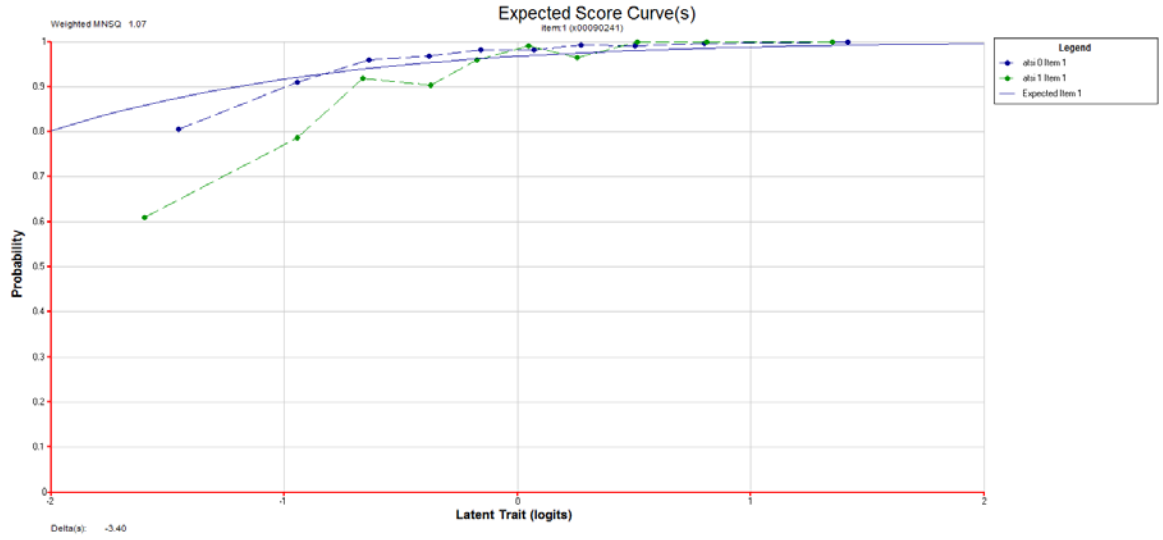


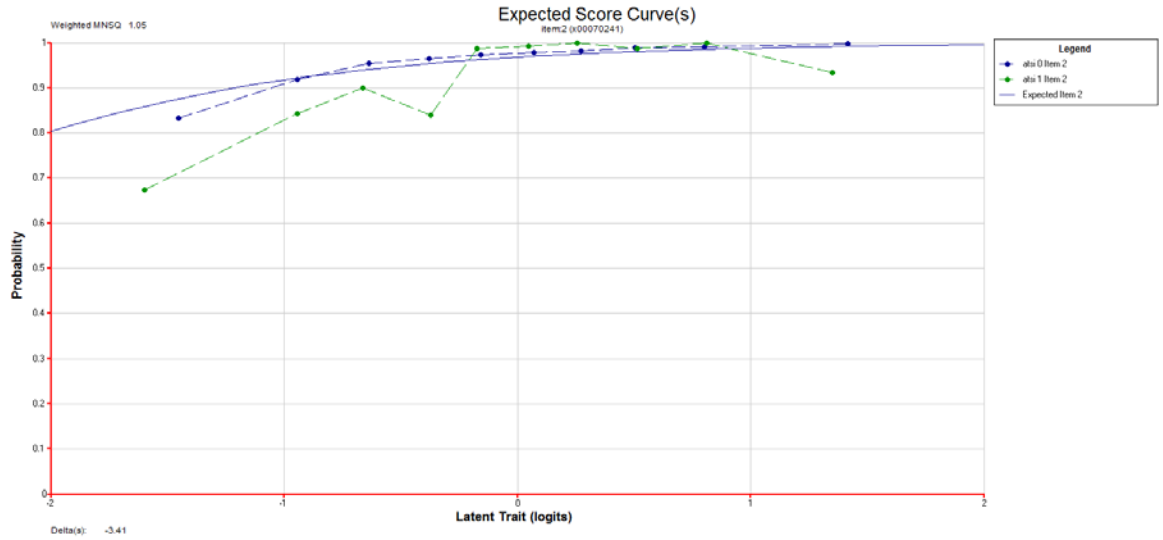

Expected Score Curve(s)
Item:43 (x00088240)
Weighted MNSQ 0.86
Probability
Latent Trait (logits)
Legend
obs 0 Item 43
obs 1 Item 43
Expected Item 43
Delta(s): 0.91

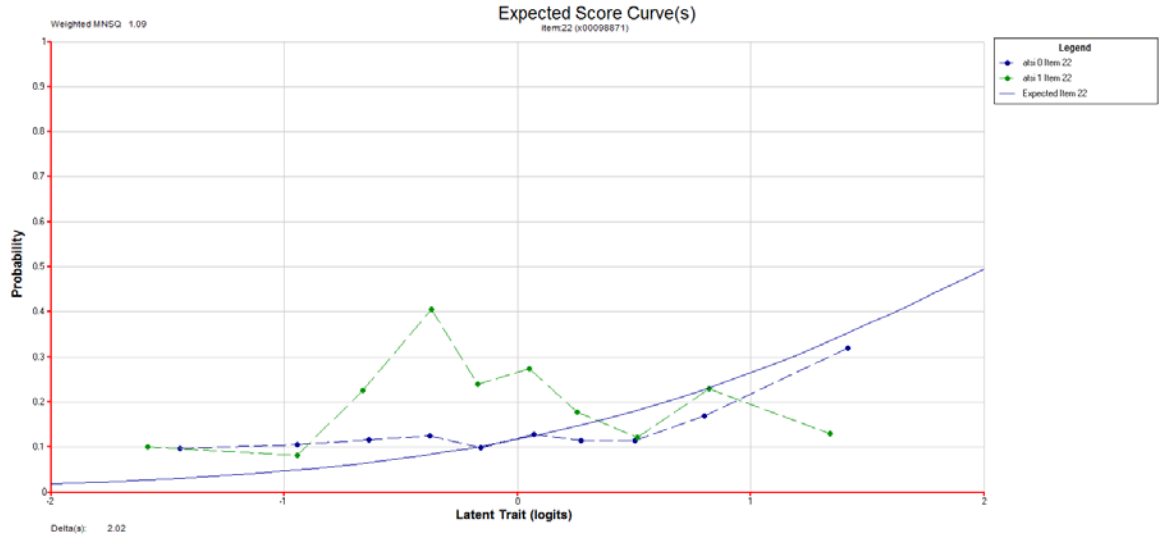
F.P.6.5. Year 7 Spelling

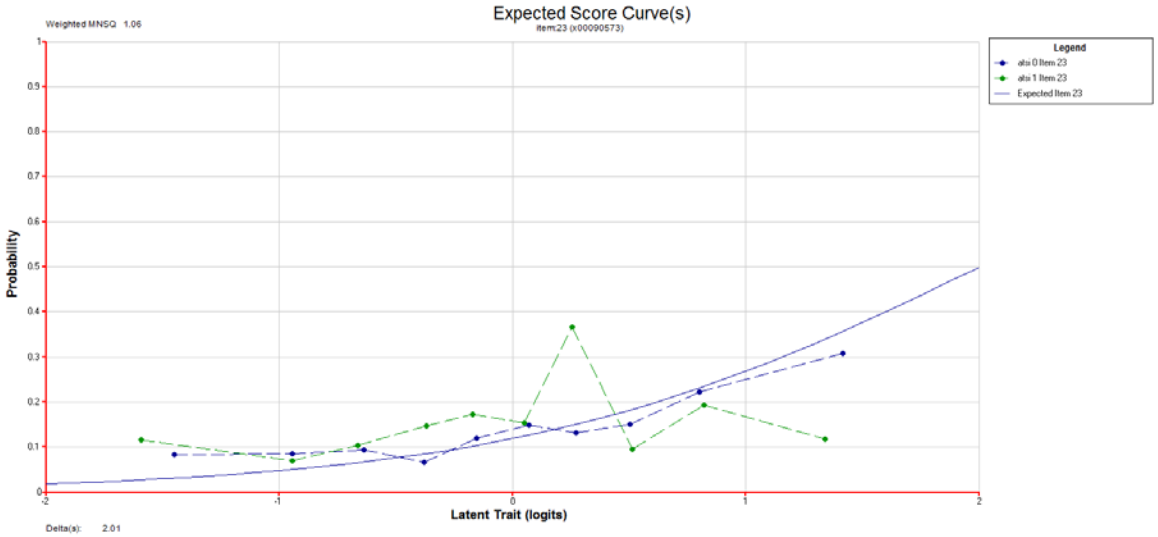


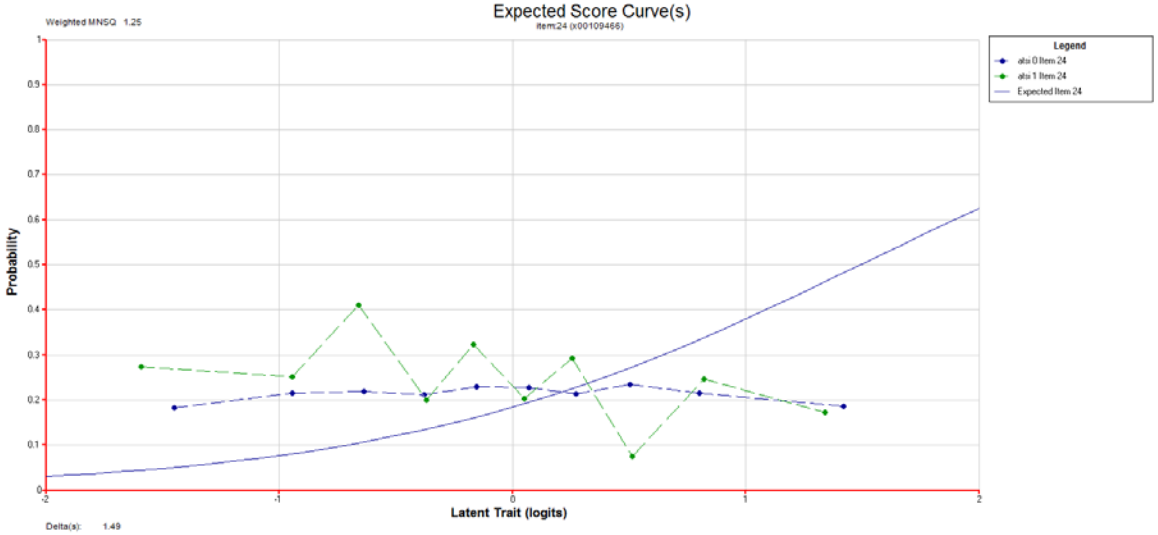
F.P.6.6. Year 3 Grammar and Punctuation



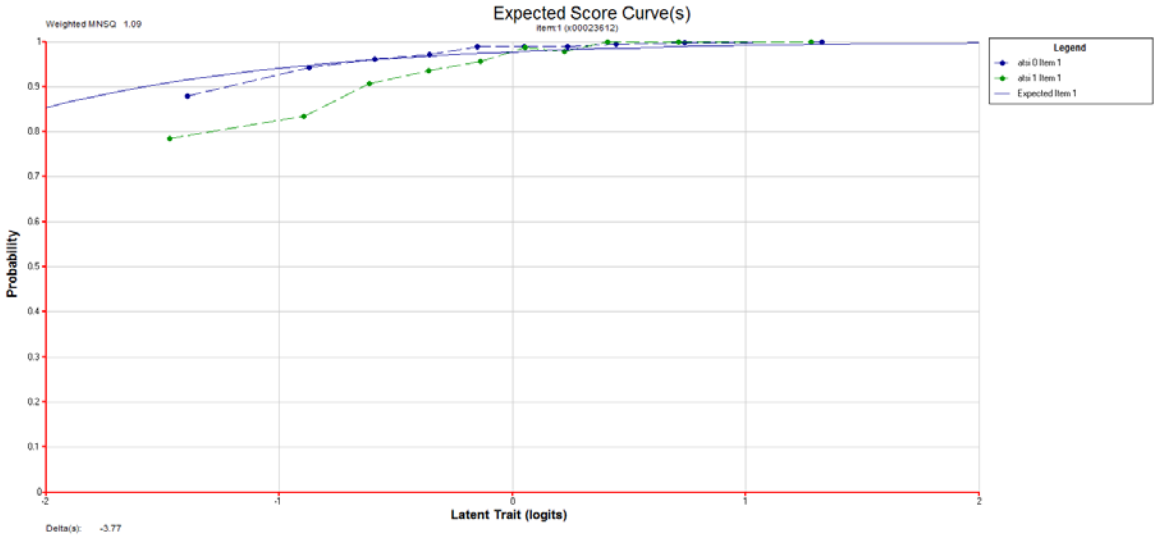


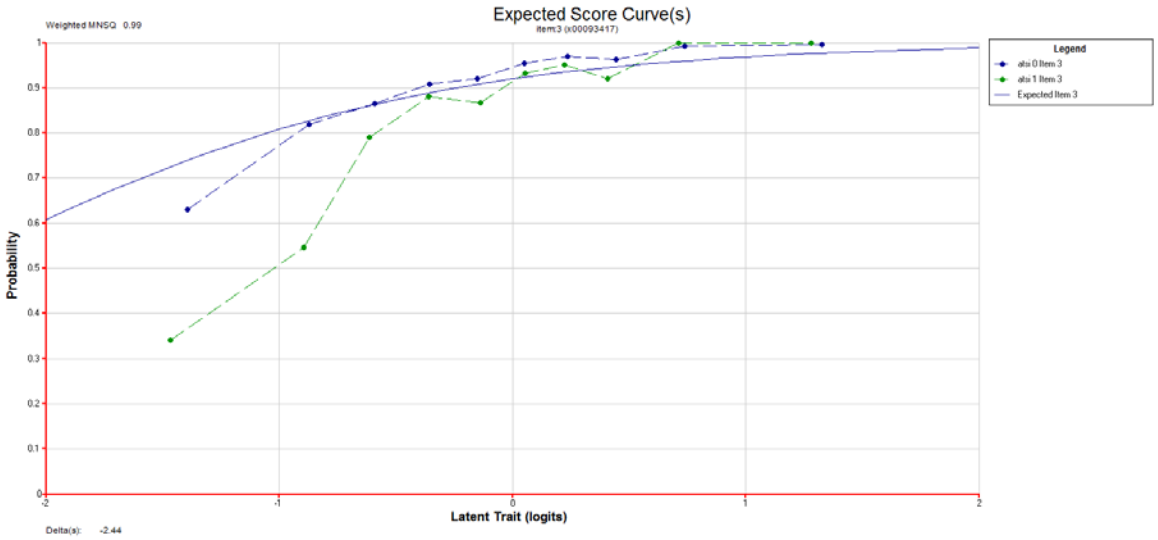


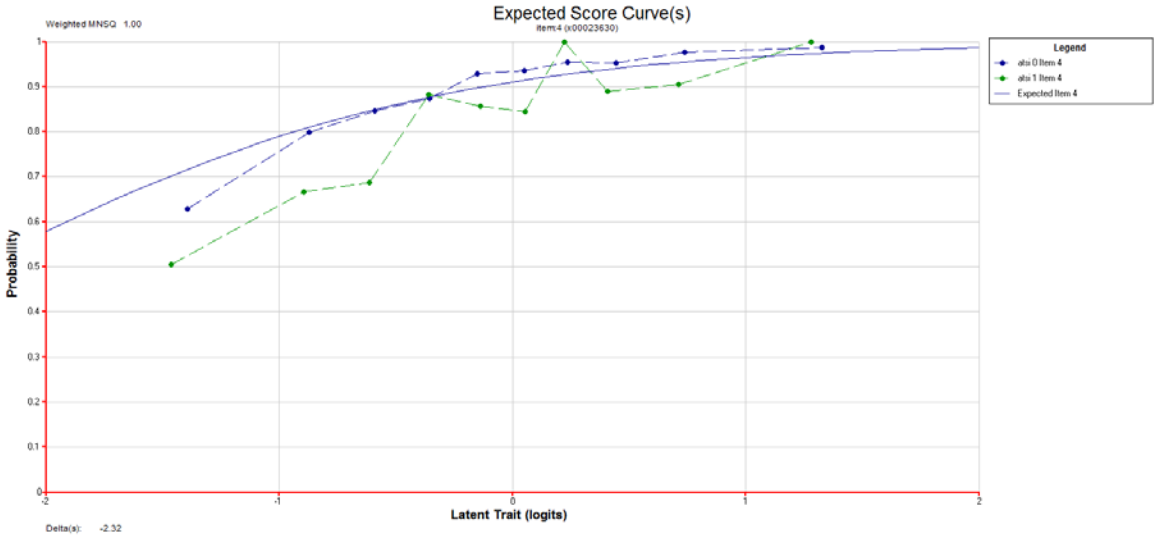

Expected Score Curve(s)
Item:23 (x00090573)
Weighted MNSQ 1.06
Legend
obs 0 Item 23
obs 1 Item 23
Expected Item 23
Probability
Latent Trait (logits)
Delta(s): 2.01

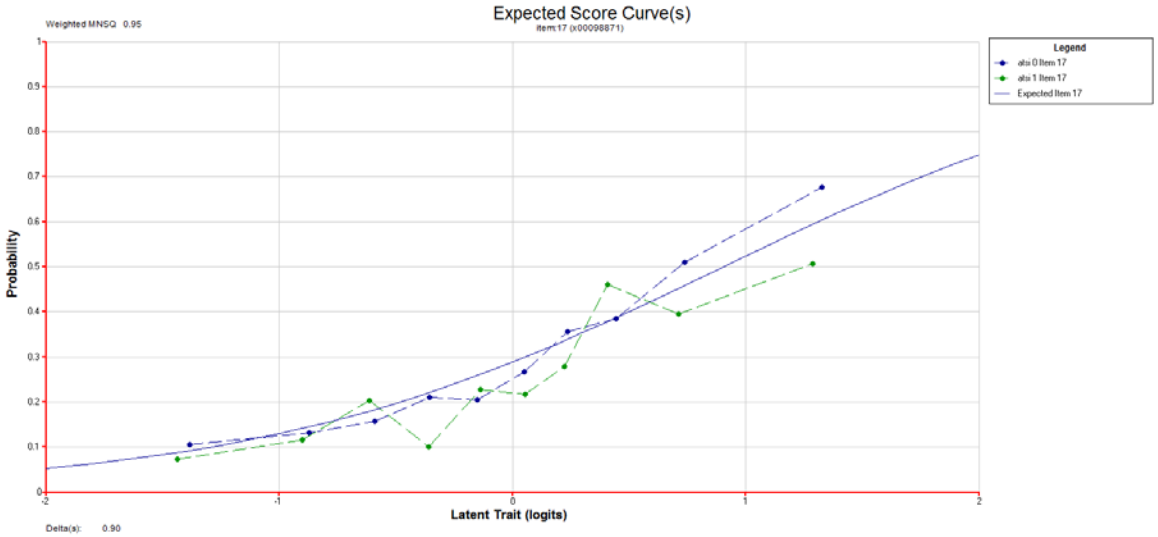

Expected Score Curve(s)
Item:24 (x00109466)
Weighted MNSQ 1.25
Legend
obs 0 Item 24
obs 1 Item 24
Expected Item 24
Probability
Latent Trait (logits)
Delta(s): 1.49

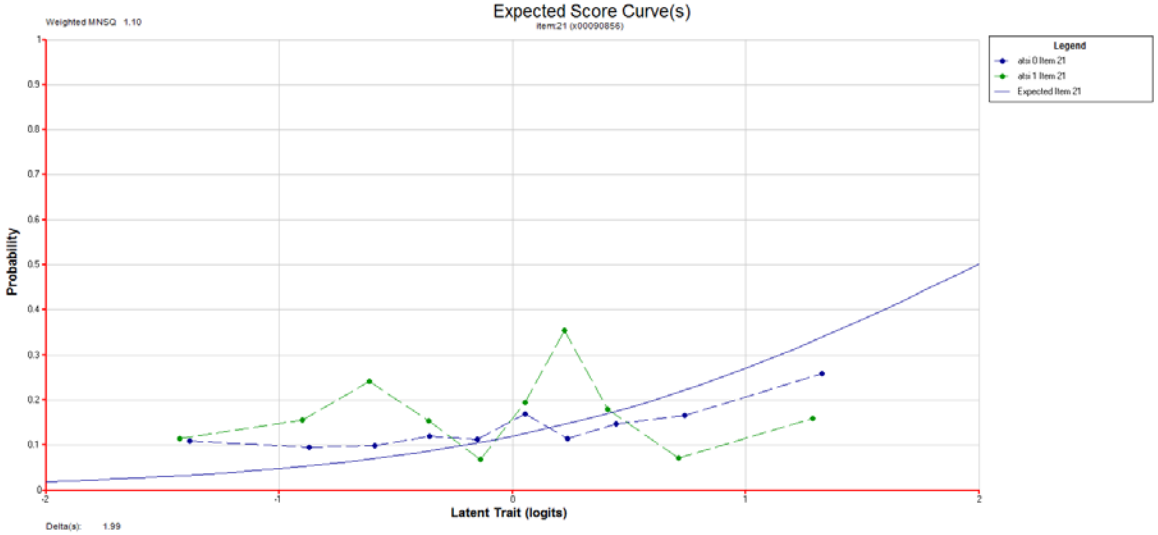
F.P.6.7. Year 5 Grammar and Punctuation



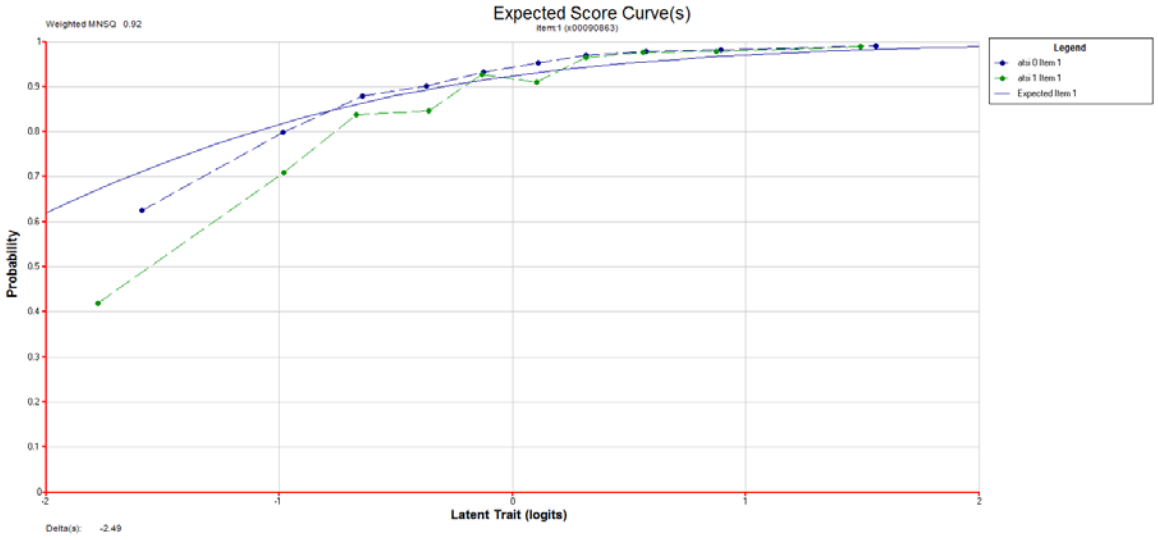


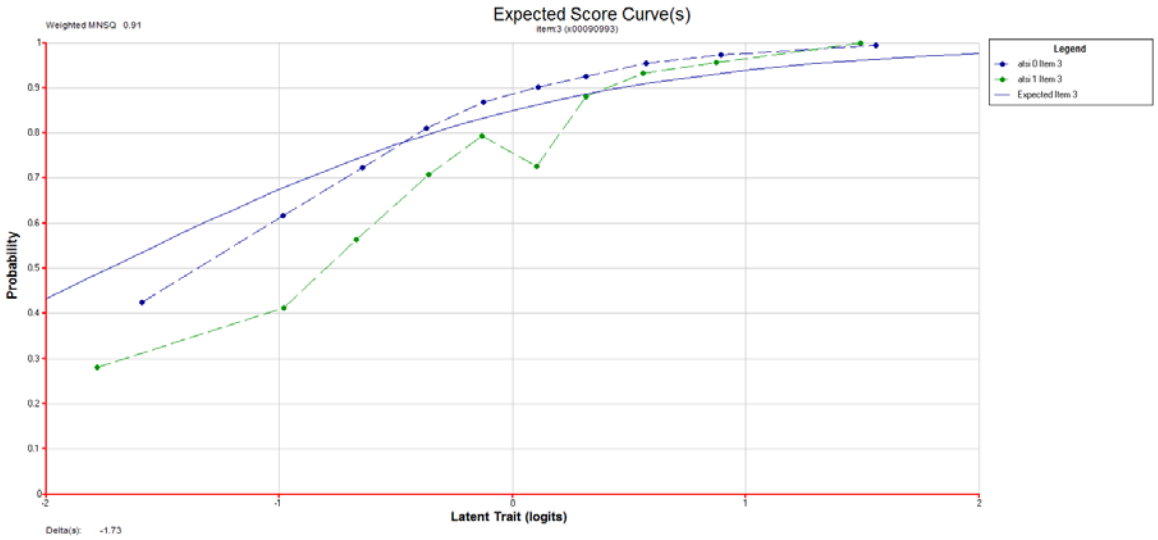


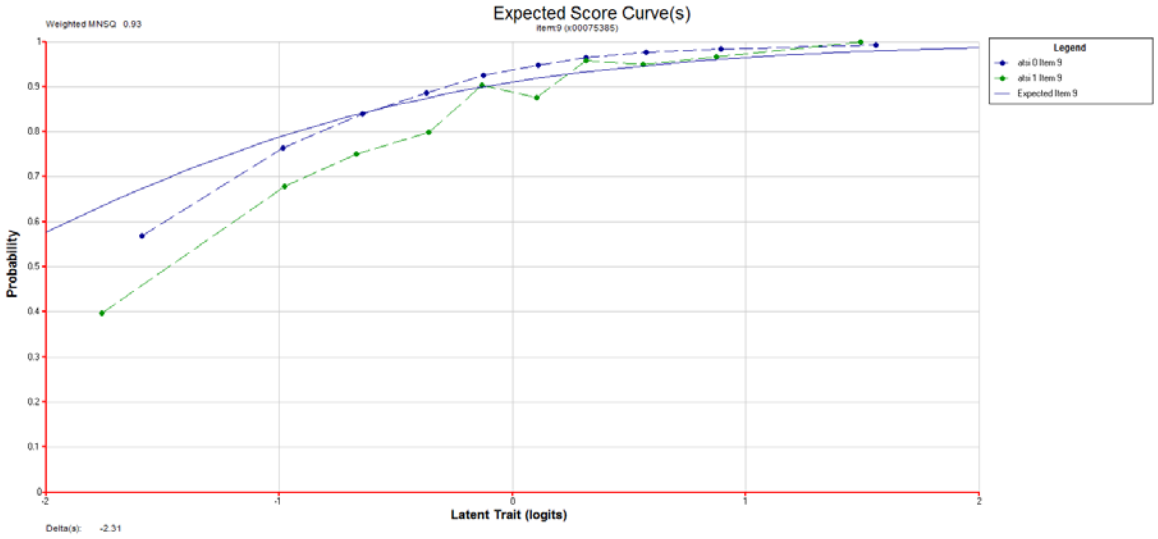

Expected Score Curve(s)
Item:17 (x00098871)
Weighted MNSQ 0.95
Legend
obs 0 Item 17
obs 1 Item 17
Expected Item 17
Probability
Latent Trait (logits)
Delta(s): 0.90

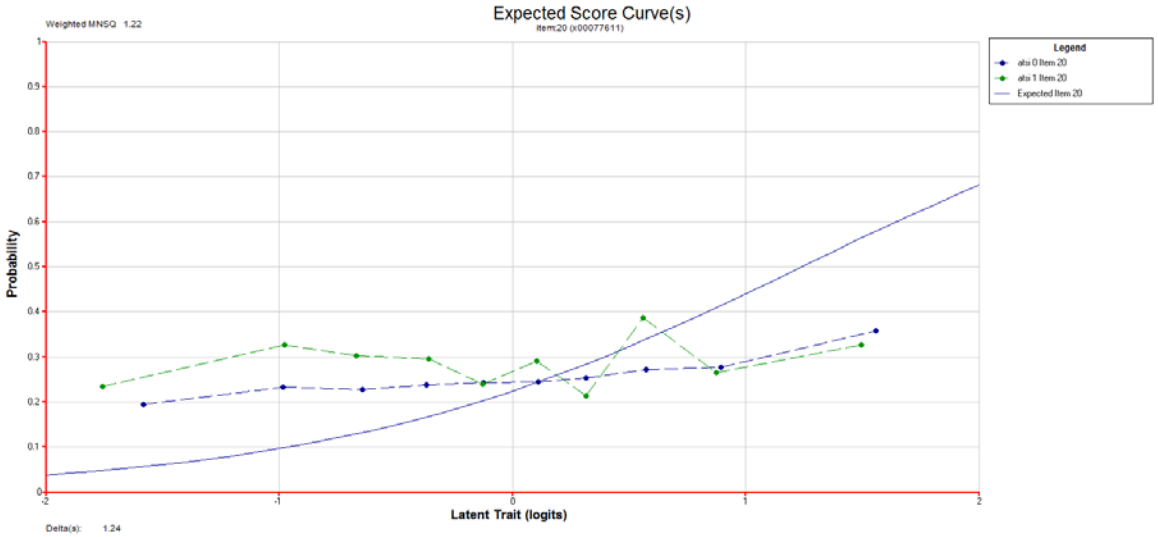

Expected Score Curve(s)
Item:21 (x00090856)
Weighted MNSQ 1.10
Legend
obs 0 Item 21
obs 1 Item 21
Expected Item 21
Probability
Latent Trait (logits)
Delta(s): 1.99

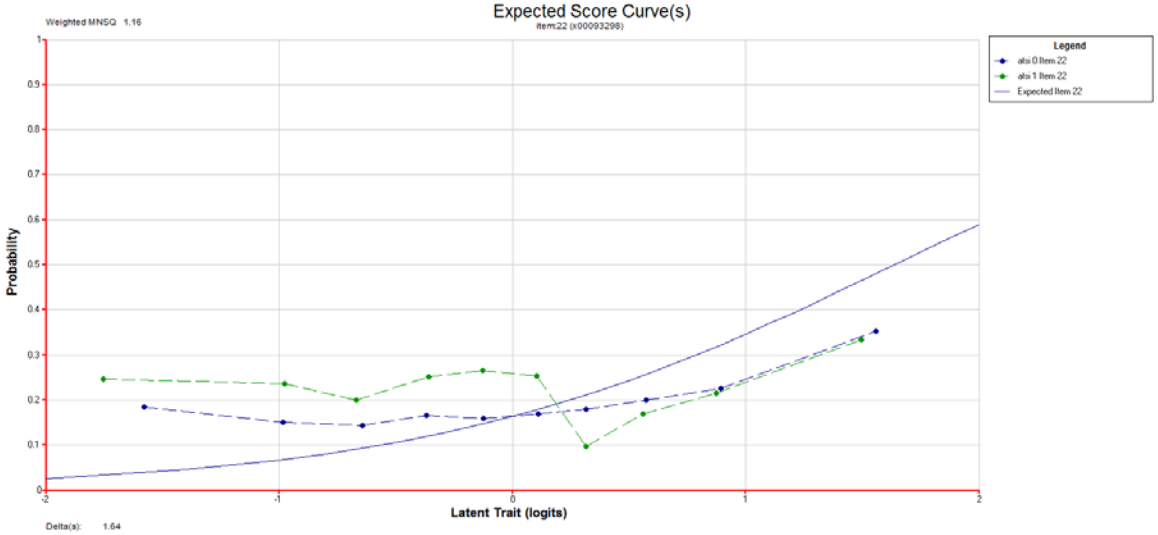
F.P.6.8. Year 7 Grammar and Punctuation

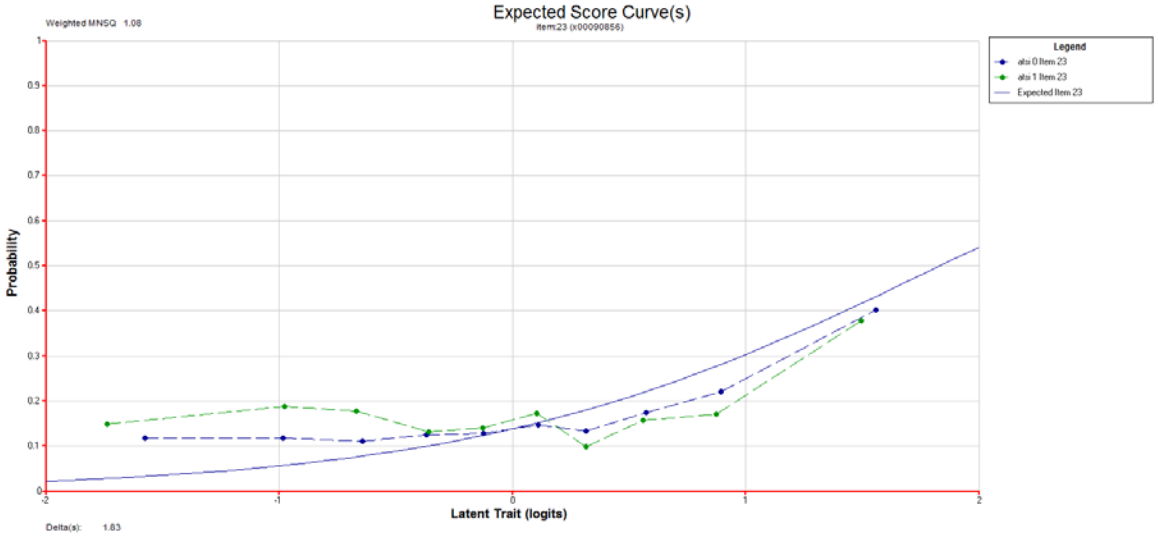




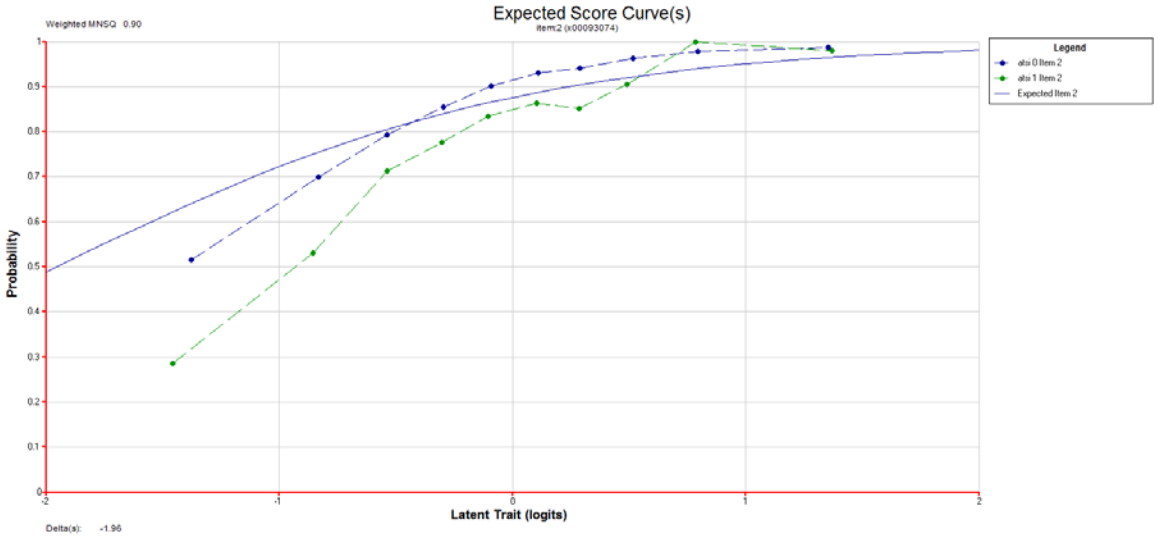


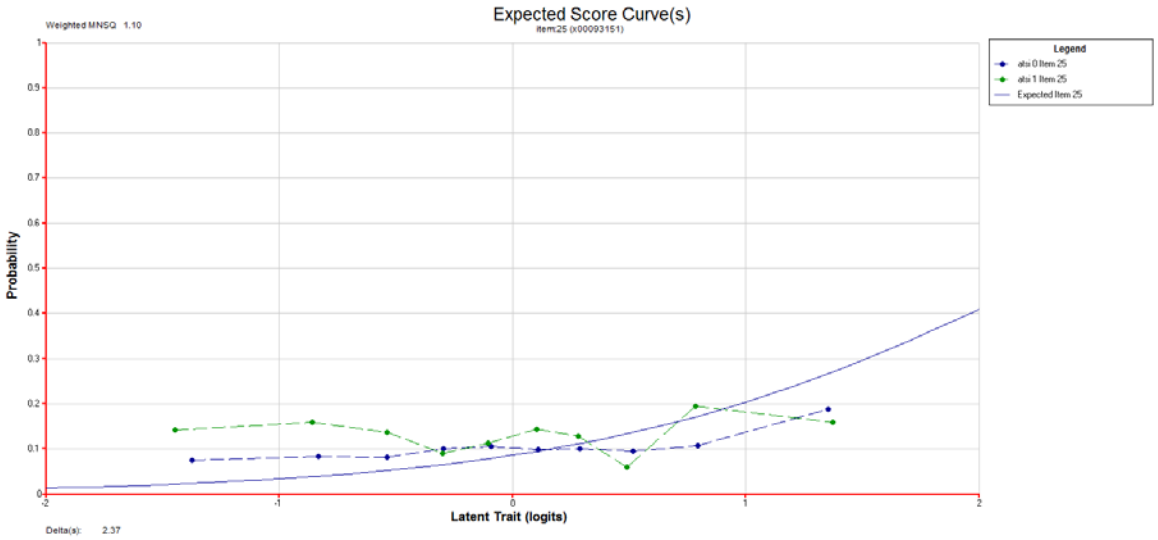

Expected Score Curve(s)
Item:20 (x00077611)
Weighted MNSQ 1.22
Legend
obs 0 Item 20
obs 1 Item 20
Expected Item 20
Probability
Latent Trait (logits)
Delta(s): 1.24


Expected Score Curve(s)
Item:22 (x00093298)
Weighted MNSQ 1.16
Legend
obs 0 Item 22
obs 1 Item 22
Expected Item 22
Probability
Latent Trait (logits)
Delta(s): 1.64

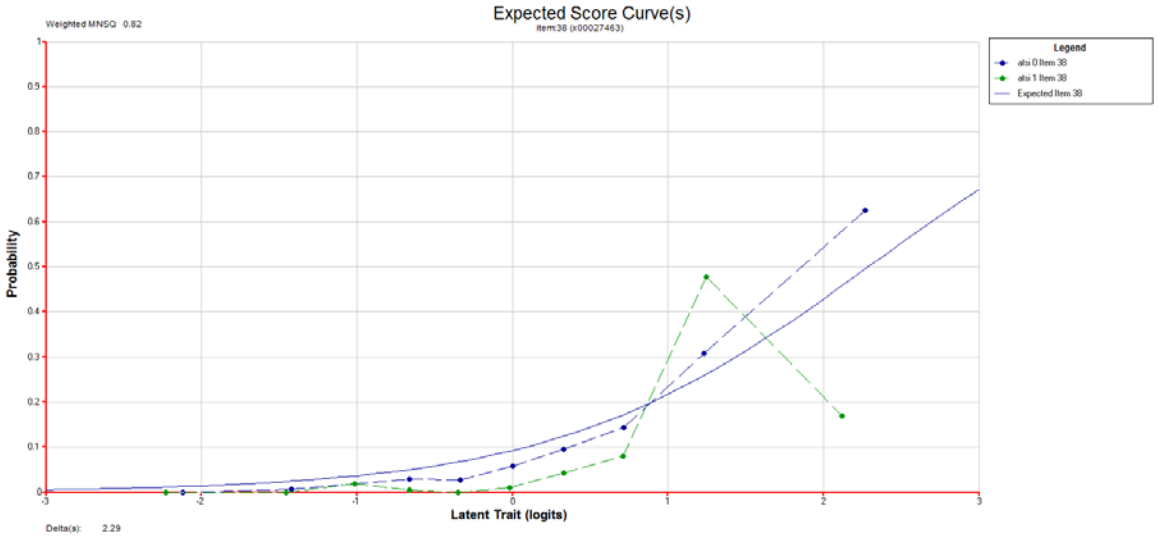

Expected Score Curve(s)
Item:23 (x00090856)
Weighted MNSQ 1.08
Legend
obs 0 Item 23
obs 1 Item 23
Expected Item 23
Probability
Latent Trait (logits)
Delta(s): 1.83

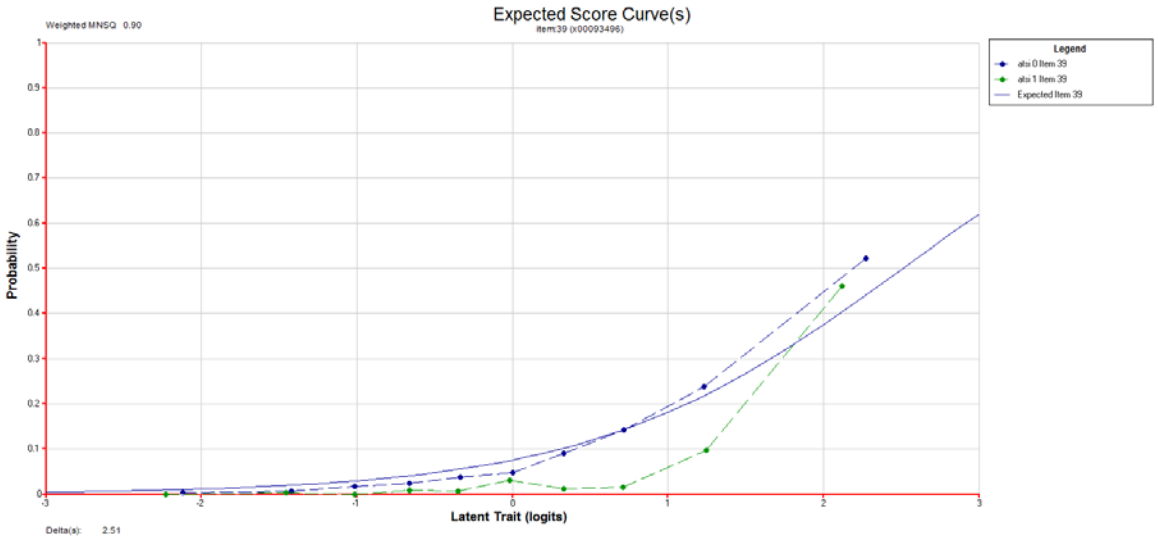
F.P.6.9. Year 9 Grammar and Punctuation

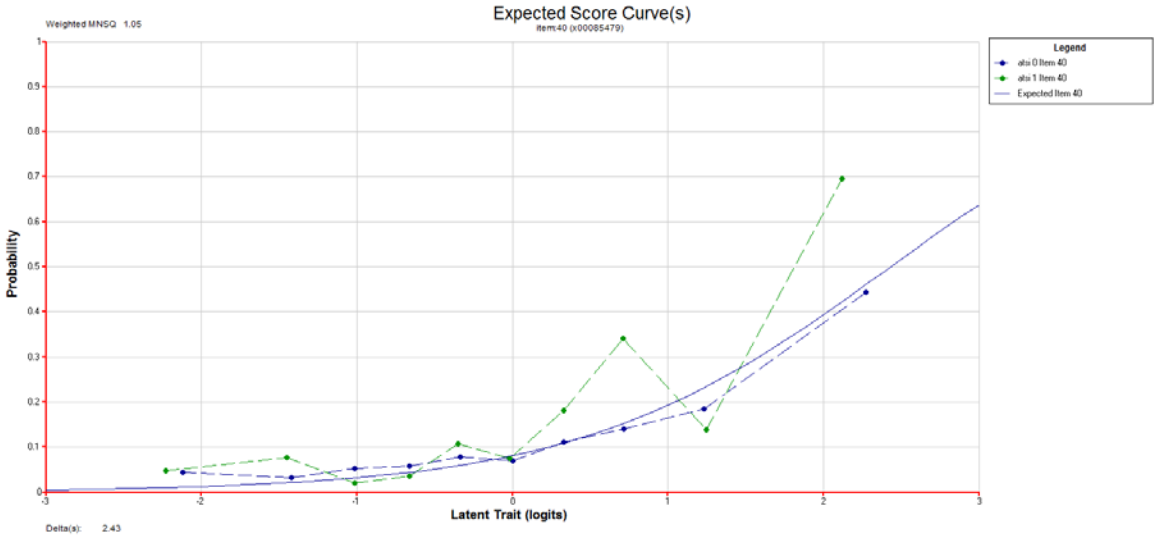




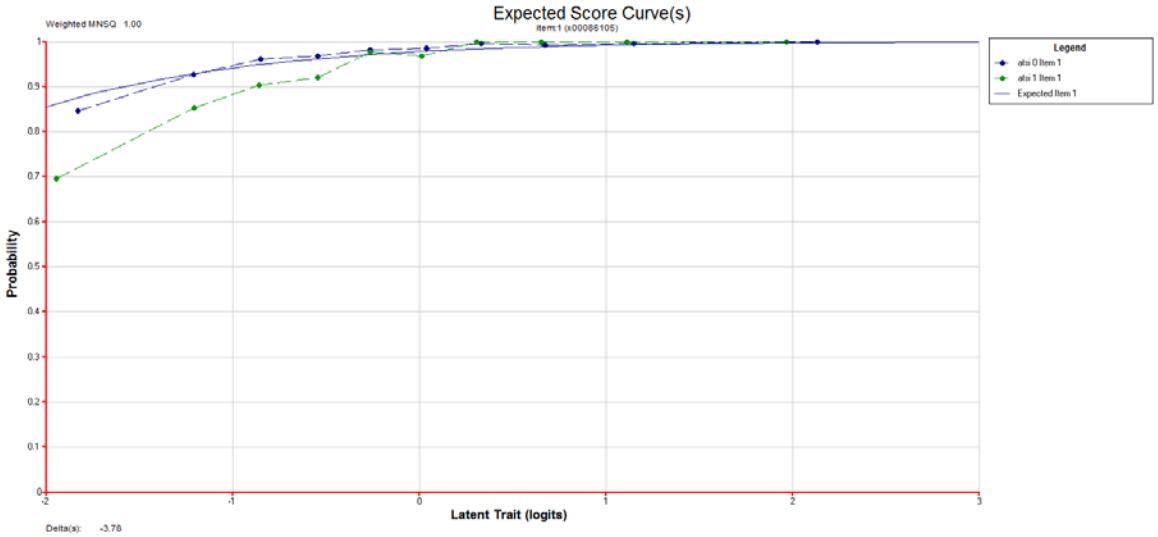
F.P.6.10. Year 5 Numeracy

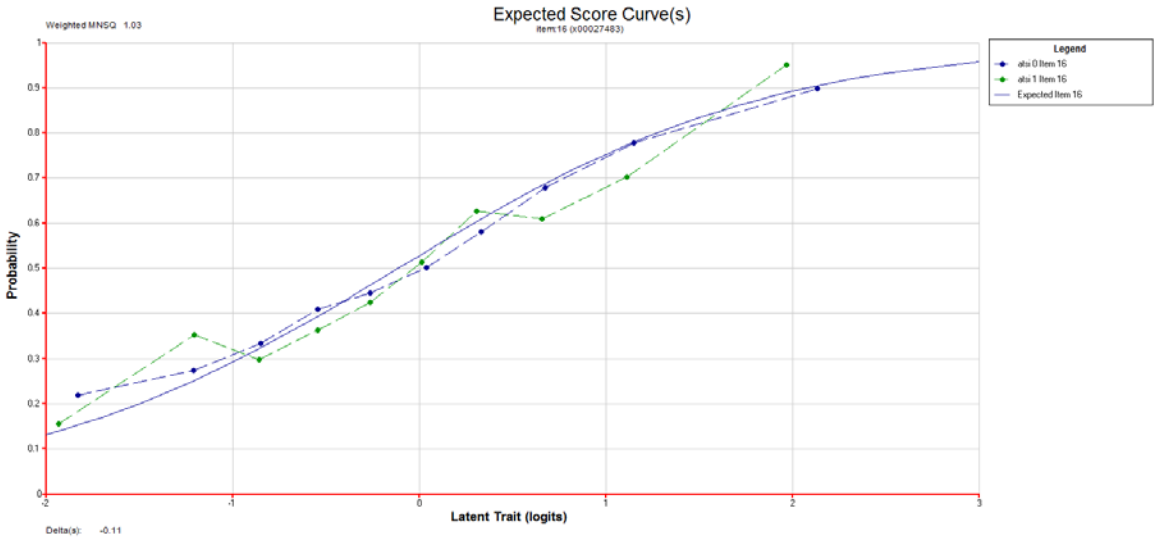


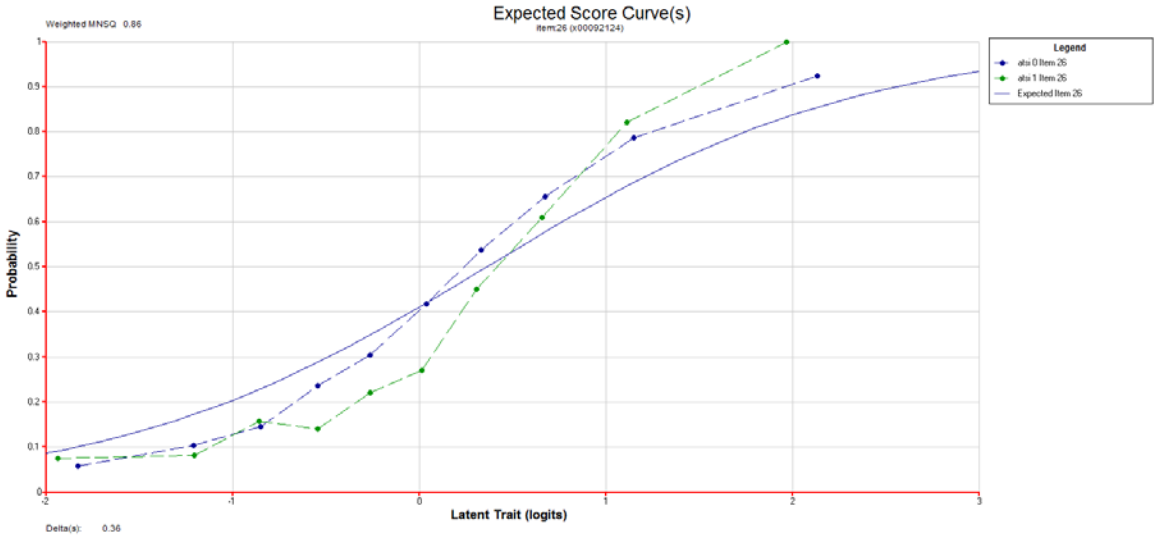


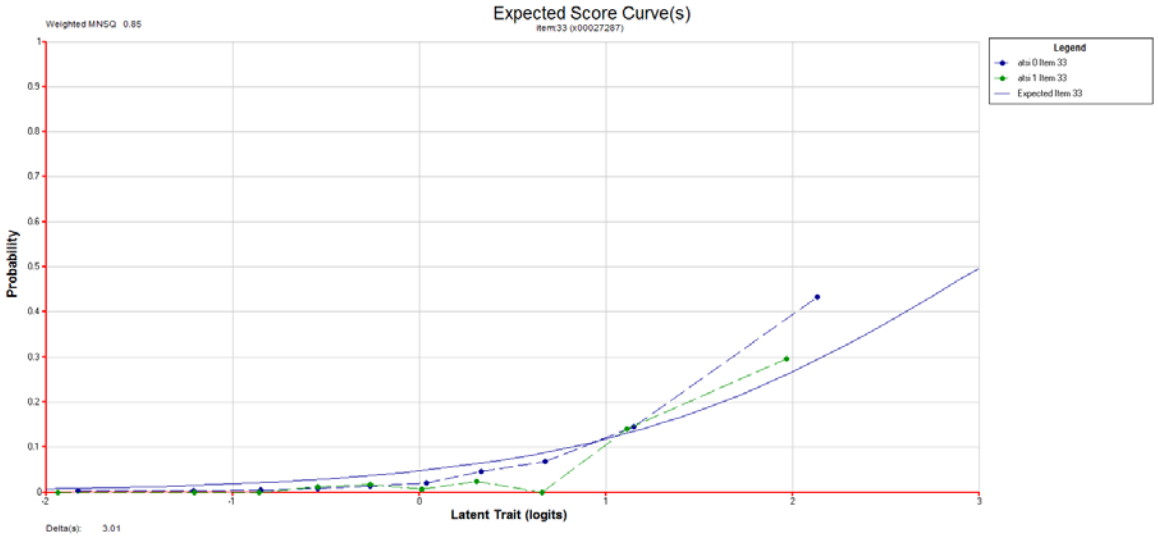


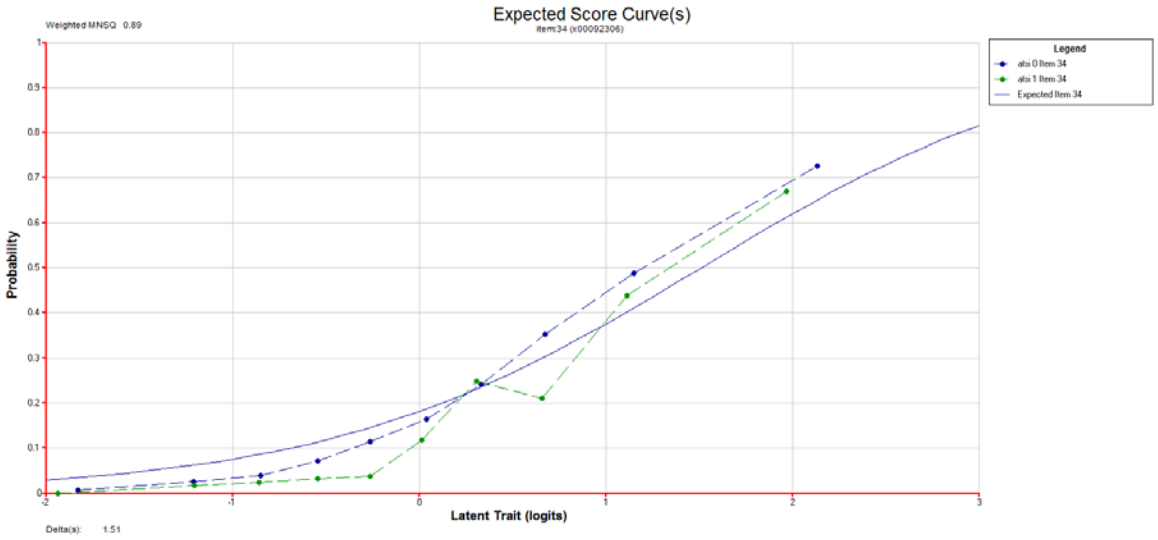
F.P.6.11. Year 7 Numeracy

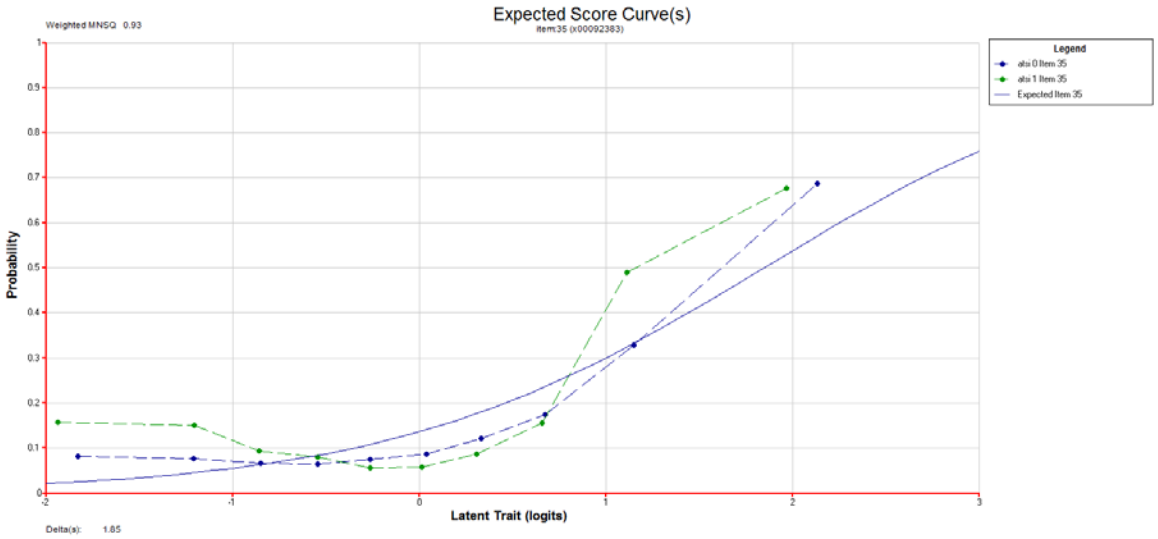


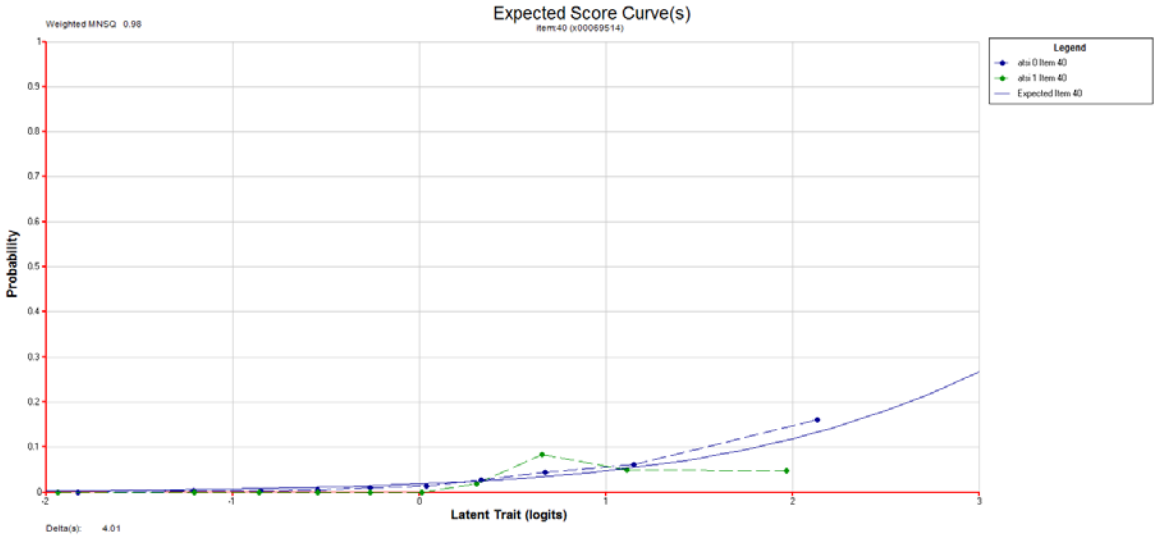


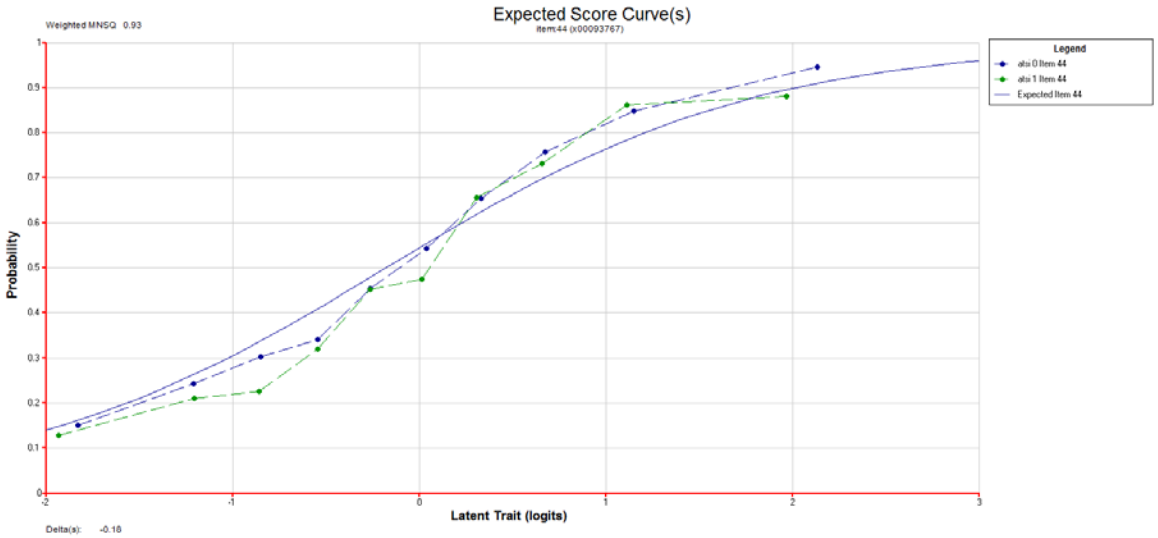


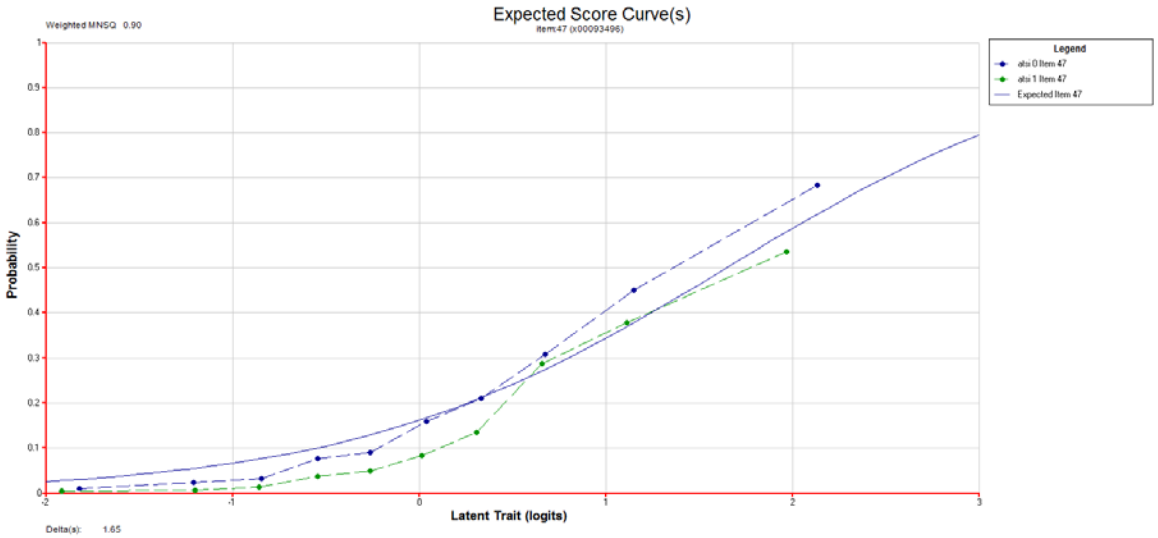

Expected Score Curve(s)
Item:33 (x00027287)
Weighted MNSQ 0.85
Legend
obs 0 Item 33
obs 1 Item 33
Expected Item 33
Probability
Latent Trait (logits)
Delta(s): 3.01

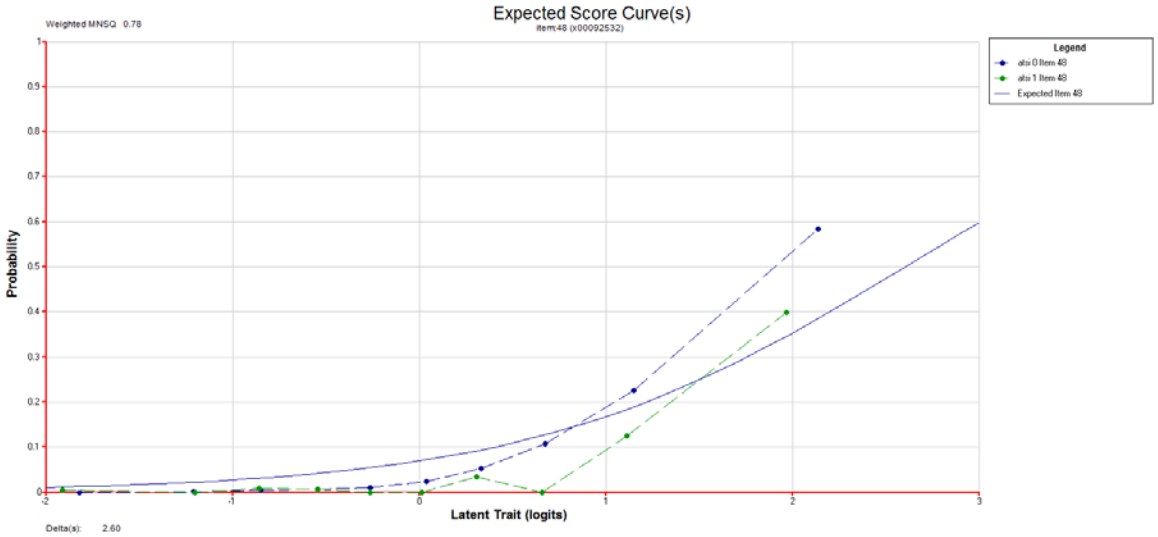

Expected Score Curve(s)
Item:34 (x00092306)
Weighted MNSQ 0.89
Legend
obs 0 Item 34
obs 1 Item 34
Expected Item 34
Probability
Latent Trait (logits)
Delta(s): 1.51


Expected Score Curve(s)
Item:35 (x00092383)
Weighted MNSQ 0.93
Legend
obs 0 Item 35
obs 1 Item 35
Expected Item 35
Probability
Latent Trait (logits)
Delta(s): 1.85

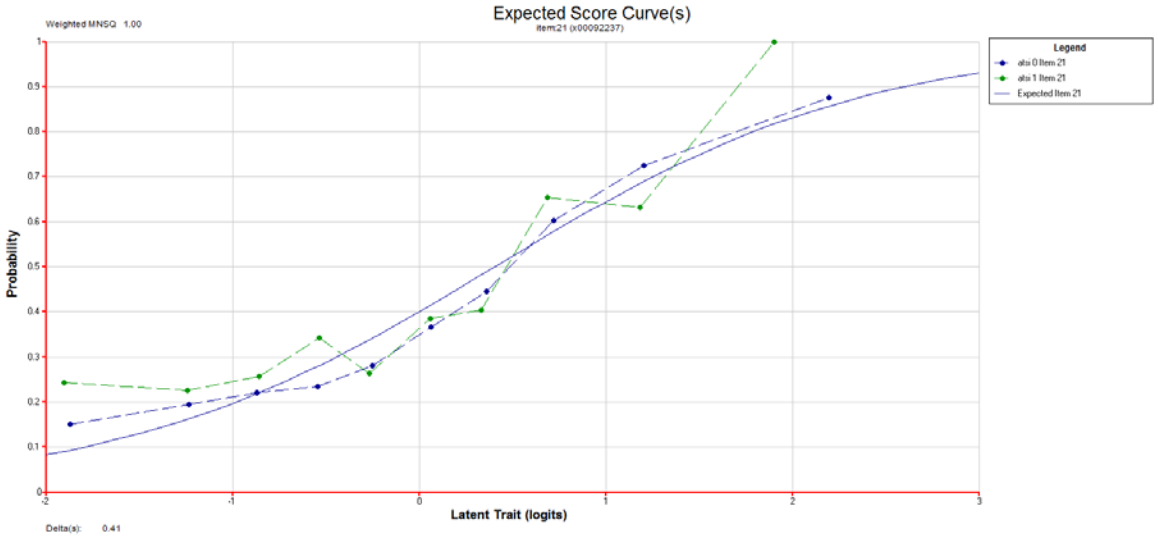

Expected Score Curve(s)
Item:40 (x0006951 4)
Weighted MNSQ 0.98
Legend
obs 0 Item 40
obs 1 Item 40
Expected Item 40
Probability
Latent Trait (logits)
Delta(s): 4.01

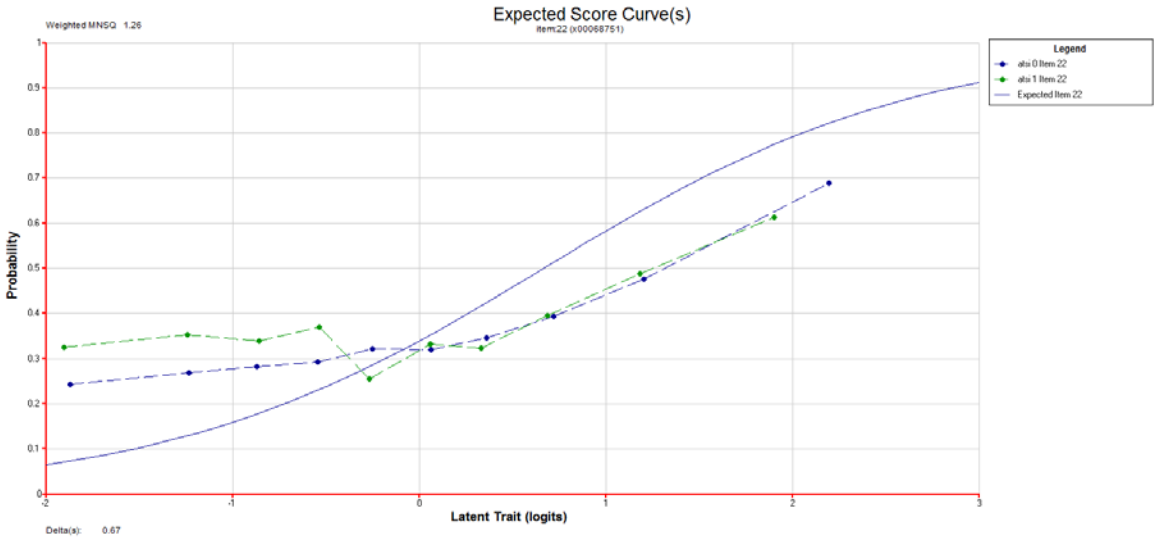

Expected Score Curve(s)
Item:44 (x00093767)
Weighted MNSQ 0.93
Legend
obs 0 Item 44
obs 1 Item 44
Expected Item 44
Probability
Latent Trait (logits)
Delta(s): -0.18

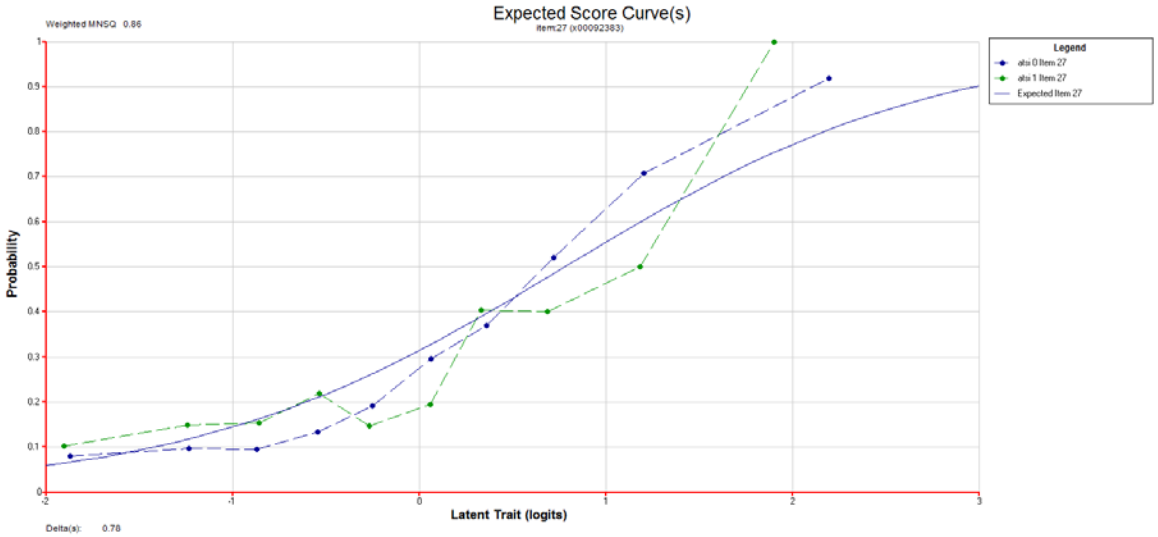

Expected Score Curve(s)
Item:47 (x00093496)
Weighted MNSQ 0.90
Legend
obs 0 Item 47
obs 1 Item 47
Expected Item 47
Probability
Latent Trait (logits)
Delta(s): 1.65

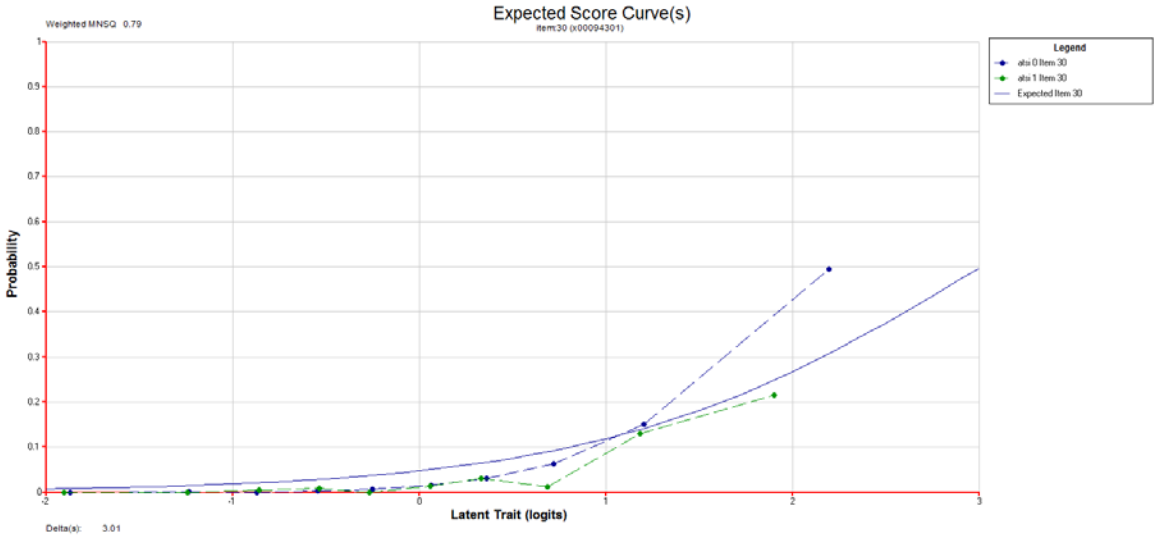

Expected Score Curve(s)
Item:48 (x00092532)
Weighted MNSQ 0.78
Probability
Latent Trait (logits)
Delta(s): 2.60
Legend
obs 0 Item 48
obs 1 Item 48
Expected Item 48

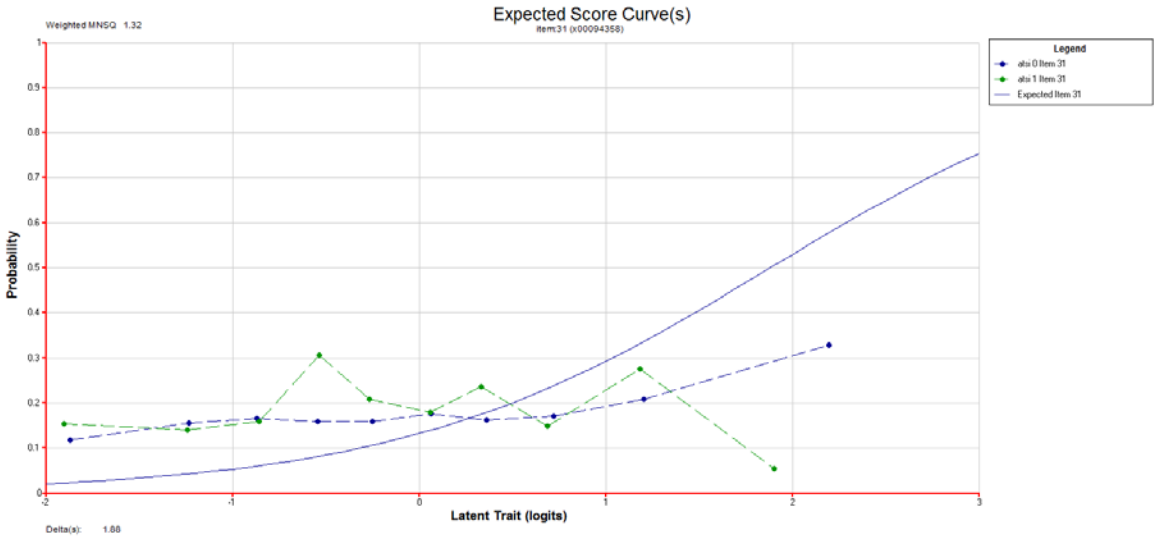
F.P.6.12. Year 9 Numeracy

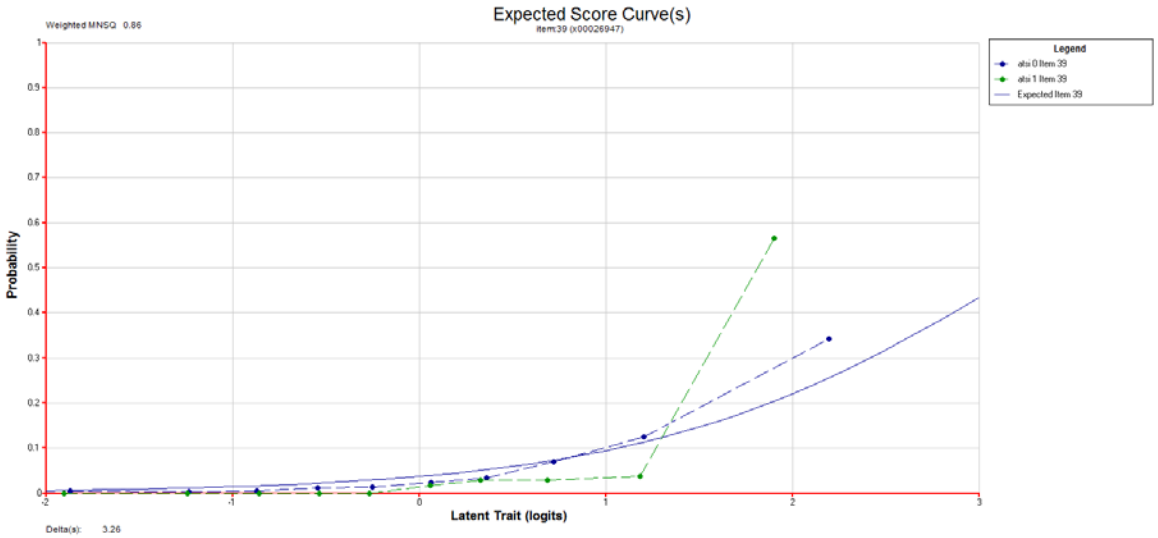


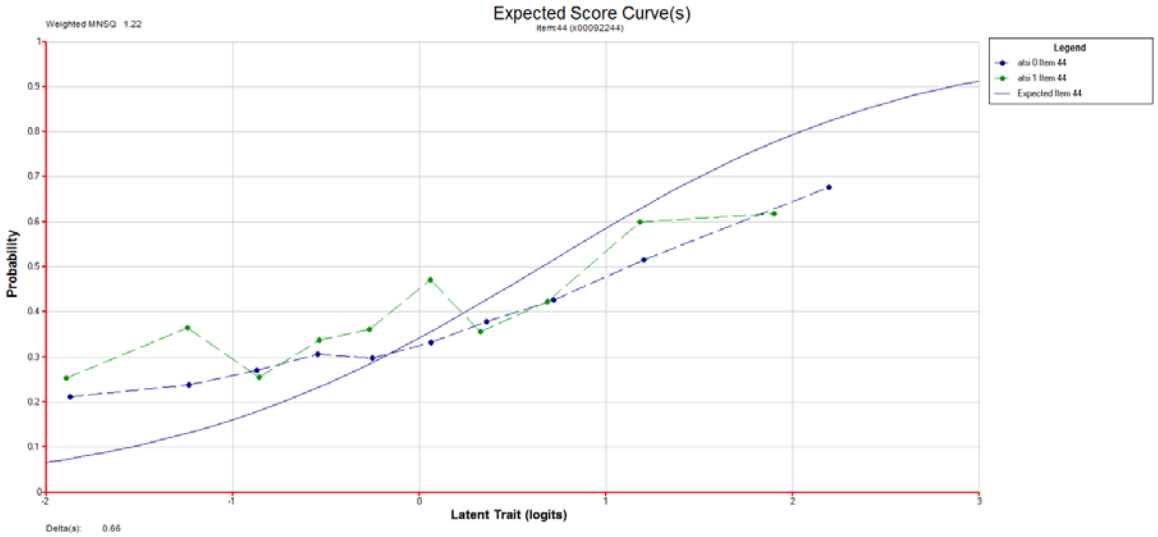


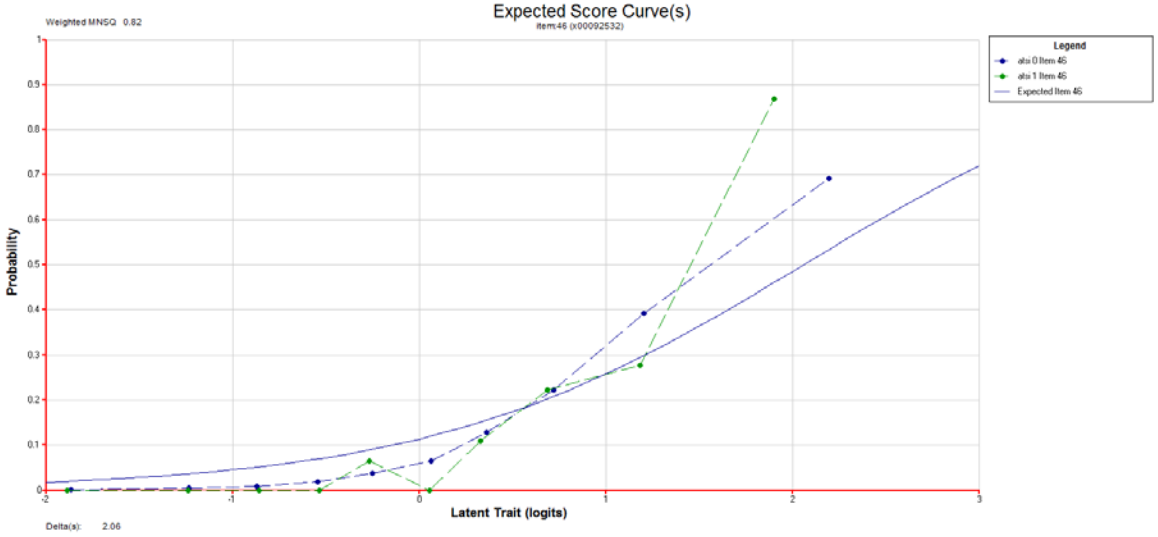



Expected Score Curve(s)
Item:30 (x00094301)
Weighted MNSQ 0.79
Legend
obs 0 Item 30
obs 1 Item 30
Expected Item 30
Probability
Latent Trait (logits)
Delta(s): 3.01


Expected Score Curve(s)
Item:31 (x00094358)
Weighted MNSQ 1.32
Legend
obs 0 Item 31
obs 1 Item 31
Expected Item 31
Probability
Latent Trait (logits)
Delta(s): 1.88


Expected Score Curve(s)
Item:39 (x00026947)
Weighted MNSQ 0.86
Legend
obs 0 Item 39
obs 1 Item 39
Expected Item 39
Probability
Latent Trait (logits)
Delta(s): 3.26


Expected Score Curve(s)
Item:44 (x00092244)
Weighted MNSQ 1.22
Legend
obs 0 Item 44
obs 1 Item 44
Expected Item 44
Probability
Latent Trait (logits)
Delta(s): 0.66


Expected Score Curve(s)
Item:46 (x00092532)
Weighted MNSQ 0.82
Legend
obs 0 Item 46
obs 1 Item 46
Expected Item 46
Probability
Latent Trait (logits)
Delta(s): 2.06

APPENDIX G.P. DIF BY DOMAIN BY YEAR LEVEL (PAPER TEST)

G.P.1. Year 3 Reading Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00076471	-0.294	0.086	1.189
2	x00078243	-0.136	0.166	0.993
3	x00076474	-0.424	-0.242	0.697
4	x00076480	-0.298	0.306	0.385
5	x00109053	-0.218	-0.270	0.511
6	x00076470	-0.062	-0.224	-0.115
7	x00098730	-0.196	0.012	0.301
8	x00076496	0.006	0.212	0.605
9	x00078247	-0.066	0.038	0.057
10	x00098731	-0.184	0.160	0.445
11	x00098732	-0.264	-0.204	0.191
12	x00076497	0.004	0.102	-0.131
13	x00098729	0.076	-0.020	-0.059
14	x00088578	-0.176	0.012	0.309
15	x00088580	0.230	0.264	-0.403
16	x00088582	-0.072	0.070	0.057
17	x00088583	0.062	0.070	-0.423
18	x00088585	0.208	-0.048	-0.359
19	x00088584	0.162	-0.050	-0.197
20	x00093063	0.092	-0.042	-0.471
21	x00093066	0.000	-0.264	-0.193
22	x00093067	-0.024	0.072	-0.085
23	x00093070	0.414	0.084	-0.755
24	x00093071	0.094	0.056	0.145
25	x00093065	0.104	-0.174	-0.321
26	x00093072	0.128	0.044	-0.305
27	x00092833	0.052	-0.126	-0.277
28	x00092835	0.110	-0.016	-0.621
29	x00092826	0.326	-0.088	-0.519
30	x00092830	0.084	-0.148	-0.351
31	x00092836	0.368	-0.044	-0.257
32	x00092834	0.224	0.024	0.239
33	x00088063	0.014	-0.146	-0.175
34	x00092884	-0.080	0.032	0.513
35	x00088062	-0.174	0.058	-0.263
36	x00092885	-0.014	0.230	-0.883
37	x00088048	-0.090	0.026	0.533

G.P.2. Year 3 Reading Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00076471	-	-0.181	1.440*	-0.285	-0.254	-0.125	-0.660	0.066
2	x00078243	-	-0.136	1.175*	-0.150	-0.285	-0.131	-0.578	0.105
3	x00076474	-	-0.278	1.019*	-0.242	0.000	0.187	-0.406	-0.280
4	x00076480	-	0.034	0.292	-0.003	-0.043	-0.130	-0.169	0.018
5	x00109053	-	0.029	0.163	0.029	0.039	0.047	-0.378	0.071
6	x00076470	-	0.095	-0.480	-0.057	0.155	0.120	0.175	-0.009
7	x00098730	-	-0.031	0.244	-0.135	0.007	0.055	-0.097	-0.043
8	x00076496	-	-0.149	0.664	-0.103	-0.123	-0.033	-0.207	-0.049
9	x00078247	-	-0.169	-0.037	0.112	-0.011	0.122	-0.056	0.038
10	x00098731	-	-0.071	0.176	-0.005	0.042	-0.057	0.004	-0.088
11	x00098732	-	-0.176	0.284	-0.093	0.117	0.104	-0.239	0.003
12	x00076497	-	0.025	-0.167	0.083	-0.203	-0.009	0.315	-0.042
13	x00098729	-	0.017	-0.303	0.023	-0.045	0.108	0.118	0.081
14	x00088578	-	-0.131	0.472	-0.072	-0.112	-0.259	-0.016	0.118
15	x00088580	-	0.254	-0.900	0.221	0.006	0.092	0.213	0.115
16	x00088582	-	-0.062	0.193	0.042	-0.089	-0.040	0.034	-0.078
17	x00088583	-	-0.089	0.021	-0.101	0.133	-0.201	0.197	0.040
18	x00088585	-	-0.118	0.106	-0.080	0.172	0.068	0.007	-0.155
19	x00088584	-	0.103	-0.061	-0.018	-0.079	-0.103	0.146	0.012
20	x00093063	-	0.032	-0.416	0.048	0.055	0.138	0.109	0.033
21	x00093066	-	0.045	-0.444	-0.047	0.175	0.210	0.007	0.053
22	x00093067	-	0.033	-0.125	0.018	0.023	-0.137	0.167	0.020
23	x00093070	-	0.082	-0.597	0.016	-0.006	0.026	0.399*	0.080
24	x00093071	-	0.037	0.015	0.201	-0.014	-0.150	-0.062	-0.026
25	x00093065	-	0.120	-0.099	-0.067	0.083	-0.034	0.052	-0.055
26	x00093072	-	0.200	-0.536	0.239	-0.132	-0.034	0.179	0.083
27	x00092833	-	0.046	-0.105	-0.117	0.172	0.018	0.078	-0.093
28	x00092835	-	0.099	-0.622	0.111	0.015	0.067	0.265	0.064
29	x00092826	-	0.126	-0.520	0.153	0.072	0.027	0.194	-0.052
30	x00092830	-	-0.025	-0.067	0.013	0.016	0.019	0.019	0.025
31	x00092836	-	0.039	-0.395	0.178	0.085	-0.114	0.086	0.122
32	x00092834	-	0.070	-0.002	-0.105	0.121	-0.030	-0.030	-0.024
33	x00088063	-	-0.019	-0.267	0.064	0.057	0.050	0.133	-0.019
34	x00092884	-	-0.115	0.430	-0.098	-0.175	0.245	-0.262	-0.025
35	x00088062	-	0.014	-0.226	0.030	0.006	0.075	0.106	-0.005
36	x00092885	-	0.203	-0.335	0.078	-0.019	-0.148	0.231	-0.011
37	x00088048	-	0.047	0.011	0.117	0.038	-0.046	-0.076	-0.092

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.3. Year 5 Reading Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00064537	-0.498	0.182	1.529
2	x00064538	-0.118	-0.092	0.239
3	x00064539	-0.566	0.430	1.325
4	x00064541	-0.312	0.054	0.307
5	x00064540	-0.400	0.184	0.717
6	x00064536	-0.166	0.300	0.247
7	x00088578	-0.154	-0.006	0.485
8	x00088580	0.252	0.246	-0.228
9	x00088582	-0.050	0.052	0.233
10	x00088583	0.084	0.052	-0.248
11	x00088585	0.230	-0.066	-0.184
12	x00088584	0.184	-0.068	-0.022
13	x00093063	0.114	-0.060	-0.296
14	x00093066	0.022	-0.282	-0.018
15	x00093067	-0.002	0.054	0.090
16	x00093070	0.436	0.066	-0.580
17	x00093071	0.116	0.038	0.321
18	x00093065	0.126	-0.192	-0.146
19	x00093072	0.150	0.026	-0.130
20	x00074098	-0.200	-0.124	0.111
21	x00074099	-0.030	-0.006	-0.038
22	x00074094	-0.038	0.004	0.015
23	x00074095	-0.090	-0.084	-0.318
24	x00074102	0.184	0.266	0.347
25	x00074101	0.240	-0.066	0.131
26	x00074100	0.096	-0.238	0.581
27	x00093013	-0.162	-0.220	-0.604
28	x00093014	0.078	0.106	-0.134
29	x00093020	-0.082	-0.196	-0.390
30	x00093021	0.158	-0.006	-0.122
31	x00093022	-0.016	-0.098	-0.460
32	x00093019	0.010	0.064	-0.592
33	x00093018	0.180	-0.020	-0.682
34	x00092328	-0.038	0.010	-0.498
35	x00092331	-0.138	-0.282	0.607
36	x00092332	0.090	-0.032	-0.380
37	x00092333	0.016	0.088	-0.024
38	x00092335	-0.138	-0.300	0.085
39	x00092337	0.170	0.334	-0.764
40	x00100103	0.256	-0.134	-0.516

G.P.4. Year 5 Reading Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00064537	-	-0.228	1.652*	-0.257	-0.225	0.113	-0.828	-0.228
2	x00064538	-	-0.140	0.159	-0.037	0.100	0.104	-0.140	-0.047
3	x00064539	-	-0.449	1.702*	-0.453	-0.079	0.065	-0.659	-0.128
4	x00064541	-	0.015	0.490	0.038	-0.132	-0.094	-0.218	-0.099
5	x00064540	-	-0.289	0.507	-0.159	0.228	0.222	-0.436	-0.073
6	x00064536	-	0.018	-0.069	-0.078	-0.046	0.178	-0.013	0.011
7	x00088578	-	-0.282	0.530	-0.016	-0.120	0.016	-0.169	0.042
8	x00088580	-	0.088	0.007	-0.056	0.018	-0.074	-0.039	0.057
9	x00088582	-	-0.141	0.424	-0.120	-0.067	0.167	-0.144	-0.119
10	x00088583	-	0.041	0.272	-0.132	-0.040	-0.170	0.005	0.025
11	x00088585	-	0.028	-0.243	-0.008	0.251	0.227	-0.224	-0.031
12	x00088584	-	0.175	-0.518	0.030	0.013	-0.116	0.302	0.115
13	x00093063	-	-0.043	-0.212	-0.005	0.025	0.211	0.019	0.005
14	x00093066	-	-0.136	0.300	-0.172	0.137	0.158	-0.062	-0.224
15	x00093067	-	-0.022	-0.017	0.008	-0.036	-0.074	0.135	0.006
16	x00093070	-	0.052	-0.244	-0.044	0.078	-0.070	0.112	0.115
17	x00093071	-	-0.239	0.510	-0.018	-0.135	0.124	-0.177	-0.065
18	x00093065	-	-0.108	0.002	-0.003	0.081	0.018	0.017	-0.007
19	x00093072	-	-0.050	0.465	0.030	-0.209	-0.026	-0.147	-0.063
20	x00074098	-	0.031	0.190	-0.103	-0.101	-0.001	-0.047	0.031
21	x00074099	-	-0.049	-0.049	0.053	-0.055	0.060	0.109	-0.069
22	x00074094	-	0.082	0.121	-0.036	-0.042	-0.219	0.081	0.014
23	x00074095	-	0.120	-0.125	-0.053	-0.022	-0.115	0.175	0.020
24	x00074102	-	0.242	-0.428	0.147	0.057	-0.051	-0.073	0.105
25	x00074101	-	0.073	-0.309	0.140	-0.045	0.015	0.070	0.056
26	x00074100	-	0.020	-0.002	0.108	0.080	-0.080	-0.095	-0.030
27	x00093013	-	0.056	-0.241	0.010	0.040	-0.025	0.194	-0.034
28	x00093014	-	0.048	-0.754	0.133	0.220	0.222	0.074	0.057
29	x00093020	-	0.055	-0.206	0.063	0.002	-0.268	0.335	0.019
30	x00093021	-	0.031	-0.274	0.141	-0.031	-0.127	0.183	0.075
31	x00093022	-	0.055	-0.537	0.072	0.167	0.089	0.191	-0.038
32	x00093019	-	0.184	-0.597	0.002	0.195	0.022	0.094	0.100
33	x00093018	-	0.208	-0.501	0.119	-0.040	-0.015	0.182	0.047
34	x00092328	-	0.166	-0.496	0.203	-0.046	-0.149	0.287	0.034
35	x00092331	-	0.016	-0.024	-0.011	-0.241	-0.021	0.137	0.144
36	x00092332	-	0.145	-0.484	0.121	0.028	-0.020	0.139	0.070
37	x00092333	-	0.013	0.037	-0.034	-0.006	-0.081	0.109	-0.039
38	x00092335	-	-0.014	-0.157	0.109	0.078	0.049	0.092	-0.156
39	x00092337	-	0.158	-0.425	0.160	-0.164	-0.274	0.346	0.199
40	x00100103	-	0.069	-0.458	0.108	0.086	0.010	0.081	0.103

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.5. Year 7 Reading Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00088568	-0.151	-0.030	0.342
2	x00088571	-0.313	-0.038	0.540
3	x00088573	-0.655	0.450	0.668
4	x00088575	-0.147	-0.032	0.452
5	x00088567	-0.315	0.686	0.604
6	x00088570	-0.255	0.360	0.358
7	x00072763	-0.347	0.002	0.342
8	x00072648	-0.087	0.292	0.530
9	x00072750	0.173	-0.336	0.106
10	x00072751	0.005	-0.008	0.652
11	x00098703	-0.181	0.048	0.232
12	x00098705	0.177	-0.090	-0.516
13	x00074098	-0.133	-0.152	0.120
14	x00074099	0.037	-0.034	-0.028
15	x00074094	0.029	-0.024	0.024
16	x00074095	-0.023	-0.112	-0.308
17	x00074102	0.251	0.238	0.356
18	x00074101	0.307	-0.094	0.140
19	x00074100	0.163	-0.266	0.590
20	x00093013	-0.095	-0.248	-0.594
21	x00093014	0.145	0.078	-0.124
22	x00093020	-0.015	-0.224	-0.380
23	x00093021	0.225	-0.034	-0.112
24	x00093022	0.051	-0.126	-0.450
25	x00093019	0.077	0.036	-0.582
26	x00093018	0.247	-0.048	-0.672
27	x00093483	-0.231	0.022	0.428
28	x00093485	0.197	-0.072	-0.282
29	x00093484	0.351	-0.154	-0.152
30	x00093490	-0.081	0.194	0.056
31	x00093489	0.175	-0.034	0.204
32	x00093491	-0.077	0.168	-0.294
33	x00093482	0.361	0.058	0.412
34	x00092054	-0.131	0.034	0.104
35	x00092058	0.077	-0.168	-0.598
36	x00092056	0.251	-0.050	-0.900
37	x00092060	-0.073	-0.096	-0.476
38	x00092052	0.321	0.022	-0.776
39	x00088251	-0.111	-0.196	0.090
40	x00088250	-0.075	-0.144	-0.064
41	x00088237	-0.249	0.110	0.262
42	x00088242	-0.031	-0.126	-0.262
43	x00088246	-0.037	0.144	0.002
44	x00088240	0.019	-0.148	0.784
45	x00092657	-0.143	-0.236	-0.364

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
46	x00092658	-0.243	0.192	0.242
47	x00092662	0.181	0.154	-0.406
48	x00092663	0.297	0.068	-0.004
49	x00092674	0.075	-0.114	0.146
50	x00092673	0.131	0.056	-0.438

G.P.6. Year 7 Reading Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00088568	-	-0.015	0.338	-0.173	0.117	0.111	-0.272*	-0.105
2	x00088571	-	-0.013	0.331	-0.121	0.092	0.052	-0.247	-0.095
3	x00088573	-	-0.144	0.879*	-0.202	-0.171	0.045	-0.160	-0.247
4	x00088575	-	-0.040	0.210	-0.102	0.003	0.164	-0.192	-0.045
5	x00088567	-	-0.012	0.480	-0.099	-0.185	-0.054	-0.049	-0.080
6	x00088570	-	-0.089	0.431	-0.170	0.050	-0.074	-0.086	-0.062
7	x00072763	-	-0.129	0.541	-0.048	-0.222	0.061	-0.141	-0.062
8	x00072648	-	-0.049	0.372	-0.342	-0.037	0.255	-0.118	-0.081
9	x00072750	-	0.080	0.015	0.036	-0.217	0.328	-0.114	-0.128
10	x00072751	-	-0.042	0.456	0.018	-0.094	0.017	-0.200	-0.155
11	x00098703	-	0.064	0.089	-0.018	-0.107	0.009	-0.008	-0.029
12	x00098705	-	0.223	-0.712	0.267	0.067	-0.017	-0.026	0.197
13	x00074098	-	-0.026	0.225	-0.028	-0.088	-0.110	-0.005	0.033
14	x00074099	-	-0.015	-0.013	0.083	-0.127	-0.039	0.044	0.066
15	x00074094	-	0.051	-0.243	0.043	0.039	-0.118	0.131	0.097
16	x00074095	-	0.042	-0.093	0.012	-0.047	-0.009	0.093	0.002
17	x00074102	-	0.070	0.044	0.111	-0.157	-0.155	0.003	0.085
18	x00074101	-	0.043	-0.083	-0.001	-0.024	-0.012	0.062	0.014
19	x00074100	-	0.112	0.164	0.013	-0.161	0.029	-0.066	-0.092
20	x00093013	-	0.182	-0.450	-0.084	-0.006	0.102	0.143	0.113
21	x00093014	-	-0.058	0.035	0.118	-0.012	0.009	-0.131	0.038
22	x00093020	-	-0.168	0.067	0.014	0.091	-0.183	0.069	0.109
23	x00093021	-	-0.028	-0.179	0.023	0.092	0.011	0.095	-0.015
24	x00093022	-	-0.138	-0.231	0.151	0.193	0.048	0.034	-0.057
25	x00093019	-	0.068	-0.396	0.204	0.048	-0.058	0.137	-0.003
26	x00093018	-	-0.027	-0.187	0.105	0.220	-0.018	-0.089	-0.003
27	x00093483	-	-0.091	0.332	-0.022	-0.054	0.108	-0.174	-0.097
28	x00093485	-	-0.008	-0.286	-0.025	0.093	0.072	0.152	0.003
29	x00093484	-	0.046	-0.454	0.124	0.077	-0.047	0.125	0.129
30	x00093490	-	0.087	0.094	-0.053	0.015	-0.122	-0.005	-0.018
31	x00093489	-	0.050	0.086	0.078	-0.150	0.038	0.020	-0.122
32	x00093491	-	0.062	-0.207	-0.103	0.204	-0.120	0.106	0.058
33	x00093482	-	-0.025	0.154	0.022	0.004	0.030	-0.069	-0.116
34	x00092054	-	0.016	-0.279	0.037	0.083	-0.034	0.065	0.111
35	x00092058	-	0.045	-0.576	0.062	0.165	0.100	0.071	0.133
36	x00092056	-	0.159	-0.528	-0.044	0.140	-0.038	0.182	0.129
37	x00092060	-	0.140	-0.328	0.034	0.072	-0.041	0.132	-0.009
38	x00092052	-	0.023	-0.411	0.021	0.140	-0.023	0.135	0.115
39	x00088251	-	0.075	-0.059	-0.007	0.027	0.076	-0.060	-0.053
40	x00088250	-	-0.069	0.149	-0.008	-0.087	-0.036	0.017	0.034
41	x00088237	-	-0.108	0.128	0.045	0.010	0.113	-0.089	-0.100
42	x00088242	-	-0.129	-0.160	-0.096	0.231	0.060	0.066	0.028
43	x00088246	-	0.081	-0.117	0.178	-0.158	0.006	-0.021	0.031
44	x00088240	-	-0.240*	0.340	-0.040	0.040	0.120	-0.118	-0.103
45	x00092657	-	-0.021	-0.073	-0.016	0.069	0.010	0.045	-0.014

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
46	x00092658		-0.080	0.105	0.018	0.067	-0.247	0.073	0.062
47	x00092662		0.053	-0.171	-0.059	0.051	-0.018	0.106	0.038
48	x00092663		-0.005	0.100	0.104	-0.071	-0.091	-0.010	-0.027
49	x00092674	-	0.022	-0.096	-0.047	-0.015	-0.077	0.164	0.048
50	x00092673	-	-0.026	0.163	-0.018	-0.310	-0.235	0.180	0.246

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.7. Year 9 Reading Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00100137	-0.387	0.200	0.460
2	x00077666	-0.701	0.286	0.704
3	x00077561	-0.551	0.018	0.666
4	x00078171	-0.017	-0.446	-1.072
5	x00100139	-0.457	0.128	0.482
6	x00077562	0.337	-0.046	-0.338
7	x00088924	-0.065	-0.062	-0.424
8	x00088928	-0.183	0.564	0.552
9	x00088930	0.023	0.112	-0.186
10	x00088932	-0.035	0.000	0.150
11	x00088933	0.083	0.030	0.248
12	x00088938	-0.093	-0.176	-0.144
13	x00078153	-0.097	-0.116	0.140
14	x00078174	0.297	0.262	-0.010
15	x00078158	0.195	-0.032	0.036
16	x00078182	-0.135	-0.486	-0.316
17	x00078176	0.231	-0.120	-0.108
18	x00078159	0.347	0.480	0.410
19	x00075455	-0.049	-0.044	0.320
20	x00075457	0.415	0.072	-0.048
21	x00075460	0.107	0.074	0.212
22	x00075464	0.053	0.142	-0.262
23	x00075462	0.085	0.142	0.112
24	x00075463	-0.047	-0.010	-0.058
25	x00093483	-0.265	0.012	0.360
26	x00093485	0.163	-0.082	-0.350
27	x00093484	0.317	-0.164	-0.220
28	x00093490	-0.115	0.184	-0.012
29	x00093489	0.141	-0.044	0.136
30	x00093491	-0.111	0.158	-0.362
31	x00093482	0.327	0.048	0.344
32	x00088077	0.217	0.008	-0.522
33	x00088212	-0.045	0.074	0.192
34	x00088208	0.133	0.102	0.330
35	x00088210	0.461	-0.192	-0.374
36	x00088214	0.115	-0.106	0.004
37	x00088215	0.059	-0.138	0.240
38	x00088251	-0.145	-0.206	0.022
39	x00088250	-0.109	-0.154	-0.132
40	x00088237	-0.283	0.100	0.194
41	x00088242	-0.065	-0.136	-0.330
42	x00088246	-0.071	0.134	-0.066
43	x00088240	-0.015	-0.158	0.716
44	x00092697	0.027	0.042	-0.120
45	X00092698	0.111	-0.012	0.114

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
46	x00092699	0.105	-0.028	-0.346
47	x00092703	0.005	0.012	-0.598
48	x00092702	0.031	-0.068	-0.386
49	x00092704	-0.201	-0.122	-0.206
50	x00092696	-0.135	-0.260	-0.138

G.P.8. Year 9 Reading Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00100137	-	-0.124	0.455	-0.025	-0.105	-0.197	0.066	-0.069
2	x00077666	-	-0.031	0.784	0.142	-0.047	-0.205	-0.472*	-0.171
3	x00077561	-	-0.288	0.623	0.115	0.064	-0.032	-0.163	-0.321
4	x00078171	-	0.188	-0.843	0.118	-0.038	-0.054	0.183	0.445*
5	x00100139	-	-0.032	0.529	-0.160	-0.117	0.091	-0.227	-0.084
6	x00077562	-	-0.070	-0.204	0.017	0.055	-0.017	0.019	0.198
7	x00088924	-	0.077	-0.175	-0.176	0.124	-0.045	0.094	0.102
8	x00088928	-	-0.184	0.647	-0.150	-0.121	-0.031	-0.022	-0.139
9	x00088930	-	0.138	-0.087	0.024	-0.085	-0.157	0.069	0.098
10	x00088932	-	-0.052	0.193	-0.055	0.049	-0.004	-0.057	-0.075
11	x00088933	-	0.105	0.037	-0.058	0.029	-0.035	0.115	-0.194
12	x00088938	-	-0.116	-0.171	0.021	0.119	0.035	0.135	-0.024
13	x00078153	-	-0.155	0.419	-0.105	0.074	0.139	-0.184	-0.187
14	x00078174	-	0.121	-0.021	0.130	-0.097	-0.028	-0.024	-0.081
15	x00078158	-	-0.006	-0.005	-0.016	-0.015	0.102	-0.019	-0.040
16	x00078182	-	-0.072	-0.109	0.087	-0.037	0.037	-0.073	0.167
17	x00078176	-	-0.021	-0.322	0.062	0.133	0.072	0.001	0.076
18	x00078159	-	0.072	0.122	-0.004	0.065	0.007	-0.203	-0.059
19	x00075455	-	-0.066	0.163	-0.056	-0.002	0.082	-0.051	-0.070
20	x00075457	-	0.068	-0.380	0.037	0.045	-0.033	0.185	0.079
21	x00075460	-	0.050	-0.031	0.076	0.055	0.013	0.065	-0.228
22	x00075464	-	0.037	-0.232	-0.067	-0.021	-0.008	0.144	0.148
23	x00075462	-	0.050	-0.087	0.085	0.043	-0.153	0.031	0.032
24	x00075463	-	-0.144	-0.135	0.091	0.021	0.150	0.030	-0.013
25	x00093483	-	-0.057	0.466	-0.127	0.019	0.025	-0.148	-0.179
26	x00093485	-	-0.062	-0.151	-0.057	0.051	0.031	0.223*	-0.037
27	x00093484	-	0.054	-0.271	0.083	0.067	0.017	0.057	-0.006
28	x00093490	-	0.104	-0.019	-0.067	-0.097	-0.084	0.021	0.142
29	x00093489	-	0.086	0.033	0.066	-0.121	-0.030	-0.012	-0.021
30	x00093491	-	0.080	-0.202	-0.010	-0.008	-0.098	0.079	0.158
31	x00093482	-	-0.061	0.217	-0.069	0.094	-0.030	-0.018	-0.131
32	x00088077	-	0.045	-0.166	0.023	-0.054	-0.176	0.055	0.273*
33	x00088212	-	-0.014	0.156	-0.025	-0.042	0.045	-0.075	-0.045
34	x00088208	-	-0.027	0.286	-0.045	-0.043	0.004	-0.029	-0.146
35	x00088210	-	0.051	-0.278	0.041	-0.056	-0.022	0.133	0.130
36	x00088214	-	0.002	-0.045	-0.002	0.027	-0.034	0.051	0.000
37	x00088215	-	0.029	-0.164	0.041	-0.036	0.082	0.041	0.006
38	x00088251	-	0.034	0.197	-0.011	0.073	-0.049	-0.130	-0.114
39	x00088250	-	-0.042	-0.024	0.039	-0.099	0.090	-0.028	0.064
40	x00088237	-	0.011	0.014	0.019	0.077	0.169	-0.093	-0.198
41	x00088242	-	-0.094	-0.054	-0.098	0.034	0.115	0.064	0.032
42	x00088246	-	0.166	-0.495	0.132	0.013	-0.062	0.103	0.142
43	x00088240	-	-0.143	0.116	-0.001	0.039	0.099	0.023	-0.133
44	x00092697	-	0.047	0.067	-0.001	-0.071	-0.047	-0.003	0.008
45	X00092698	-	-0.111	-0.044	0.043	0.027	0.103	-0.025	0.007

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
46	x00092699		0.026	-0.250	0.082	0.003	0.004	0.024	0.110
47	x00092703		0.180	-0.335	0.033	-0.076	-0.172	0.132	0.238*
48	x00092702		0.153	-0.082	-0.108	-0.021	-0.010	-0.003	0.071
49	x00092704	-	0.048	-0.100	0.035	0.000	0.088	-0.021	-0.051
50	x00092696	-	-0.050	-0.046	-0.150	0.010	0.213	-0.064	0.088

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.9. Year 3 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00046136	-0.132	-0.082	0.107
2	x00023781	-0.288	0.538	0.463
3	x00023784	-0.330	0.344	-0.031
4	x00046134	0.068	-0.100	-0.273
5	x00046140	-0.308	0.158	0.017
6	x00011183	0.080	0.384	0.009
7	x00102713	0.390	0.012	-0.113
8	x00011184	-0.338	-0.588	0.157
9	x00023797	0.444	-0.066	0.177
10	x00046148	-0.342	-0.440	0.113
11	x00046142	-0.150	0.026	-0.211
12	x00070478	-0.060	-0.042	-0.437
13	x00090161	0.236	0.322	0.201
14	x00091037	-0.112	-0.006	-0.021
15	x00023779	-0.190	0.322	-0.115
16	x00070420	-0.116	-0.108	-0.187
17	x00046106	0.074	-0.138	-0.003
18	x00090964	-0.154	0.200	-0.207
19	x00090934	0.406	-0.080	0.005
20	x00046157	0.374	-0.022	0.057
21	x00091081	0.286	-0.042	-0.259
22	x00090957	0.080	-0.146	0.115
23	x00091044	0.582	-0.060	0.109
24	x00090931	-0.874	-0.040	0.595
25	x00011176	0.376	-0.344	-0.265

G.P.10. Year 3 Spelling Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00046136	-	-0.082	0.063	0.012	0.238	-0.139	-0.079	-0.014
2	x00023781	-	-0.088	0.044	0.269	-0.039	-0.095	-0.309	0.217
3	x00023784	-	-0.141	0.210	-0.195	0.115	0.087	0.040	-0.116
4	x00046134	-	0.028	-0.239	-0.036	0.046	0.124	0.017	0.061
5	x00046140	-	0.107	0.178	0.160	-0.240	-0.007	0.060	-0.258
6	x00011183	-	0.020	-0.116	0.020	0.039	-0.027	0.192	-0.128
7	x00102713	-	0.143	-0.326	-0.027	0.155	0.022	-0.021	0.055
8	x00011184	-	-0.181	0.326	0.196	-0.072	0.019	-0.124	-0.165
9	x00023797	-	0.107	-0.096	0.122	-0.123	0.013	-0.052	0.028
10	x00046148	-	-0.142	0.113	0.123	-0.030	0.295	-0.177	-0.182
11	x00046142	-	-0.002	0.018	-0.144	0.097	0.042	0.188	-0.200
12	x00070478	-	-0.092	-0.514	0.204	-0.092	0.114	0.247	0.133
13	x00090161	-	-0.039	0.153	-0.032	0.016	0.006	-0.173	0.069
14	x00091037	-	0.087	-0.434	0.131	-0.069	0.229	0.080	-0.023
15	x00023779	-	0.034	0.078	-0.118	0.000	0.127	-0.132	0.011
16	x00070420	-	0.027	0.081	0.073	-0.031	-0.112	-0.055	0.017
17	x00046106	-	-0.182	-0.124	-0.193	0.198	0.115	0.275	-0.089
18	x00090964	-	0.090	0.071	-0.144	-0.055	-0.198	0.080	0.156
19	x00090934	-	0.093	-0.085	0.175	-0.124	-0.185	0.020	0.107
20	x00046157	-	0.124	-0.080	0.023	-0.096	0.015	-0.063	0.077
21	x00091081	-	-0.242	0.537	-0.154	0.074	-0.233	-0.078	0.097
22	x00090957	-	0.090	-0.093	0.184	-0.002	-0.177	-0.080	0.078
23	x00091044	-	-0.006	0.071	0.055	-0.068	0.124	0.068	-0.244
24	x00090931	-	0.141	0.014	-0.192	-0.022	-0.109	0.220	-0.053
25	x00011176	-	0.108	0.149	-0.510	0.085	-0.053	-0.145	0.366

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.11. Year 5 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00100308	-0.665	0.379	0.327
2	x00090535	0.115	0.855	0.025
3	x00046140	-0.219	0.057	-0.005
4	x00046180	0.201	-0.261	-0.025
5	x00023797	0.533	-0.167	0.155
6	x00046208	-0.073	0.041	-0.089
7	x00046176	-0.277	-0.261	-0.169
8	x00046148	-0.253	-0.541	0.091
9	x00070468	0.233	0.107	-0.211
10	x00023786	0.353	-0.075	-0.539
11	x00046177	-0.347	0.137	-0.137
12	x00008415	-0.117	-0.039	0.059
13	x00090999	-0.511	0.175	0.271
14	x00046106	0.163	-0.239	-0.025
15	x00090964	-0.065	0.099	-0.229
16	x00046157	0.463	-0.123	0.035
17	x00091081	0.375	-0.143	-0.281
18	x00046154	0.397	-0.167	0.095
19	x00091005	-0.027	0.563	0.227
20	x00011191	-0.243	0.119	0.069
21	x00091108	0.039	0.037	0.135
22	x00090981	-0.085	0.057	0.065
23	x00091079	0.203	-0.251	-0.209
24	x00012238	-0.423	-0.035	0.485
25	x00011190	0.229	-0.313	-0.123

G.P.12. Year 5 Spelling Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00100308	-	-0.424	0.477	-0.112	0.102	-0.349	0.118	0.188
2	x00090535	-	0.321	-0.465	0.370	-0.059	-0.321	0.334	-0.180
3	x00046140	-	-0.034	0.312	0.083	0.028	-0.264	-0.039	-0.086
4	x00046180	-	-0.053	-0.171	0.226	-0.150	0.287	0.008	-0.147
5	x00023797	-	0.038	-0.071	0.032	-0.045	-0.039	-0.030	0.114
6	x00046208	-	0.139	0.228	-0.237	0.188	-0.276	-0.001	-0.042
7	x00046176	-	-0.148	-0.087	0.069	-0.039	-0.002	-0.010	0.217
8	x00046148	-	0.041	0.028	-0.038	0.000	0.080	-0.047	-0.064
9	x00070468	-	-0.054	0.496	-0.093	-0.097	-0.157	-0.013	-0.083
10	x00023786	-	-0.175	-0.358	0.193	-0.039	0.280	0.117	-0.018
11	x00046177	-	0.305	-0.332	-0.127	-0.015	-0.187	0.194	0.164
12	x00008415	-	0.102	-0.076	-0.069	-0.074	0.351	-0.136	-0.098
13	x00090999	-	0.098	0.196	0.021	-0.052	-0.113	-0.080	-0.070
14	x00046106	-	-0.085	-0.206	-0.141	0.171	0.360	0.004	-0.103
15	x00090964	-	-0.024	0.044	0.030	0.093	-0.079	0.018	-0.082
16	x00046157	-	0.077	-0.120	0.096	-0.061	0.046	-0.070	0.032
17	x00091081	-	-0.102	-0.131	-0.099	0.082	-0.106	0.215	0.142
18	x00046154	-	0.125	-0.140	0.093	0.060	-0.123	0.100	-0.116
19	x00091005	-	0.131	0.184	0.025	0.103	-0.376	-0.157	0.091
20	x00011191	-	-0.140	0.043	-0.048	-0.083	0.120	-0.013	0.120
21	x00091108	-	-0.054	0.306	-0.044	-0.113	-0.032	-0.217	0.155
22	x00090981	-	-0.070	-0.154	-0.101	0.060	0.318	0.138	-0.191
23	x00091079	-	0.149	0.000	-0.005	0.037	-0.050	-0.173	0.041
24	x00012238	-	-0.088	-0.115	0.035	-0.136	0.526	-0.241	0.019
25	x00011190	-	-0.075	0.111	-0.158	0.037	0.104	-0.019	0.000

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.13. Year 7 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00017024	-0.604	-0.204	0.082
2	x00046180	0.120	-0.442	-0.362
3	x00023809	0.164	0.582	0.012
4	x00046208	-0.154	-0.140	-0.426
5	x00070468	0.152	-0.074	-0.548
6	x00046235	-0.166	-0.032	-0.038
7	x00023786	0.272	-0.256	-0.876
8	x00046177	-0.428	-0.044	-0.474
9	x00011206	-0.282	-0.482	0.218
10	x00100329	-0.408	0.218	0.308
11	x00100331	0.280	-0.226	0.070
12	x00100337	0.462	0.354	0.138
13	x00091087	-0.126	0.636	0.408
14	x00091093	-0.198	0.314	0.240
15	x00046182	-0.602	-0.058	0.188
16	x00091010	-0.082	-0.080	0.138
17	x00091005	-0.108	0.382	-0.110
18	x00091108	-0.042	-0.144	-0.202
19	x00046186	-0.398	0.016	0.276
20	x00091006	0.358	0.018	0.202
21	x00091088	0.018	0.054	0.142
22	x00091112	0.400	-0.288	0.324
23	x00091011	0.480	0.056	0.040
24	x00046216	0.740	-0.148	0.082
25	x00091091	0.162	-0.002	0.180

G.P.14. Year 7 Spelling Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00017024	-	0.206	-0.122	0.139	0.153	-0.003	-0.195	-0.178
2	x00046180	-	-0.099	0.142	-0.006	0.067	0.183	-0.069	-0.219
3	x00023809	-	0.082	0.050	-0.034	-0.227	-0.017	0.067	0.079
4	x00046208	-	0.024	0.166	-0.225	0.095	-0.092	0.000	0.032
5	x00070468	-	-0.071	0.203	-0.064	-0.030	0.024	0.092	-0.155
6	x00046235	-	-0.085	0.039	0.053	-0.184	0.072	0.107	-0.003
7	x00023786	-	0.013	-0.025	-0.057	-0.083	-0.080	0.183	0.049
8	x00046177	-	-0.047	-0.113	-0.123	0.178	-0.113	0.171	0.048
9	x00011206	-	0.054	-0.038	-0.019	-0.056	0.174	-0.118	0.003
10	x00100329	-	0.057	0.009	0.042	0.129	-0.173	-0.106	0.043
11	x00100331	-	0.111	-0.437	-0.033	-0.196	0.277	0.139	0.139
12	x00100337	-	0.119	-0.567	0.015	0.166	0.015	0.208	0.045
13	x00091087	-	0.038	0.239	-0.044	-0.046	-0.084	-0.080	-0.023
14	x00091093	-	-0.054	0.043	0.003	-0.110	0.010	0.093	0.015
15	x00046182	-	-0.064	-0.075	-0.156	0.113	0.095	0.024	0.062
16	x00091010	-	-0.222	0.032	0.185	-0.070	0.024	-0.058	0.109
17	x00091005	-	0.049	-0.190	0.191	0.098	-0.308	0.081	0.080
18	x00091108	-	0.004	0.076	0.074	-0.011	-0.135	0.003	-0.011
19	x00046186	-	-0.092	0.075	-0.071	-0.020	0.175	-0.013	-0.053
20	x00091006	-	-0.038	0.110	0.072	-0.071	0.045	-0.032	-0.086
21	x00091088	-	0.113	0.052	-0.128	0.323	-0.273	-0.108	0.021
22	x00091112	-	-0.065	0.259	-0.027	-0.055	0.083	-0.156	-0.039
23	x00091011	-	-0.111	-0.025	0.004	-0.141	0.232	0.027	0.014
24	x00046216	-	0.148	-0.168	0.135	-0.095	-0.074	0.043	0.010
25	x00091091	-	-0.069	0.264	0.074	0.073	-0.056	-0.304	0.019

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.15. Year 9 Spelling Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00011213	0.033	0.164	-0.097
2	x00100438	-0.469	0.074	-0.167
3	x00023809	0.077	0.472	-0.125
4	x00046235	-0.253	-0.142	-0.175
5	x00103074	-0.203	0.014	-0.115
6	x00011206	-0.369	-0.592	0.081
7	x00100329	-0.495	0.108	0.171
8	x00100409	0.213	-0.086	-0.051
9	x00100449	0.169	0.234	-0.263
10	x00046212	0.103	0.080	-0.277
11	x00100447	-0.279	0.328	0.379
12	x00100457	-0.181	0.238	-0.157
13	x00011196	-0.231	0.086	-0.167
14	x00091010	-0.169	-0.190	0.001
15	x00091013	-0.513	-0.266	-0.151
16	x00091111	-0.387	-0.014	0.113
17	x00091006	0.271	-0.092	0.065
18	x00011218	0.047	0.240	-0.089
19	x00091112	0.313	-0.398	0.187
20	x00091011	0.393	-0.054	-0.097
21	x00011210	0.253	0.344	0.013
22	x00091096	0.907	0.312	0.411
23	x00046219	0.113	-0.308	0.331
24	x00091113	0.127	0.190	-0.085
25	x00091015	0.519	-0.744	0.255

G.P.16. Year 9 Spelling Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00011213	-	-0.086	0.102	-0.005	-0.194	-0.058	0.027	0.214
2	x00100438	-	0.113	0.136	-0.159	-0.067	-0.056	-0.024	0.056
3	x00023809	-	0.133	0.046	-0.074	-0.004	-0.009	0.068	-0.159
4	x00046235	-	0.042	-0.182	0.055	-0.052	-0.003	0.000	0.140
5	x00103074	-	0.086	0.008	0.002	0.003	-0.153	0.018	0.038
6	x00011206	-	-0.095	0.188	-0.070	-0.067	0.132	-0.154	0.066
7	x00100329	-	0.056	-0.150	0.091	0.057	-0.174	0.000	0.122
8	x00100409	-	-0.015	0.056	0.013	-0.165	0.053	0.140	-0.081
9	x00100449	-	0.017	0.194	0.179	-0.130	-0.019	-0.205	-0.036
10	x00046212	-	0.067	-0.267	0.012	-0.056	0.199	0.023	0.023
11	x00100447	-	-0.082	0.056	0.033	0.140	-0.093	-0.014	-0.040
12	x00100457	-	0.097	-0.096	-0.108	-0.007	0.022	0.085	0.008
13	x00011196	-	-0.026	0.171	0.097	-0.124	-0.061	-0.174	0.116
14	x00091010	-	-0.086	-0.132	0.196	0.008	-0.035	-0.069	0.120
15	x00091013	-	0.101	-0.005	-0.098	-0.026	0.152	-0.009	-0.113
16	x00091111	-	0.014	-0.360	0.093	0.171	0.044	0.036	0.001
17	x00091006	-	-0.045	0.143	-0.018	-0.021	0.065	0.008	-0.133
18	x00011218	-	-0.203	0.309	0.024	-0.016	-0.117	0.020	-0.018
19	x00091112	-	-0.128	0.139	-0.161	0.050	0.108	-0.027	0.019
20	x00091011	-	-0.076	-0.200	-0.028	0.034	0.134	0.093	0.043
21	x00011210	-	0.082	0.155	-0.088	0.096	-0.155	-0.028	-0.063
22	x00091096	-	0.032	0.015	0.049	-0.015	0.107	-0.147	-0.041
23	x00046219	-	0.002	0.055	-0.064	-0.017	0.189	0.091	-0.257
24	x00091113	-	0.149	-0.066	-0.069	0.083	-0.077	0.068	-0.089
25	x00091015	-	-0.146	-0.315	0.100	0.320	-0.194	0.173	0.062

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.17. Year 3 Grammar and Punctuation Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00090241	-0.378	0.179	1.030
2	x00070241	-0.144	0.303	0.834
3	x00093354	-0.116	-0.205	0.322
4	x00090223	-0.114	0.113	0.466
5	x00023527	-0.166	-0.195	0.044
6	x00074771	-0.096	0.233	0.444
7	x00090164	0.072	0.199	0.514
8	x00090228	0.070	-0.349	0.148
9	x00074688	-0.272	-0.051	0.056
10	x00090193	-0.004	0.061	-0.166
11	x00093357	-0.022	-0.259	0.032
12	x00090180	0.066	-0.075	0.038
13	x00093352	-0.196	0.161	0.120
14	x00090578	0.024	-0.043	0.064
15	x00090197	-0.244	-0.213	0.226
16	x00090218	0.192	-0.041	0.212
17	x00074826	0.264	-0.009	-0.490
18	x00090221	0.074	-0.255	-0.018
19	x00090542	0.240	0.077	-0.506
20	x00074695	0.020	-0.061	-0.294
21	x00074691	0.012	0.197	-0.014
22	x00098871	0.064	0.235	-1.076
23	x00090573	0.066	-0.179	-0.700
24	x00109466	0.428	0.143	-1.124
25	x00098727	0.170	0.045	-0.174

G.P.18. Year 3 Grammar and Punctuation Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00090241	-	-0.199	1.252*	-0.354	-0.214	-0.003	-0.630	0.148
2	x00070241	-	-0.009	0.909	-0.302	-0.300	0.006	-0.504	0.199
3	x00093354	-	-0.029	0.475	-0.055	-0.055	-0.268	0.002	-0.069
4	x00090223	-	0.023	0.074	0.122	-0.188	0.017	-0.140	0.092
5	x00023527	-	0.021	0.059	-0.282	0.109	0.155	-0.028	-0.034
6	x00074771	-	0.003	0.390	0.080	-0.052	-0.113	-0.262	-0.046
7	x00090164	-	0.078	0.315	0.144	-0.147	-0.167	-0.160	-0.063
8	x00090228	-	-0.072	-0.050	-0.085	-0.007	0.236	0.093	-0.116
9	x00074688	-	-0.292	-0.086	-0.010	0.025	0.226	0.313	-0.175
10	x00090193	-	-0.176	0.120	0.098	0.014	-0.138	0.147	-0.065
11	x00093357	-	-0.169	0.056	0.012	0.277	0.106	-0.153	-0.130
12	x00090180	-	0.039	-0.161	0.063	0.071	-0.006	-0.138	0.131
13	x00093352	-	0.096	-0.130	0.000	0.081	0.047	-0.024	-0.072
14	x00090578	-	0.183	-0.350	0.150	0.087	-0.017	-0.051	-0.002
15	x00090197	-	-0.104	-0.130	0.071	-0.077	0.124	0.073	0.042
16	x00090218	-	0.006	-0.044	0.098	0.037	-0.219	0.125	-0.003
17	x00074826	-	0.049	-0.302	-0.090	0.071	-0.072	0.205	0.139
18	x00090221	-	-0.069	-0.116	0.010	0.003	0.228	0.006	-0.061
19	x00090542	-	0.034	-0.156	0.053	-0.097	-0.174	0.333	0.007
20	x00074695	-	-0.040	-0.486	0.197	0.200	0.225	0.006	-0.102
21	x00074691	-	0.034	-0.258	0.040	0.051	-0.151	0.102	0.181
22	x00098871	-	0.097	0.083	-0.058	-0.211	-0.208	0.255	0.042
23	x00090573	-	0.140	-0.405	-0.141	0.042	0.079	0.254	0.030
24	x00109466	-	0.397	-0.876	0.263	0.110	-0.072	0.178	0.000
25	x00098727	-	-0.043	-0.184	-0.022	0.169	0.158	-0.003	-0.075

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.19. Year 5 Grammar and Punctuation Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00023612	-0.103	0.600	0.916
2	x00090223	-0.131	0.060	0.546
3	x00093417	-0.165	-0.178	0.926
4	x00023630	-0.207	0.292	0.614
5	x00093357	-0.039	-0.312	0.112
6	x00093353	-0.183	-0.348	0.430
7	x00090180	0.049	-0.128	0.118
8	x00075720	-0.271	-0.276	0.324
9	x00074774	0.071	0.044	-0.250
10	x00090578	0.007	-0.096	0.144
11	x00075653	-0.229	0.122	0.402
12	x00098858	-0.243	-0.284	0.254
13	x00075649	0.065	0.264	0.306
14	x00093414	0.063	-0.250	0.096
15	x00090542	0.223	0.024	-0.426
16	x00074691	-0.005	0.144	0.066
17	x00098871	0.047	0.182	-0.996
18	x00075728	0.069	-0.034	-0.420
19	x00091132	0.197	-0.134	-0.448
20	x00076585	0.161	0.014	-0.344
21	x00090856	0.339	-0.080	-0.952
22	x00090889	-0.049	0.294	-0.576
23	x00091120	0.137	-0.316	-0.434
24	x00106795	0.107	0.002	-0.564
25	x00098857	0.097	0.404	0.156

G.P.20. Year 5 Grammar and Punctuation Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00023612	-	-0.252	1.263*	-0.313	-0.156	-0.268	-0.347	0.073
2	x00090223	-	-0.150	0.889	-0.065	-0.046	-0.125	-0.449	-0.054
3	x00093417	-	-0.314	1.155*	-0.072	-0.219	-0.012	-0.330	-0.209
4	x00023630	-	-0.195	0.758	0.054	-0.138	-0.064	-0.435	0.020
5	x00093357	-	-0.282	0.516	-0.131	0.140	0.114	-0.241	-0.115
6	x00093353	-	-0.054	0.307	-0.076	-0.023	-0.046	0.039	-0.147
7	x00090180	-	-0.123	0.009	-0.057	0.056	0.102	-0.024	0.038
8	x00075720	-	-0.070	-0.111	-0.059	0.246	0.241	-0.107	-0.140
9	x00074774	-	-0.073	-0.079	-0.034	0.036	-0.043	0.109	0.083
10	x00090578	-	0.182	-0.022	-0.078	0.001	0.025	-0.040	-0.066
11	x00075653	-	-0.072	0.174	0.016	-0.048	-0.040	-0.150	0.121
12	x00098858	-	0.095	-0.131	-0.082	0.023	-0.001	0.109	-0.013
13	x00075649	-	0.064	-0.143	0.106	-0.004	-0.160	0.035	0.102
14	x00093414	-	-0.046	-0.099	-0.063	0.032	0.156	-0.071	0.092
15	x00090542	-	0.057	-0.236	0.076	-0.057	-0.025	0.162	0.022
16	x00074691	-	0.047	-0.174	0.120	-0.037	0.043	0.125	-0.123
17	x00098871	-	-0.086	0.052	-0.070	0.043	-0.065	0.132	-0.006
18	x00075728	-	0.298	-0.559	0.175	-0.142	0.096	0.119	0.013
19	x00091132	-	0.065	-0.424	0.138	0.035	0.039	0.113	0.034
20	x00076585	-	0.083	-0.719	0.178	0.072	0.177	0.140	0.069
21	x00090856	-	0.091	-0.388	0.116	0.018	-0.105	0.312	-0.042
22	x00090889	-	0.278	-0.530	0.085	-0.027	-0.145	0.324	0.014
23	x00091120	-	0.049	-0.609	0.038	0.054	0.085	0.236	0.147
24	x00106795	-	0.116	-0.780	0.046	0.146	0.101	0.294	0.077
25	x00098857	-	0.293	-0.120	-0.049	-0.004	-0.078	-0.053	0.009

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.21. Year 7 Grammar and Punctuation Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00090863	-0.150	0.621	0.615
2	x00023630	-0.178	0.257	0.543
3	x00090993	-0.066	0.107	0.641
4	x00075720	-0.242	-0.311	0.253
5	x00098952	-0.136	0.043	0.025
6	x00076680	-0.416	0.061	0.299
7	x00075653	-0.200	0.087	0.331
8	x00093139	-0.214	0.135	0.213
9	x00075385	-0.288	0.539	0.619
10	x00075649	0.094	0.229	0.235
11	x00090852	-0.004	0.177	-0.033
12	x00093414	0.092	-0.285	0.025
13	x00093034	0.008	0.241	0.025
14	x00093078	0.058	-0.435	0.127
15	x00093398	0.024	0.041	0.135
16	x00093388	-0.062	-0.087	0.109
17	x00093293	0.098	-0.145	-0.019
18	x00093097	0.152	-0.051	-0.347
19	x00075728	0.098	-0.069	-0.491
20	x00077611	0.352	-0.273	-0.905
21	x00010034	0.062	-0.199	0.039
22	x00093298	0.472	-0.227	-0.987
23	x00090856	0.368	-0.115	-1.023
24	x00093055	0.000	-0.025	-0.339
25	x00098853	0.084	-0.315	-0.097

G.P.22. Year 7 Grammar and Punctuation Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00090863	-	0.005	0.509	-0.016	-0.060	-0.161	-0.137	-0.142
2	x00023630	-	-0.326	0.814	-0.125	-0.163	0.156	-0.313	-0.043
3	x00090993	-	-0.033	0.377	0.121	-0.170	0.175	-0.305*	-0.164
4	x00075720	-	-0.033	0.314	-0.175	0.092	0.131	-0.187	-0.142
5	x00098952	-	0.002	-0.229	-0.053	0.097	0.124	0.161	-0.102
6	x00076680	-	-0.040	0.141	-0.191	0.079	0.117	0.014	-0.120
7	x00075653	-	-0.029	0.307	0.043	-0.094	-0.077	-0.084	-0.066
8	x00093139	-	0.001	0.119	-0.026	-0.048	-0.047	-0.035	0.036
9	x00075385	-	-0.135	0.729	-0.055	-0.137	-0.068	-0.211	-0.123
10	x00075649	-	-0.005	0.269	0.059	-0.021	-0.144	-0.126	-0.032
11	x00090852	-	-0.034	0.114	-0.030	-0.017	-0.110	0.012	0.065
12	x00093414	-	0.018	-0.175	0.018	0.117	0.033	-0.081	0.070
13	x00093034	-	0.098	0.065	-0.023	-0.081	-0.244	0.111	0.073
14	x00093078	-	-0.147	-0.004	-0.050	0.122	0.206	-0.022	-0.105
15	x00093398	-	0.053	0.106	0.066	-0.038	-0.045	-0.050	-0.091
16	x00093388	-	0.001	0.002	0.044	-0.067	0.053	0.019	-0.051
17	x00093293	-	-0.104	0.078	-0.113	0.034	0.056	0.000	0.049
18	x00093097	-	0.085	-0.311	0.120	-0.020	-0.048	0.073	0.100
19	x00075728	-	0.099	-0.415	-0.032	0.163	0.016	0.094	0.075
20	x00077611	-	0.131	-0.606	0.029	0.110	-0.054	0.189	0.202
21	x00010034	-	0.105	-0.040	0.010	-0.100	-0.021	0.079	-0.034
22	x00093298	-	0.191	-0.965*	0.174	0.163	-0.126	0.333*	0.230*
23	x00090856	-	0.042	-0.587	0.072	0.153	-0.035	0.225	0.130
24	x00093055	-	0.029	-0.273	0.062	-0.103	-0.039	0.189	0.136
25	x00098853	-	0.026	-0.337	0.070	-0.012	0.152	0.052	0.049

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.23. Year 9 Grammar and Punctuation Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00093270	-0.282	0.579	0.585
2	x00093074	-0.228	0.253	0.773
3	x00076680	-0.432	0.065	0.265
4	x00093139	-0.230	0.139	0.179
5	x00076628	-0.068	0.171	0.553
6	x00023711	-0.064	-0.005	0.283
7	x00093396	-0.034	-0.127	0.129
8	x00093034	-0.008	0.245	-0.009
9	x00093398	0.008	0.045	0.101
10	x00093388	-0.078	-0.083	0.075
11	x00075367	-0.330	0.039	0.211
12	x00077395	0.012	-0.333	0.279
13	x00093147	0.100	-0.243	0.005
14	x00093087	0.088	-0.229	-0.233
15	x00075746	0.064	-0.359	-0.169
16	x00093293	0.082	-0.141	-0.053
17	x00075735	0.012	-0.211	-0.253
18	x00075742	0.148	0.005	-0.491
19	x00093137	0.164	-0.093	-0.371
20	x00077801	0.140	-0.055	-0.279
21	x00093136	0.072	-0.217	-0.371
22	x00075740	-0.162	0.179	0.299
23	x00098769	0.158	0.359	-0.429
24	x00075378	0.698	0.023	-0.237
25	x00093151	0.170	-0.001	-0.851

G.P.24. Year 9 Grammar and Punctuation Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00093270	-	-0.056	0.679	-0.019	-0.068	-0.073	-0.258	-0.206
2	x00093074	-	0.041	0.558	0.022	-0.072	-0.102	-0.238	-0.209
3	x00076680	-	-0.065	0.343	-0.118	0.025	0.011	-0.123	-0.072
4	x00093139	-	-0.071	0.378	0.043	-0.077	-0.176	-0.090	-0.008
5	x00076628	-	-0.181	0.534	-0.079	-0.007	0.059	-0.085	-0.240
6	x00023711	-	-0.085	0.162	-0.034	0.003	0.111	-0.108	-0.050
7	x00093396	-	0.028	-0.101	-0.080	-0.020	0.127	-0.001	0.047
8	x00093034	-	-0.054	0.160	0.000	-0.034	-0.007	0.052	-0.117
9	x00093398	-	-0.030	-0.007	0.095	0.020	-0.003	0.013	-0.089
10	x00093388	-	-0.130	0.081	0.118	-0.021	0.155	-0.064	-0.139
11	x00075367	-	-0.032	-0.071	0.031	-0.054	0.152	0.034	-0.060
12	x00077395	-	-0.155	0.107	-0.051	0.075	0.122	-0.086	-0.012
13	x00093147	-	0.023	-0.238	0.070	0.009	0.060	-0.001	0.076
14	x00093087	-	0.016	-0.172	0.010	-0.023	0.181	-0.009	-0.003
15	x00075746	-	0.053	-0.303	0.066	0.096	-0.005	0.040	0.053
16	x00093293	-	-0.165	-0.037	-0.027	0.042	0.192	0.022	-0.026
17	x00075735	-	0.119	-0.084	-0.015	-0.086	-0.048	0.013	0.100
18	x00075742	-	0.203	-0.388	0.020	0.127	-0.127	0.056	0.108
19	x00093137	-	0.076	-0.496	0.041	0.057	-0.017	0.198	0.141
20	x00077801	-	-0.058	-0.190	0.017	0.008	0.057	0.211	-0.045
21	x00093136	-	0.122	-0.518	0.240*	0.106	-0.163	0.029	0.185
22	x00075740	-	0.071	0.310	0.004	-0.141	-0.082	-0.032	-0.131
23	x00098769	-	0.124	-0.372	0.100	-0.047	-0.248	0.099	0.343*
24	x00075378	-	-0.104	0.165	-0.135	0.124	-0.042	0.045	-0.054
25	x00093151	-	0.308	-0.500	-0.321*	-0.042	-0.134	0.282	0.408*

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.25. Year 3 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00075163	-0.551	-0.130	0.434
2	x00085054	0.309	0.246	0.152
3	x00085137	-0.275	0.218	0.150
4	x00027520	-0.333	-0.204	-0.016
5	x00075112	-0.173	0.088	0.252
6	x00084926	0.165	0.180	-0.232
7	x00085089	0.041	0.112	-0.014
8	x00085232	-0.119	0.338	-0.054
9	x00027452	-0.245	-0.002	0.414
10	x00075091	-0.027	0.234	0.020
11	x00085025	0.029	0.106	0.246
12	x00093461	-0.077	0.266	0.224
13	x00085058	0.159	0.070	-0.178
14	x00075132	-0.211	0.336	-0.280
15	x00092714	-0.439	-0.036	0.068
16	x00028201	-0.235	-0.352	0.024
17	x00085015	0.937	0.050	0.374
18	x00093292	0.213	-0.078	-0.476
19	x00087960	-0.125	-0.220	-0.224
20	x00084847	0.011	-0.286	0.240
21	x00027440	0.463	-0.346	0.132
22	x00103189	-0.077	-0.200	-0.130
23	x00087943	-0.243	-0.260	0.362
24	x00085348	-0.111	-0.076	0.100
25	x00027813	0.133	0.176	0.104
26	x00076694	-0.009	0.052	-0.532
27	x00084920	0.265	-0.096	-0.306
28	x00027498	-0.207	-0.326	-0.506
29	x00093285	-0.037	0.108	-0.042
30	x00084949	-0.043	-0.076	-0.100
31	x00027588	-0.157	0.202	-0.082
32	x00027522	0.173	0.294	-0.112
33	x00085139	0.487	0.006	0.152
34	x00085021	0.409	0.034	0.022
35	x00086064	0.057	-0.392	-0.306
36	x00093447	-0.169	-0.034	0.120

G.P.26. Year 3 Numeracy Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00075163	-	-0.065	0.919	-0.482	0.061	0.325	-0.378	-0.380
2	x00085054	-	0.092	0.054	-0.100	0.061	0.103	-0.222	0.012
3	x00085137	-	0.087	0.200	0.028	-0.238	0.054	0.008	-0.138
4	x00027520	-	-0.023	0.020	0.158	0.030	0.169	-0.285	-0.070
5	x00075112	-	-0.116	0.565	-0.143	-0.095	-0.010	-0.271	0.069
6	x00084926	-	-0.077	-0.174	0.027	0.051	-0.013	0.042	0.143
7	x00085089	-	-0.029	-0.353	0.084	0.049	0.150	0.142	-0.043
8	x00085232	-	-0.011	0.091	0.148	0.050	-0.016	-0.030	-0.231
9	x00027452	-	-0.039	-0.133	0.210	-0.062	0.033	-0.020	0.011
10	x00075091	-	0.090	0.454	-0.220	-0.140	-0.073	-0.122	0.010
11	x00085025	-	0.014	0.186	0.079	-0.237	-0.099	0.022	0.035
12	x00093461	-	-0.051	0.462	0.026	-0.162	-0.210	0.027	-0.092
13	x00085058	-	0.133	-0.218	0.055	-0.080	-0.180	0.197	0.091
14	x00075132	-	0.247	0.010	0.131	-0.068	-0.311	-0.106	0.098
15	x00092714	-	-0.071	-0.213	-0.001	-0.018	0.158	0.200	-0.056
16	x00028201	-	-0.217	0.105	-0.030	0.086	0.216	-0.014	-0.145
17	x00085015	-	0.042	0.126	0.073	-0.087	-0.134	0.003	-0.024
18	x00093292	-	0.075	-0.426	0.023	-0.079	0.020	0.174	0.213
19	x00087960	-	-0.062	-0.097	-0.178	0.146	0.236	-0.050	0.005
20	x00084847	-	-0.074	-0.291	0.046	0.318	-0.119	-0.053	0.173
21	x00027440	-	0.068	-0.220	0.072	0.041	0.056	-0.038	0.020
22	x00103189	-	0.041	0.148	-0.290	0.127	0.282	0.020	-0.329
23	x00087943	-	-0.065	-0.062	0.184	-0.059	-0.056	-0.047	0.105
24	x00085348	-	-0.053	0.314	-0.095	0.042	-0.193	-0.056	0.042
25	x00027813	-	0.006	0.257	0.062	-0.105	-0.209	-0.094	0.083
26	x00076694	-	0.149	0.100	0.062	-0.180	-0.143	0.138	-0.126
27	x00084920	-	0.086	-0.091	-0.026	-0.026	-0.050	0.110	-0.004
28	x00027498	-	-0.092	-0.534	-0.162	0.309	0.315	0.267	-0.102
29	x00093285	-	0.088	-0.517	0.076	0.067	0.104	0.099	0.082
30	x00084949	-	-0.467*	-0.398	0.196	0.011	0.365	0.003	0.290
31	x00027588	-	0.186	-0.591	-0.035	0.275	-0.109	0.187	0.087
32	x00027522	-	0.159	-0.142	0.052	0.019	-0.125	0.035	0.001
33	x00085139	-	-0.005	0.124	-0.104	0.038	-0.157	0.091	0.014
34	x00085021	-	-0.052	0.128	0.449	-0.227	-0.389	-0.039	0.129
35	x00086064	-	-0.038	0.467	-0.318	0.107	0.002	-0.006	-0.215
36	x00093447	-	0.042	-0.273	-0.058	-0.027	0.007	0.068	0.241

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.27. Year 5 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00085054	0.333	0.415	0.292
2	x00085137	-0.251	0.387	0.290
3	x00075132	-0.187	0.505	-0.140
4	x00092714	-0.415	0.133	0.208
5	x00028201	-0.211	-0.183	0.164
6	x00087960	-0.101	-0.051	-0.084
7	x00084847	0.035	-0.117	0.380
8	x00086125	0.093	-0.135	0.072
9	x00103189	-0.053	-0.031	0.010
10	x00087784	0.461	0.345	-0.462
11	x00086808	-0.003	0.199	-0.322
12	x00027737	-0.259	0.303	0.036
13	x00087781	0.135	0.279	-0.076
14	x00087810	-0.729	0.549	-0.078
15	x00087865	0.175	0.251	-0.070
16	x00087943	-0.219	-0.091	0.502
17	x00087640	0.103	-0.293	-0.192
18	x00086735	0.157	-0.115	-0.504
19	x00092718	-0.313	0.329	-0.058
20	x00093574	-0.115	-0.001	-0.184
21	x00027813	0.157	0.345	0.244
22	x00085987	-0.085	-0.523	0.396
23	x00087706	0.097	-0.023	0.044
24	x00026973	0.005	-0.391	-0.320
25	x00093767	0.115	-0.261	-0.438
26	x00093467	0.373	-0.219	-0.122
27	x00027390	0.213	-0.109	0.300
28	x00027522	0.197	0.463	0.028
29	x00027483	-0.061	0.189	-0.410
30	x00027195	-0.065	-0.027	0.378
31	x00092939	-0.321	0.045	0.150
32	x00086064	0.081	-0.223	-0.166
33	x00086614	-0.095	-0.071	0.100
34	x00085026	0.067	-0.177	-0.412
35	x00087730	-0.025	-0.117	-0.574
36	x00087922	-0.277	-0.027	0.218
37	x00092124	0.685	-0.261	-0.542
38	x00027463	0.159	-0.559	0.804
39	x00093496	-0.215	-0.171	0.982
40	x00085479	-0.337	-0.245	-0.764
41	x00068562	-0.071	-0.181	0.154
42	x00027166	0.755	-0.141	0.146

G.P.28. Year 5 Numeracy Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00085054	-	0.026	0.497	-0.312	0.062	0.288	-0.256	-0.305
2	x00085137	-	0.015	0.955	-0.001	-0.131	-0.422	-0.292	-0.124
3	x00075132	-	0.132	0.326	-0.001	-0.226	-0.217	-0.117	0.103
4	x00092714	-	0.211	0.024	-0.174	-0.109	-0.252	0.164	0.137
5	x00028201	-	0.025	0.189	-0.155	0.041	0.042	-0.012	-0.131
6	x00087960	-	-0.016	0.334	-0.248	0.052	0.102	-0.250	0.027
7	x00084847	-	-0.175	-0.055	-0.074	0.127	0.152	-0.081	0.106
8	x00086125	-	-0.057	0.445	-0.015	-0.172	-0.120	0.053	-0.134
9	x00103189	-	-0.241	0.410	-0.103	-0.095	0.188	-0.073	-0.086
10	x00087784	-	0.314	-0.129	-0.017	0.100	-0.298	0.057	-0.027
11	x00086808	-	0.043	-0.126	0.093	-0.126	-0.069	0.132	0.053
12	x00027737	-	0.075	-0.053	0.035	0.017	0.073	-0.218	0.070
13	x00087781	-	0.108	-0.462	-0.025	0.046	0.065	0.067	0.201
14	x00087810	-	0.178	-0.407	-0.244	0.089	0.251	0.126	0.006
15	x00087865	-	0.023	0.364	0.025	-0.118	-0.171	-0.116	-0.007
16	x00087943	-	-0.209	0.663	-0.080	-0.132	0.056	-0.167	-0.130
17	x00087640	-	-0.180	-0.204	0.028	0.255	0.196	0.133	-0.228
18	x00086735	-	-0.027	-0.346	0.158	0.030	-0.204	0.166	0.223
19	x00092718	-	0.092	0.203	-0.110	-0.106	-0.257	0.045	0.132
20	x00093574	-	0.048	-0.140	0.066	-0.091	-0.121	0.135	0.102
21	x00027813	-	0.037	0.368	0.091	-0.120	-0.211	-0.329	0.163
22	x00085987	-	-0.160	0.200	0.037	0.040	0.065	-0.007	-0.176
23	x00087706	-	0.019	0.204	0.022	-0.041	0.053	-0.224	-0.033
24	x00026973	-	0.122	-0.461	0.168	-0.025	0.052	0.110	0.034
25	x00093767	-	0.050	-0.293	-0.136	0.003	0.142	0.196	0.037
26	x00093467	-	-0.197	-0.053	0.183	0.103	0.056	0.164	-0.256
27	x00027390	-	-0.052	0.152	0.010	-0.081	0.124	-0.050	-0.103
28	x00027522	-	0.087	0.087	0.028	-0.148	0.000	-0.007	-0.047
29	x00027483	-	0.136	-0.556	0.115	0.019	0.040	0.045	0.201
30	x00027195	-	-0.061	-0.089	0.064	0.112	0.039	0.138	-0.203
31	x00092939	-	-0.253	0.042	0.173	0.065	0.061	0.027	-0.114
32	x00086064	-	0.036	-0.076	-0.116	0.071	-0.146	0.261	-0.030
33	x00086614	-	-0.099	0.259	-0.113	-0.021	0.001	0.013	-0.040
34	x00085026	-	0.076	-0.345	0.156	0.010	-0.051	0.066	0.087
35	x00087730	-	0.114	-0.440	0.061	-0.009	-0.045	0.202	0.118
36	x00087922	-	-0.171	0.298	-0.217	-0.072	0.445	-0.190	-0.092
37	x00092124	-	0.080	-0.883	0.311	0.239	0.067	-0.035	0.221
38	x00027463	-	-0.231	0.000	0.140	0.172	0.085	-0.015	-0.151
39	x00093496	-	0.027	0.004	0.053	0.054	-0.167	-0.012	0.041
40	x00085479	-	0.109	-0.775	0.019	0.215	0.099	0.185	0.147
41	x00068562	-	-0.050	-0.133	-0.176	0.014	0.376	-0.016	-0.015
42	x00027166	-	-0.004	0.003	0.279	-0.113	-0.370	-0.017	0.222

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.29. Year 7 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00086105	-0.259	0.637	0.906
2	x00027737	-0.189	0.169	-0.176
3	x00087781	0.205	0.145	-0.288
4	x00026946	-0.267	0.191	0.490
5	x00092110	-0.149	0.217	0.250
6	x00091766	-0.251	0.355	0.420
7	x00087640	0.173	-0.427	-0.404
8	x00027251	-0.269	0.129	-0.106
9	x00027280	-0.141	0.021	0.108
10	x00093467	0.443	-0.353	-0.334
11	x00092096	0.137	0.187	0.326
12	x00027304	-0.039	-0.087	-0.130
13	x00027018	0.035	0.221	-0.098
14	x00094838	0.489	0.207	0.216
15	x00019487	0.329	0.201	0.318
16	x00027483	0.009	0.055	-0.622
17	x00092626	-0.125	0.167	0.184
18	x00027739	-0.221	0.389	-0.096
19	x00092519	-0.147	-0.113	0.088
20	x00092177	0.385	-0.039	0.094
21	x00092939	-0.251	-0.089	-0.062
22	x00088289	-0.289	0.189	-0.384
23	x00094733	-0.075	-0.007	-0.436
24	x00092390	-0.181	0.087	-0.016
25	x00092189	0.387	0.111	0.216
26	x00092124	0.755	-0.395	-0.754
27	x00092237	0.093	-0.063	-0.516
28	x00091795	0.041	0.225	-0.418
29	x00035662	0.173	0.175	0.180
30	x00095711	-0.161	-0.187	-0.580
31	x00092100	0.389	-0.191	-0.408
32	x00092313	-0.251	-0.289	-0.058
33	x00027287	0.243	-0.481	1.052
34	x00092306	-0.101	0.003	0.704
35	x00092383	0.327	-0.315	-0.600
36	x00027278	0.017	0.067	0.072
37	x00069112	-0.197	-0.081	0.460
38	x00069373	-0.373	-0.211	-0.406
39	x00092618	-0.205	0.521	-0.046
40	x00069514	-0.623	0.381	0.690
41	x00086808	0.067	0.065	-0.534
42	x00085987	-0.015	-0.657	0.184
43	x00026973	0.075	-0.525	-0.532

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
44	x00093767	0.185	-0.395	-0.650
45	x00027195	0.005	-0.161	0.166
46	x00092244	-0.031	0.257	-0.478
47	x00093496	-0.145	-0.305	0.770
48	x00092532	0.359	-0.531	1.250

G.P.30. Year 7 Numeracy Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00086105	-	-0.096	0.850	-0.043	-0.200	0.002	-0.330	-0.183
2	x00027737	-	0.066	0.372	-0.069	-0.009	-0.020	-0.236	-0.102
3	x00087781	-	0.165	-0.176	-0.062	0.012	-0.065	0.067	0.058
4	x00026946	-	-0.025	0.211	-0.180	0.208	0.024	-0.168	-0.070
5	x00092110	-	0.080	0.397	-0.071	-0.295	-0.073	-0.008	-0.029
6	x00091766	-	-0.027	0.356	-0.266*	0.040	0.054	-0.100	-0.056
7	x00087640	-	-0.213	0.156	-0.056	0.150	0.035	-0.023	-0.049
8	x00027251	-	-0.031	0.046	0.009	-0.092	-0.032	0.046	0.053
9	x00027280	-	0.047	-0.058	0.009	0.110	0.014	-0.083	-0.039
10	x00093467	-	-0.202	0.172	-0.045	-0.050	0.103	0.129	-0.107
11	x00092096	-	-0.328*	0.058	-0.117	0.282	0.115	-0.009	-0.001
12	x00027304	-	-0.037	-0.215	0.065	0.106	-0.058	0.077	0.062
13	x00027018	-	0.029	-0.057	0.111	-0.143	-0.127	0.004	0.183
14	x00094838	-	0.064	-0.113	0.099	-0.219	-0.023	0.025	0.168
15	x00019487	-	0.073	0.125	0.045	-0.136	-0.035	-0.085	0.013
16	x00027483	-	-0.011	-0.119	0.027	0.101	-0.110	-0.002	0.114
17	x00092626	-	0.030	-0.149	-0.091	0.100	-0.069	0.090	0.088
18	x00027739	-	0.047	-0.131	0.044	-0.147	0.003	0.117	0.067
19	x00092519	-	0.105	-0.009	0.062	-0.153	-0.139	0.047	0.088
20	x00092177	-	-0.023	-0.070	0.120	-0.033	0.003	0.020	-0.016
21	x00092939	-	0.041	-0.032	0.018	-0.067	-0.083	0.074	0.050
22	x00088289	-	0.216	-0.382	0.027	-0.008	-0.088	0.071	0.163
23	x00094733	-	0.055	-0.114	0.037	-0.030	-0.058	0.029	0.081
24	x00092390	-	0.107	-0.120	0.028	0.023	-0.076	0.027	0.011
25	x00092189	-	-0.022	0.015	0.080	-0.071	-0.067	-0.010	0.075
26	x00092124	-	0.029	0.124	-0.037	-0.055	0.017	-0.009	-0.070
27	x00092237	-	0.046	-0.581	0.072	0.187	0.031	0.146	0.099
28	x00091795	-	0.115	-0.229	0.036	0.092	-0.187	0.019	0.155
29	x00035662	-	0.184	-0.069	-0.018	-0.113	-0.036	0.042	0.009
30	x00095711	-	0.094	-0.277	-0.024	-0.004	0.041	0.078	0.091
31	x00092100	-	-0.011	-0.469	0.072	0.171	0.053	0.116	0.067
32	x00092313	-	-0.271*	-0.168	0.109	0.215	0.336	-0.057	-0.165
33	x00027287	-	-0.258	0.493	-0.056	-0.359	0.236	0.086	-0.142
34	x00092306	-	-0.029	0.340	0.006	-0.060	-0.103	-0.009	-0.145
35	x00092383	-	0.009	-0.804	0.115	0.271	0.199	0.125	0.083
36	x00027278	-	0.011	-0.104	0.097	0.026	0.019	0.053	-0.103
37	x00069112	-	-0.116	0.295	-0.023	-0.104	0.103	0.014	-0.169
38	x00069373	-	0.091	-0.029	-0.002	0.087	-0.140	-0.003	-0.004
39	x00092618	-	0.180	-0.315	0.049	-0.146	-0.038	0.130	0.139
40	x00069514	-	0.104	0.340	-0.151	0.221	-0.366	-0.061	-0.086
41	x00086808	-	-0.006	0.059	-0.007	0.001	-0.170	0.022	0.102
42	x00085987	-	-0.133	0.170	0.070	-0.066	0.114	-0.086	-0.069
43	x00026973	-	-0.114	0.010	0.065	0.006	0.086	-0.045	-0.008
44	x00093767	-	-0.025	-0.007	-0.027	-0.016	0.082	0.002	-0.009
45	x00027195	-	-0.022	0.237	-0.088	0.032	0.101	-0.071	-0.188

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
46	x00092244	-	0.141	-0.507	0.144	0.042	-0.104	0.095	0.190
47	x00093496	-	0.084	0.126	-0.072	-0.047	0.183	-0.099	-0.175
48	x00092532	-	-0.215	0.351	-0.112	0.141	0.315	-0.254	-0.227

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

G.P.31. Year 9 Numeracy Item DIF: Gender, LBOTE, and Indigenous

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
1	x00026946	-0.261	0.199	0.348
2	x00027316	0.405	0.455	0.412
3	x00093738	-0.147	0.185	0.070
4	x00027280	-0.135	0.029	-0.034
5	x00092096	0.143	0.195	0.184
6	x00094838	0.495	0.215	0.074
7	x00092579	-0.423	0.207	-0.350
8	x00027177	-0.147	-0.201	0.328
9	x00094451	-0.179	0.297	0.312
10	x00026942	-0.093	0.101	0.212
11	x00094750	-0.013	0.519	0.150
12	x00092626	-0.119	0.175	0.042
13	x00092519	-0.141	-0.105	-0.054
14	x00092177	0.391	-0.031	-0.048
15	x00094733	-0.069	0.001	-0.578
16	x00092390	-0.175	0.095	-0.158
17	x00095028	0.047	0.011	-0.490
18	x00093710	-0.083	-0.013	-0.406
19	x00027003	-0.135	0.011	-0.498
20	x00026949	-0.117	0.105	-0.486
21	x00092237	0.099	-0.055	-0.658
22	x00068751	-0.131	0.023	-0.970
23	x00092100	0.395	-0.183	-0.550
24	x00093706	-0.471	-0.355	0.268
25	x00092511	-0.231	-0.077	-0.114
26	x00027116	-0.329	-0.265	0.440
27	x00092383	0.333	-0.307	-0.742
28	x00094257	-0.139	-0.013	-0.158
29	x00093733	0.063	0.023	0.098
30	x00094301	0.207	-0.679	1.046
31	x00094358	-0.195	0.057	-1.178
32	x00094295	-0.535	0.371	-0.414
33	x00094280	-0.003	-0.081	0.080
34	x00094732	0.821	0.425	0.164
35	x00027080	-0.069	0.331	0.004
36	x00027086	-0.349	-0.453	0.338
37	x00027090	0.287	0.091	0.036
38	x00094245	-0.035	0.093	0.240
39	x00026947	0.355	-0.409	0.820
40	x00068319	0.273	0.143	0.228
41	x00094393	0.193	0.257	0.070
42	x00035672	0.101	0.271	-0.130
43	x00092102	0.075	-0.281	0.510

Item No.	Item Label	Difference in Item Difficulty (after Adjustment)		
		Gender Difference	LBOTE Difference	Indigenous Difference
44	x00092244	-0.025	0.265	-0.620
45	x00026759	-0.269	-0.247	0.288
46	x00092532	0.365	-0.523	1.108
47	x00094133	-0.277	-0.375	0.264
48	x00094414	0.231	-0.509	0.492

G.P.32. Year 9 Numeracy Item DIF: TAA

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
1	x00026946	-	0.037	0.287	-0.121	-0.030	0.065	-0.090	-0.147
2	x00027316	-	-0.016	0.225	-0.055	-0.041	-0.023	-0.106	0.016
3	x00093738	-	0.185	0.019	-0.054	-0.015	-0.020	-0.088	-0.027
4	x00027280	-	0.042	0.007	-0.017	-0.090	-0.103	-0.013	0.174
5	x00092096	-	-0.070	0.192	-0.083	0.040	0.022	-0.074	-0.028
6	x00094838	-	0.028	0.184	0.092	-0.161	-0.131	-0.055	0.043
7	x00092579	-	-0.153	-0.118	0.011	0.015	-0.037	0.068	0.213
8	x00027177	-	-0.003	-0.082	-0.060	0.005	0.089	0.031	0.020
9	x00094451	-	0.050	0.353	-0.177	-0.017	0.055	-0.091	-0.173
10	x00026942	-	0.004	0.177	-0.052	-0.011	0.026	-0.073	-0.070
11	x00094750	-	0.079	0.167	0.059	-0.094	-0.175	-0.073	0.038
12	x00092626	-	-0.006	-0.125	-0.013	0.061	0.007	0.054	0.023
13	x00092519	-	0.124	0.053	0.061	-0.084	-0.179	-0.003	0.027
14	x00092177	-	-0.086	0.174	0.082	-0.102	0.003	-0.043	-0.029
15	x00094733	-	0.062	0.357	-0.158	0.017	0.034	-0.050	-0.262*
16	x00092390	-	0.142	-0.268	-0.052	-0.057	-0.038	0.178	0.095
17	x00095028	-	0.136	-0.267	0.078	-0.109	-0.205	0.124	0.243*
18	x00093710	-	-0.166	0.173	-0.106	-0.013	-0.006	0.105	0.013
19	x00027003	-	0.102	-0.408	0.049	0.062	-0.072	0.096	0.171
20	x00026949	-	0.111	-0.179	-0.001	0.013	-0.108	0.045	0.120
21	x00092237	-	0.034	-0.094	0.063	-0.149	0.031	0.057	0.058
22	x00068751	-	0.243*	-0.555	-0.022	0.084	0.012	0.117	0.121
23	x00092100	-	0.012	0.159	-0.025	-0.034	-0.042	0.008	-0.078
24	x00093706	-	0.170	-0.597	0.164	0.286	-0.017	0.120	-0.126
25	x00092511	-	0.085	-0.150	0.073	0.029	-0.098	0.036	0.025
26	x00027116	-	-0.316*	0.420	-0.053	0.028	0.033	0.007	-0.118
27	x00092383	-	-0.135	0.002	0.000	0.100	0.062	-0.025	-0.004
28	x00094257	-	0.057	-0.149	0.023	0.064	-0.074	0.041	0.037
29	x00093733	-	-0.123	0.023	0.172	0.022	0.013	-0.079	-0.028
30	x00094301	-	-0.229	0.375	-0.001	0.144	0.091	-0.190	-0.190
31	x00094358	-	0.291*	-0.522	-0.025	-0.163	-0.157	0.170	0.406*
32	x00094295	-	0.174	-0.083	-0.118	-0.095	-0.068	0.087	0.103
33	x00094280	-	-0.083	0.118	-0.058	0.008	0.168	-0.102	-0.051
34	x00094732	-	-0.008	-0.115	0.015	-0.088	0.128	0.026	0.042
35	x00027080	-	0.001	-0.076	-0.087	0.064	0.040	0.090	-0.032
36	x00027086	-	-0.220	-0.503	0.157	0.053	0.165	0.281	0.067
37	x00027090	-	-0.123	-0.083	0.132	-0.036	-0.084	0.185	0.009
38	x00094245	-	-0.006	0.177	-0.050	-0.033	-0.013	-0.025	-0.051
39	x00026947	-	-0.447*	0.609	-0.030	0.175	0.132	-0.179	-0.260
40	x00068319	-	0.099	-0.257	0.220	-0.002	0.065	-0.066	-0.060
41	x00094393	-	0.102	0.112	0.008	0.057	0.012	-0.195	-0.096
42	x00035672	-	-0.052	-0.047	-0.013	-0.036	-0.053	0.094	0.108
43	x00092102	-	0.007	-0.059	0.019	0.050	0.242	-0.164	-0.094
44	x00092244	-	0.165	-0.346	0.085	-0.109	-0.229	0.076	0.358*
45	x00026759	-	0.027	0.161	0.020	-0.008	-0.025	-0.147	-0.029

		Difference in Item Difficulty (after Adjustment)							
Item No	**Item Label**	**ACT**	**NSW**	**NT**	**QLD**	**SA**	**TAS**	**VIC**	**WA**
46	x00092532	-	-0.008	0.076	-0.082	0.106	0.219	-0.143	-0.169
47	x00094133	-	-0.007	0.254	-0.069	-0.211	0.033	0.065	-0.065
48	x00094414	-	-0.316	0.228	-0.002	0.306	0.212	-0.087	-0.341*

Note. Positive value in this table indicates that the item is harder for the corresponding TAA. Significant differences are denoted with *.

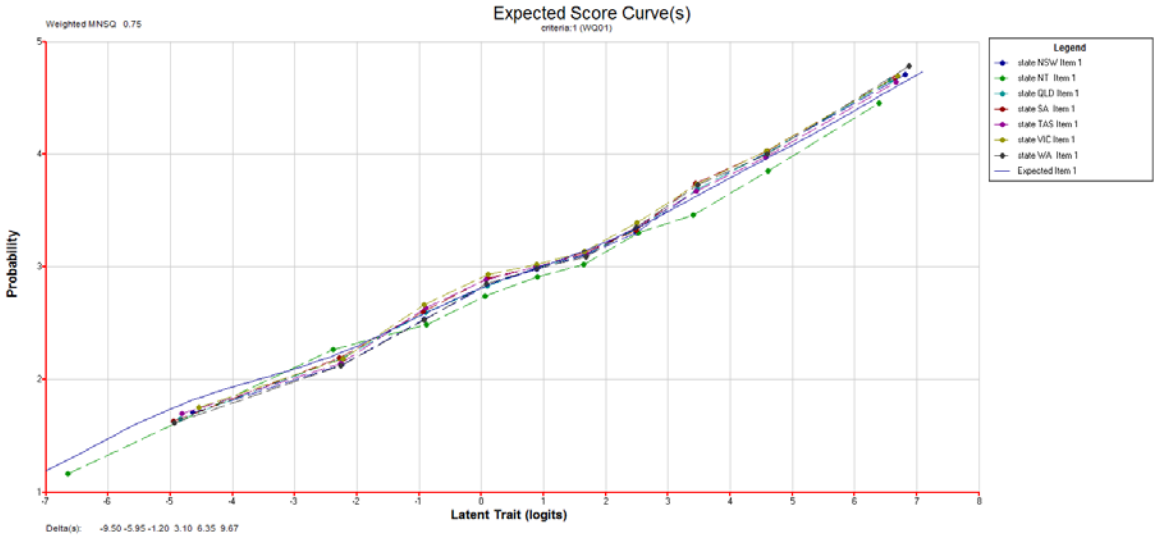
G.P.33. Writing Item DIF: Gender, LBOTE, and Indigenous

	Difference in Item Difficulty (after Adjustment)		
Item Label	**Gender**	**LBOTE**	**Indigenous**
WQ01	0.036	-0.088	-0.056
WQ02	0.087	0.012	-0.045
WQ03	-0.129	-0.114	0.008
WQ04	0.015	-0.092	0.003
WQ05	-0.283	-0.015	0.041
WQ06	0.094	-0.108	0.037
WQ07	0.087	0.115	-0.189
WQ08	0.059	-0.276	-0.020
WQ09	0.277	0.251	0.013
WQ10	-0.244	0.315	0.209

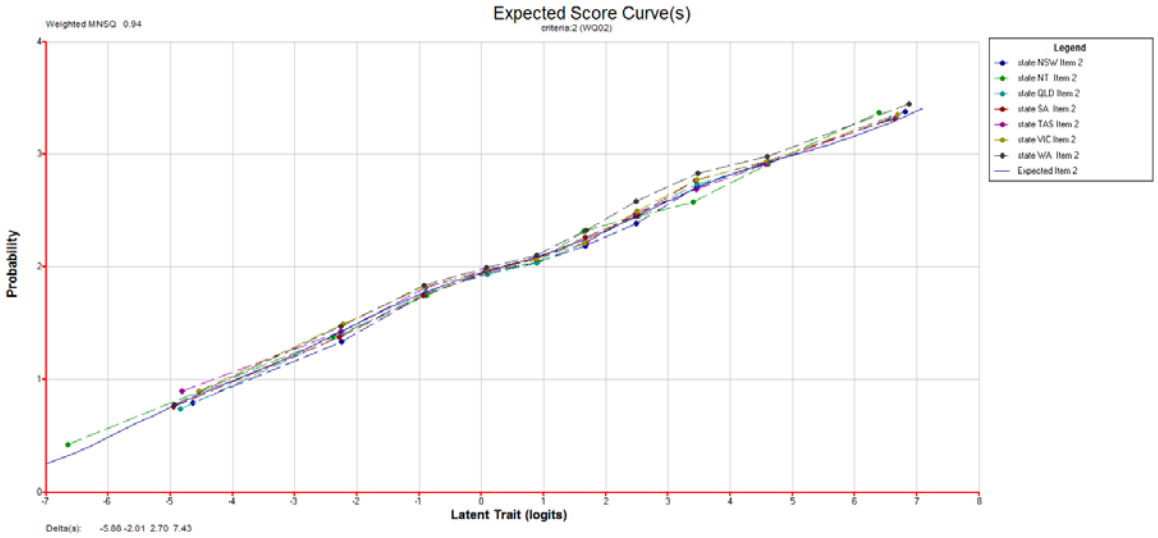
Note. Positive value in the table indicates that the item is easier for female/LBOTE/Indigenous groups.

APPENDIX H.P. EXPECTED SCORE CURVES OF WRITING CRITERIA

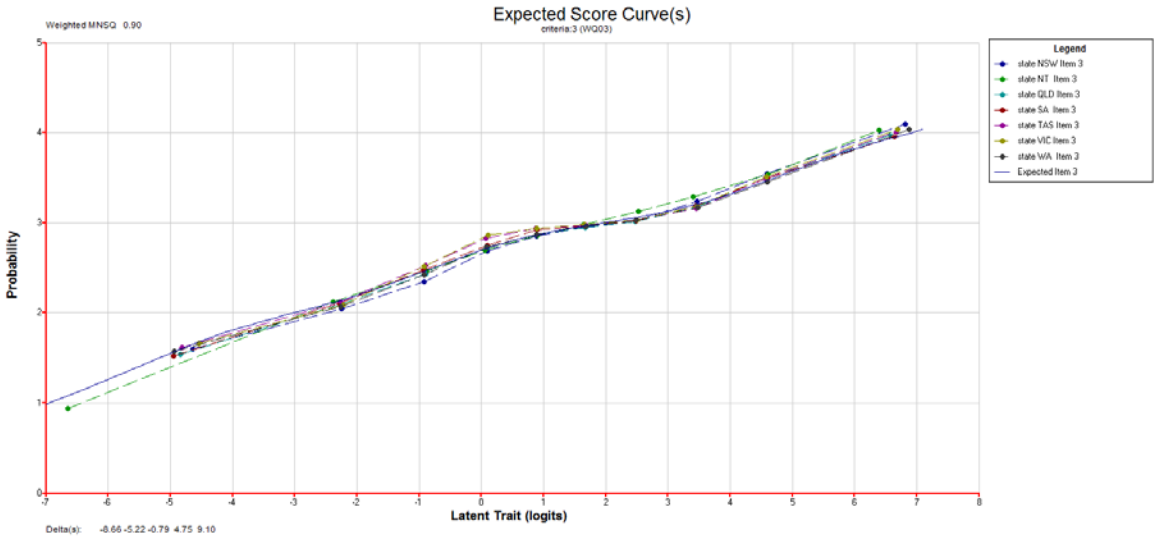
H.P.1. Criterion 1: Audience



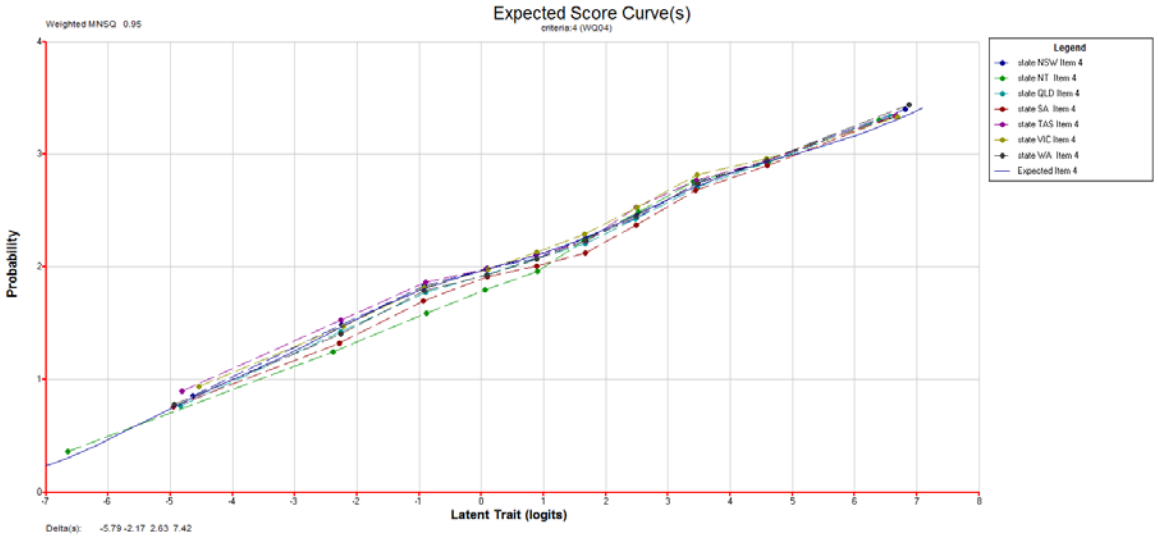
H.P.2. Criterion 2: Text Structure



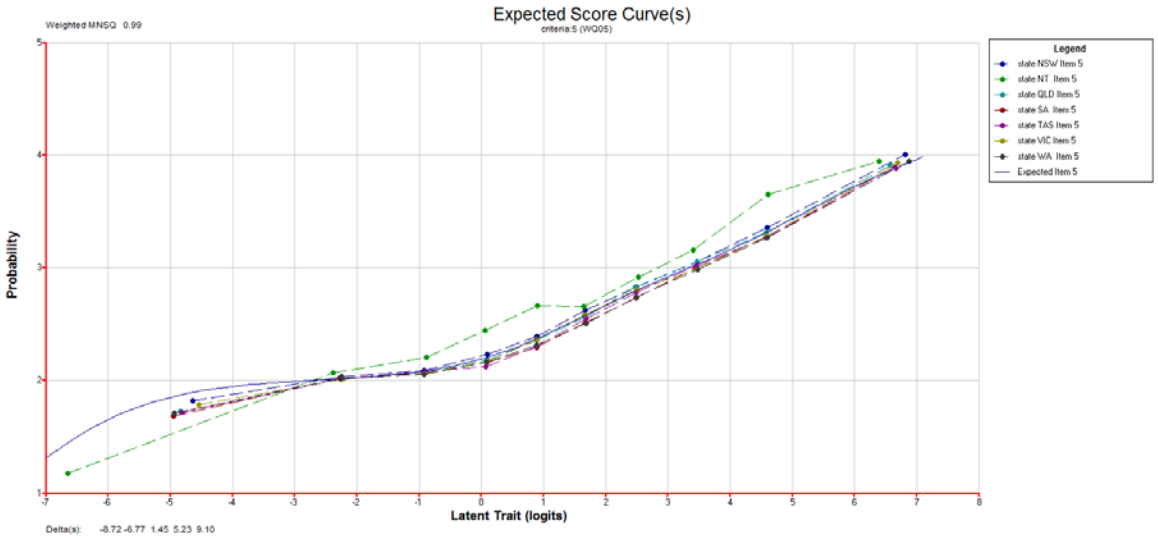
H.P.3. Criterion 3: Ideas



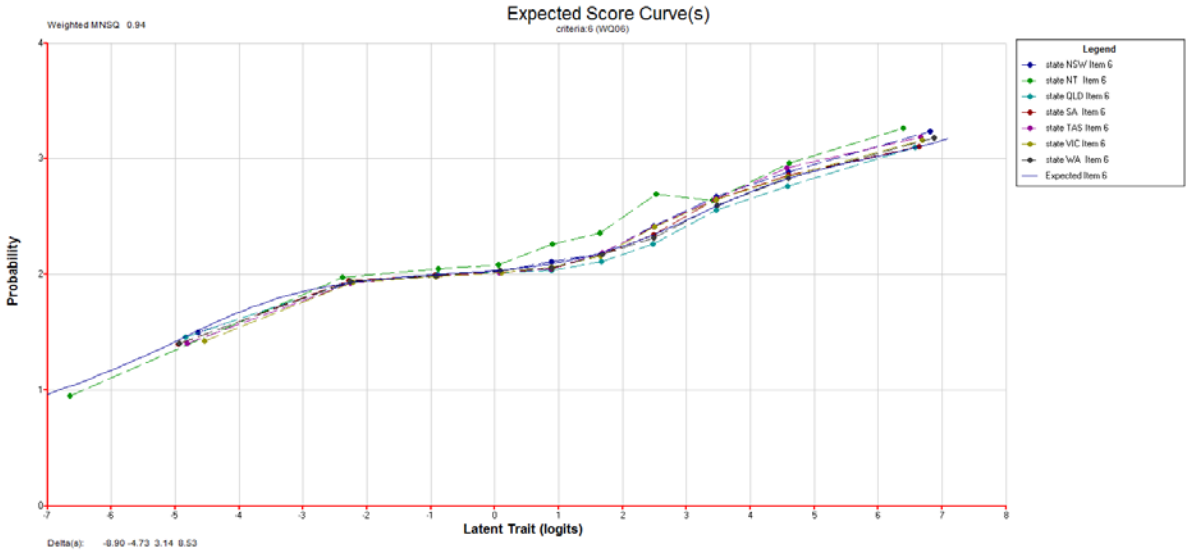
H.P.4. Criterion 4: Persuasive Devices



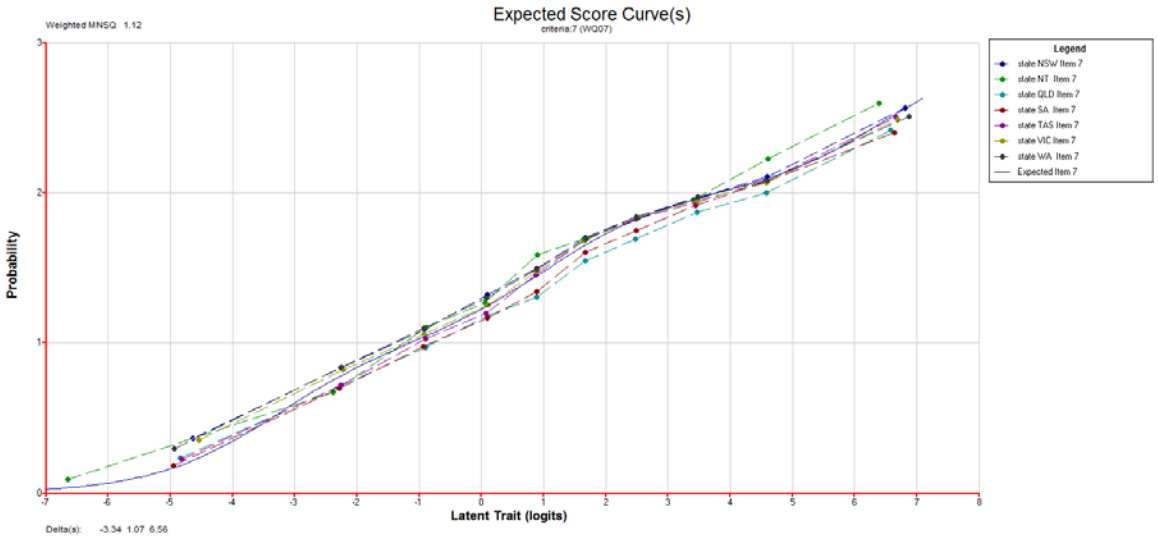
H.P.5. Criterion 5: Vocabulary



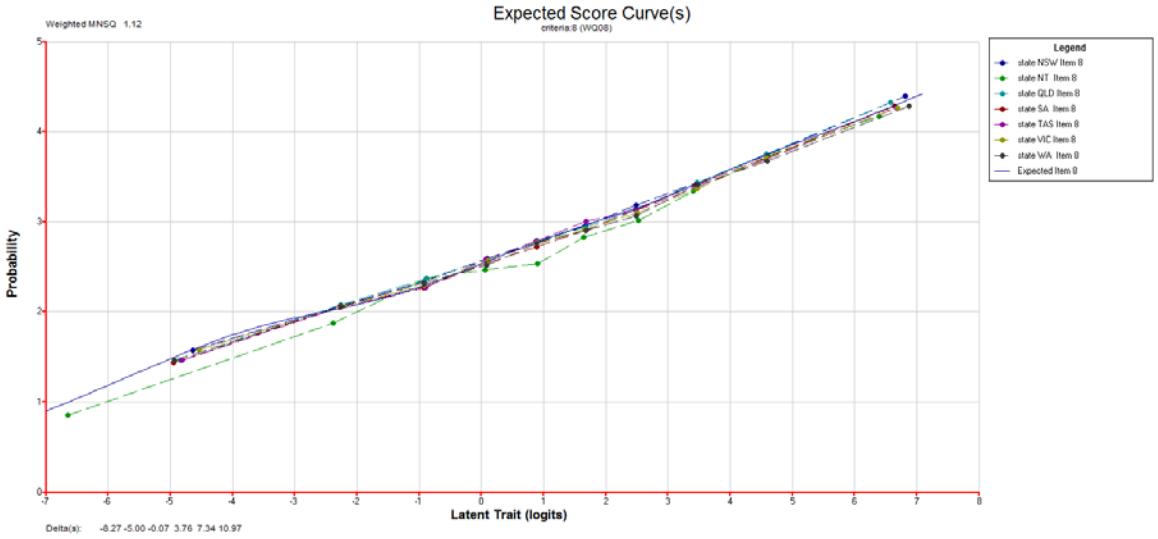
H.P.6. Criterion 6: Cohesion



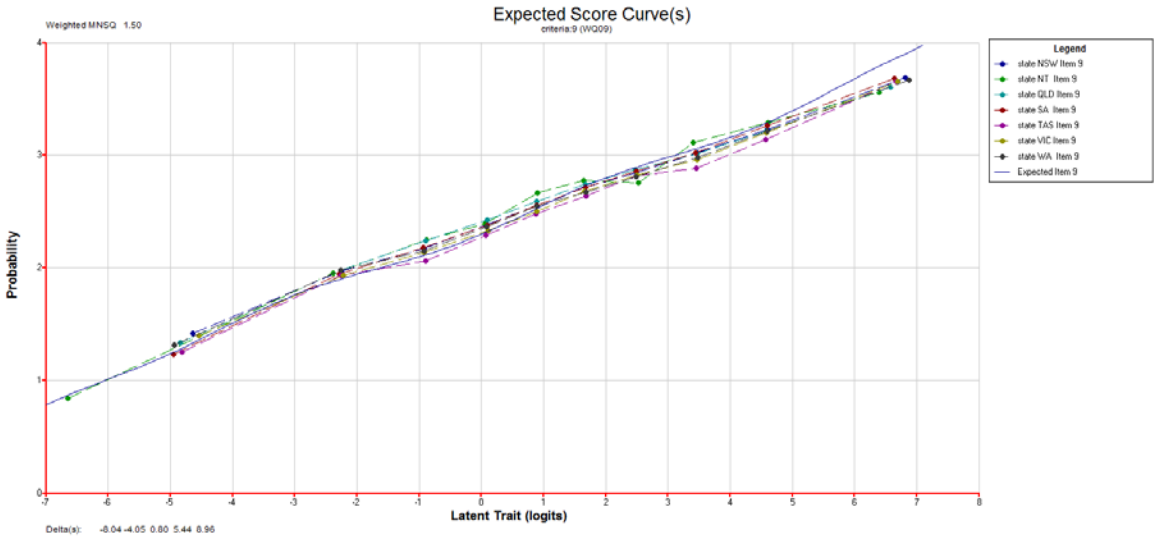
H.P.7. Criterion 7: Paragraphing



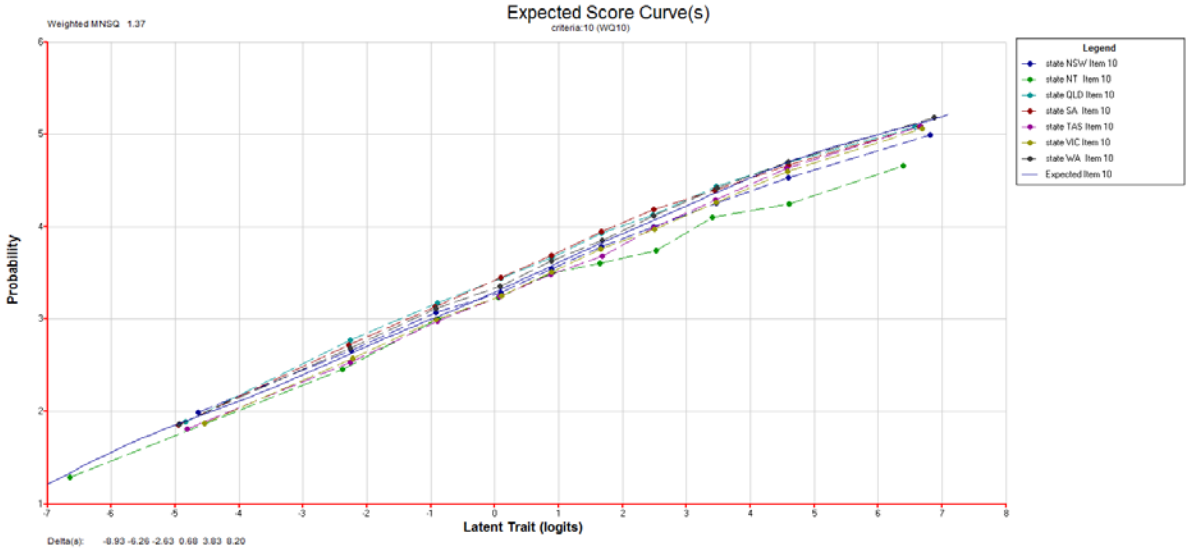
H.P.8. Criterion 8: Sentence Structure



H.P.9. Criterion 9: Punctuation



H.P.10. Criterion 10: Spelling



APPENDIX I.P. SCORE EQUIVALENCE TABLES (PAPER TEST)

I.P.1. Year 3 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
3	Reading	0	-5.284	1.501	-7.785	-101.9	101.0	1
3	Reading	1	-4.096	0.898	-6.013	17.3	60.4	1
3	Reading	2	-3.494	0.720	-5.115	77.8	48.4	1
3	Reading	3	-3.064	0.629	-4.474	120.8	42.3	1
3	Reading	4	-2.719	0.573	-3.959	155.5	38.5	1
3	Reading	5	-2.423	0.534	-3.518	185.2	35.9	1
3	Reading	6	-2.161	0.505	-3.126	211.5	34.0	1
3	Reading	7	-1.922	0.483	-2.769	235.5	32.5	1
3	Reading	8	-1.701	0.466	-2.440	257.7	31.3	1
3	Reading	9	-1.494	0.451	-2.131	278.4	30.3	2
3	Reading	10	-1.298	0.439	-1.839	298.1	29.5	2
3	Reading	11	-1.112	0.429	-1.562	316.7	28.8	2
3	Reading	12	-0.934	0.420	-1.297	334.6	28.2	3
3	Reading	13	-0.763	0.412	-1.041	351.7	27.7	3
3	Reading	14	-0.598	0.405	-0.795	368.3	27.3	3
3	Reading	15	-0.438	0.399	-0.556	384.4	26.9	4
3	Reading	16	-0.282	0.395	-0.324	400.0	26.5	4
3	Reading	17	-0.130	0.391	-0.097	415.3	26.3	4
3	Reading	18	0.019	0.388	0.126	430.3	26.1	5
3	Reading	19	0.167	0.385	0.346	445.0	25.9	5
3	Reading	20	0.312	0.384	0.563	459.6	25.8	5
3	Reading	21	0.457	0.384	0.779	474.2	25.8	5
3	Reading	22	0.601	0.384	0.994	488.7	25.8	6
3	Reading	23	0.747	0.386	1.211	503.2	26.0	6
3	Reading	24	0.894	0.389	1.430	518.0	26.2	6
3	Reading	25	1.043	0.393	1.653	533.0	26.4	6
3	Reading	26	1.196	0.399	1.881	548.3	26.8	6
3	Reading	27	1.354	0.407	2.117	564.2	27.4	6
3	Reading	28	1.519	0.417	2.363	580.7	28.0	6
3	Reading	29	1.693	0.430	2.623	598.2	28.9	6
3	Reading	30	1.879	0.447	2.901	616.9	30.0	6
3	Reading	31	2.082	0.468	3.202	637.2	31.5	6
3	Reading	32	2.306	0.497	3.538	659.7	33.4	6
3	Reading	33	2.564	0.537	3.921	685.5	36.1	6
3	Reading	34	2.870	0.595	4.379	716.3	40.0	6
3	Reading	35	3.261	0.687	4.962	755.6	46.2	6
3	Reading	36	3.826	0.868	5.804	812.2	58.4	6
3	Reading	37	4.978	1.468	7.523	927.8	98.7	6

I.P.2. Year 5 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
5	Reading	0	-5.284	1.519	-6.712	-29.7	102.2	3
5	Reading	1	-4.068	0.907	-4.899	92.3	61.0	3
5	Reading	2	-3.449	0.723	-3.975	154.4	48.6	3
5	Reading	3	-3.012	0.625	-3.324	198.2	42.1	3
5	Reading	4	-2.669	0.563	-2.812	232.6	37.9	3
5	Reading	5	-2.383	0.519	-2.386	261.3	34.9	3
5	Reading	6	-2.136	0.486	-2.017	286.1	32.7	3
5	Reading	7	-1.916	0.461	-1.689	308.2	31.0	3
5	Reading	8	-1.717	0.440	-1.392	328.1	29.6	3
5	Reading	9	-1.534	0.424	-1.119	346.5	28.5	3
5	Reading	10	-1.363	0.410	-0.865	363.6	27.6	3
5	Reading	11	-1.202	0.399	-0.625	379.7	26.8	4
5	Reading	12	-1.050	0.390	-0.397	395.1	26.2	4
5	Reading	13	-0.904	0.382	-0.179	409.7	25.7	4
5	Reading	14	-0.763	0.375	0.031	423.9	25.3	4
5	Reading	15	-0.626	0.370	0.235	437.6	24.9	5
5	Reading	16	-0.493	0.366	0.433	450.9	24.6	5
5	Reading	17	-0.363	0.362	0.627	464.0	24.4	5
5	Reading	18	-0.235	0.360	0.819	476.8	24.2	5
5	Reading	19	-0.108	0.358	1.008	489.6	24.1	6
5	Reading	20	0.018	0.358	1.195	502.2	24.0	6
5	Reading	21	0.143	0.357	1.383	514.8	24.0	6
5	Reading	22	0.269	0.358	1.570	527.4	24.1	6
5	Reading	23	0.396	0.360	1.759	540.1	24.2	7
5	Reading	24	0.524	0.362	1.949	552.9	24.4	7
5	Reading	25	0.653	0.366	2.143	565.9	24.6	7
5	Reading	26	0.786	0.370	2.341	579.2	24.9	7
5	Reading	27	0.922	0.376	2.544	592.9	25.3	8
5	Reading	28	1.063	0.383	2.755	607.1	25.8	8
5	Reading	29	1.210	0.392	2.973	621.8	26.3	8
5	Reading	30	1.364	0.402	3.203	637.2	27.1	8
5	Reading	31	1.527	0.415	3.447	653.6	27.9	8
5	Reading	32	1.703	0.432	3.708	671.2	29.0	8
5	Reading	33	1.893	0.452	3.992	690.3	30.4	8
5	Reading	34	2.104	0.478	4.306	711.4	32.1	8
5	Reading	35	2.342	0.512	4.662	735.3	34.4	8
5	Reading	36	2.620	0.557	5.077	763.3	37.5	8
5	Reading	37	2.960	0.624	5.583	797.3	41.9	8
5	Reading	38	3.403	0.728	6.244	841.8	49.0	8
5	Reading	39	4.053	0.925	7.214	907.0	62.2	8
5	Reading	40	5.338	1.563	9.131	1036.0	105.2	8

I.P.3. Year 7 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
7	Reading	0	-5.591	1.476	-4.344	129.6	99.3	4
7	Reading	1	-4.431	0.874	-3.054	216.4	58.8	4
7	Reading	2	-3.857	0.695	-2.416	259.2	46.7	4
7	Reading	3	-3.458	0.601	-1.973	289.1	40.5	4
7	Reading	4	-3.144	0.543	-1.623	312.6	36.5	4
7	Reading	5	-2.879	0.503	-1.329	332.4	33.8	4
7	Reading	6	-2.648	0.473	-1.072	349.7	31.8	4
7	Reading	7	-2.441	0.450	-0.842	365.2	30.3	4
7	Reading	8	-2.251	0.432	-0.631	379.4	29.0	4
7	Reading	9	-2.074	0.417	-0.434	392.6	28.0	4
7	Reading	10	-1.909	0.404	-0.250	404.9	27.2	4
7	Reading	11	-1.752	0.394	-0.076	416.7	26.5	4
7	Reading	12	-1.602	0.385	0.091	427.9	25.9	5
7	Reading	13	-1.458	0.378	0.250	438.6	25.4	5
7	Reading	14	-1.320	0.371	0.404	449.0	25.0	5
7	Reading	15	-1.186	0.365	0.553	459.0	24.6	5
7	Reading	16	-1.055	0.360	0.698	468.7	24.2	5
7	Reading	17	-0.928	0.356	0.839	478.2	23.9	6
7	Reading	18	-0.804	0.352	0.978	487.5	23.7	6
7	Reading	19	-0.682	0.349	1.113	496.6	23.5	6
7	Reading	20	-0.563	0.346	1.246	505.6	23.3	6
7	Reading	21	-0.445	0.344	1.377	514.4	23.1	6
7	Reading	22	-0.329	0.342	1.506	523.1	23.0	6
7	Reading	23	-0.213	0.340	1.634	531.7	22.9	7
7	Reading	24	-0.099	0.339	1.761	540.2	22.8	7
7	Reading	25	0.014	0.339	1.887	548.7	22.8	7
7	Reading	26	0.128	0.338	2.013	557.2	22.8	7
7	Reading	27	0.241	0.339	2.139	565.7	22.8	7
7	Reading	28	0.354	0.339	2.265	574.2	22.8	7
7	Reading	29	0.469	0.340	2.392	582.7	22.9	8
7	Reading	30	0.583	0.342	2.520	591.3	23.0	8
7	Reading	31	0.700	0.344	2.649	600.0	23.2	8
7	Reading	32	0.818	0.347	2.780	608.8	23.3	8
7	Reading	33	0.938	0.350	2.914	617.8	23.6	8
7	Reading	34	1.060	0.355	3.050	626.9	23.8	8
7	Reading	35	1.186	0.359	3.189	636.3	24.2	9
7	Reading	36	1.315	0.365	3.333	646.0	24.6	9
7	Reading	37	1.449	0.372	3.482	656.0	25.0	9
7	Reading	38	1.588	0.380	3.636	666.4	25.6	9
7	Reading	39	1.733	0.389	3.798	677.3	26.2	9
7	Reading	40	1.887	0.400	3.969	688.7	26.9	9
7	Reading	41	2.049	0.414	4.149	700.9	27.8	9
7	Reading	42	2.224	0.430	4.343	713.9	28.9	9
7	Reading	43	2.413	0.449	4.554	728.1	30.2	9
7	Reading	44	2.621	0.474	4.785	743.7	31.9	9
7	Reading	45	2.855	0.505	5.045	761.1	34.0	9
7	Reading	46	3.125	0.547	5.345	781.3	36.8	9
7	Reading	47	3.447	0.608	5.704	805.4	40.9	9

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
7	Reading	48	3.859	0.704	6.161	836.2	47.3	9
7	Reading	49	4.449	0.886	6.817	880.3	59.6	9
7	Reading	50	5.633	1.494	8.133	968.8	100.5	9

I.P.4. Year 9 Reading Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
9	Reading	0	-5.832	1.522	-3.951	156.0	102.4	5
9	Reading	1	-4.613	0.909	-2.671	242.1	61.2	5
9	Reading	2	-3.991	0.725	-2.018	286.0	48.8	5
9	Reading	3	-3.552	0.628	-1.557	317.0	42.2	5
9	Reading	4	-3.206	0.566	-1.194	341.5	38.1	5
9	Reading	5	-2.917	0.522	-0.891	361.9	35.1	5
9	Reading	6	-2.667	0.488	-0.628	379.5	32.9	5
9	Reading	7	-2.445	0.462	-0.395	395.2	31.1	5
9	Reading	8	-2.244	0.441	-0.184	409.4	29.7	5
9	Reading	9	-2.059	0.424	0.010	422.4	28.5	5
9	Reading	10	-1.888	0.409	0.189	434.5	27.5	5
9	Reading	11	-1.728	0.397	0.358	445.8	26.7	5
9	Reading	12	-1.576	0.387	0.517	456.5	26.0	5
9	Reading	13	-1.432	0.378	0.668	466.7	25.4	5
9	Reading	14	-1.295	0.370	0.812	476.4	24.9	5
9	Reading	15	-1.162	0.363	0.951	485.8	24.4	6
9	Reading	16	-1.034	0.357	1.086	494.8	24.0	6
9	Reading	17	-0.910	0.352	1.216	503.6	23.7	6
9	Reading	18	-0.789	0.348	1.343	512.1	23.4	6
9	Reading	19	-0.671	0.344	1.467	520.5	23.2	6
9	Reading	20	-0.555	0.341	1.589	528.6	23.0	6
9	Reading	21	-0.441	0.339	1.709	536.7	22.8	7
9	Reading	22	-0.328	0.337	1.827	544.7	22.7	7
9	Reading	23	-0.216	0.336	1.944	552.6	22.6	7
9	Reading	24	-0.105	0.335	2.061	560.4	22.5	7
9	Reading	25	0.005	0.335	2.177	568.2	22.5	7
9	Reading	26	0.116	0.335	2.293	576.0	22.5	7
9	Reading	27	0.227	0.335	2.409	583.8	22.6	8
9	Reading	28	0.338	0.337	2.526	591.7	22.6	8
9	Reading	29	0.450	0.338	2.644	599.6	22.7	8
9	Reading	30	0.564	0.340	2.763	607.6	22.9	8
9	Reading	31	0.679	0.343	2.884	615.8	23.1	8
9	Reading	32	0.796	0.347	3.007	624.0	23.3	8
9	Reading	33	0.916	0.351	3.133	632.5	23.6	8
9	Reading	34	1.039	0.356	3.262	641.2	23.9	9
9	Reading	35	1.166	0.361	3.395	650.1	24.3	9
9	Reading	36	1.297	0.368	3.532	659.4	24.7	9
9	Reading	37	1.433	0.376	3.675	669.0	25.3	9
9	Reading	38	1.575	0.385	3.825	679.0	25.9	9
9	Reading	39	1.725	0.395	3.982	689.6	26.6	10
9	Reading	40	1.884	0.408	4.149	700.8	27.4	10
9	Reading	41	2.053	0.422	4.327	712.8	28.4	10
9	Reading	42	2.237	0.440	4.519	725.7	29.6	10
9	Reading	43	2.436	0.461	4.729	739.9	31.0	10
9	Reading	44	2.658	0.488	4.961	755.5	32.8	10
9	Reading	45	2.908	0.521	5.224	773.1	35.1	10
9	Reading	46	3.197	0.566	5.527	793.6	38.0	10
9	Reading	47	3.543	0.628	5.891	818.0	42.2	10

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
9	Reading	48	3.983	0.725	6.352	849.0	48.8	10
9	Reading	49	4.606	0.910	7.006	893.0	61.2	10
9	Reading	50	5.827	1.523	8.288	979.2	102.5	10

I.P.5. Year 3 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
3	Spelling	0	-5.943	1.627	-6.614	212.1	62.0	1
3	Spelling	1	-4.600	1.007	-5.249	264.1	38.4	1
3	Spelling	2	-3.836	0.830	-4.473	293.7	31.6	2
3	Spelling	3	-3.250	0.738	-3.878	316.4	28.1	2
3	Spelling	4	-2.762	0.680	-3.382	335.3	25.9	3
3	Spelling	5	-2.338	0.640	-2.951	351.7	24.4	3
3	Spelling	6	-1.957	0.611	-2.564	366.4	23.3	3
3	Spelling	7	-1.605	0.590	-2.206	380.1	22.5	4
3	Spelling	8	-1.273	0.574	-1.869	392.9	21.9	4
3	Spelling	9	-0.954	0.563	-1.545	405.3	21.5	4
3	Spelling	10	-0.646	0.554	-1.232	417.2	21.1	4
3	Spelling	11	-0.345	0.548	-0.927	428.8	20.9	5
3	Spelling	12	-0.051	0.543	-0.628	440.2	20.7	5
3	Spelling	13	0.239	0.540	-0.333	451.5	20.6	5
3	Spelling	14	0.527	0.539	-0.041	462.6	20.6	5
3	Spelling	15	0.814	0.541	0.250	473.7	20.6	5
3	Spelling	16	1.103	0.544	0.544	484.9	20.7	6
3	Spelling	17	1.397	0.551	0.843	496.3	21.0	6
3	Spelling	18	1.699	0.561	1.150	508.0	21.4	6
3	Spelling	19	2.014	0.576	1.470	520.2	22.0	6
3	Spelling	20	2.348	0.599	1.809	533.1	22.8	6
3	Spelling	21	2.710	0.631	2.177	547.1	24.1	6
3	Spelling	22	3.119	0.682	2.592	562.9	26.0	6
3	Spelling	23	3.609	0.768	3.090	581.9	29.3	6
3	Spelling	24	4.270	0.943	3.762	607.5	35.9	6
3	Spelling	25	5.517	1.552	5.028	655.8	59.2	6

I.P.6. Year 5 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
5	Spelling	0	-5.780	1.677	-4.475	293.6	63.9	3
5	Spelling	1	-4.347	1.025	-3.060	347.5	39.0	3
5	Spelling	2	-3.549	0.829	-2.273	377.5	31.6	4
5	Spelling	3	-2.971	0.728	-1.702	399.3	27.7	4
5	Spelling	4	-2.503	0.666	-1.241	416.9	25.4	4
5	Spelling	5	-2.100	0.624	-0.843	432.0	23.8	5
5	Spelling	6	-1.738	0.593	-0.486	445.6	22.6	5
5	Spelling	7	-1.406	0.570	-0.158	458.1	21.7	5
5	Spelling	8	-1.095	0.552	0.148	469.8	21.0	5
5	Spelling	9	-0.803	0.537	0.437	480.8	20.5	6
5	Spelling	10	-0.524	0.525	0.712	491.3	20.0	6
5	Spelling	11	-0.258	0.515	0.975	501.3	19.6	6
5	Spelling	12	0.000	0.508	1.230	511.0	19.4	6
5	Spelling	13	0.251	0.504	1.477	520.4	19.2	6
5	Spelling	14	0.498	0.501	1.721	529.7	19.1	6
5	Spelling	15	0.743	0.502	1.963	539.0	19.1	7
5	Spelling	16	0.990	0.506	2.207	548.2	19.3	7
5	Spelling	17	1.242	0.514	2.455	557.7	19.6	7
5	Spelling	18	1.504	0.527	2.714	567.6	20.1	7
5	Spelling	19	1.781	0.546	2.987	578.0	20.8	7
5	Spelling	20	2.082	0.573	3.284	589.3	21.8	8
5	Spelling	21	2.419	0.611	3.617	602.0	23.3	8
5	Spelling	22	2.812	0.670	4.004	616.8	25.5	8
5	Spelling	23	3.298	0.764	4.485	635.1	29.1	8
5	Spelling	24	3.970	0.946	5.148	660.3	36.1	8
5	Spelling	25	5.239	1.564	6.400	708.0	59.6	8

I.P.7. Year 7 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
7	Spelling	0	-5.364	1.584	-3.348	336.6	60.3	4
7	Spelling	1	-4.080	0.973	-2.006	387.7	37.1	4
7	Spelling	2	-3.371	0.798	-1.265	415.9	30.4	4
7	Spelling	3	-2.832	0.709	-0.702	437.4	27.0	5
7	Spelling	4	-2.383	0.650	-0.232	455.3	24.8	5
7	Spelling	5	-1.994	0.607	0.175	470.8	23.1	5
7	Spelling	6	-1.650	0.574	0.534	484.5	21.9	6
7	Spelling	7	-1.340	0.549	0.857	496.8	20.9	6
7	Spelling	8	-1.056	0.529	1.154	508.1	20.1	6
7	Spelling	9	-0.791	0.513	1.432	518.7	19.6	6
7	Spelling	10	-0.540	0.502	1.695	528.7	19.1	6
7	Spelling	11	-0.297	0.494	1.948	538.4	18.8	7
7	Spelling	12	-0.062	0.490	2.194	547.8	18.7	7
7	Spelling	13	0.171	0.488	2.438	557.1	18.6	7
7	Spelling	14	0.404	0.489	2.681	566.3	18.6	7
7	Spelling	15	0.638	0.493	2.926	575.7	18.8	7
7	Spelling	16	0.879	0.501	3.177	585.2	19.1	8
7	Spelling	17	1.128	0.512	3.437	595.1	19.5	8
7	Spelling	18	1.390	0.528	3.712	605.6	20.1	8
7	Spelling	19	1.672	0.549	4.006	616.8	20.9	8
7	Spelling	20	1.980	0.579	4.328	629.1	22.0	8
7	Spelling	21	2.328	0.619	4.692	643.0	23.6	9
7	Spelling	22	2.734	0.679	5.116	659.1	25.9	9
7	Spelling	23	3.235	0.773	5.640	679.1	29.5	9
7	Spelling	24	3.921	0.956	6.358	706.4	36.4	9
7	Spelling	25	5.202	1.575	7.697	757.5	60.0	9

I.P.8. Year 9 Spelling Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
9	Spelling	0	-5.451	1.597	-2.586	365.6	60.8	5
9	Spelling	1	-4.142	0.975	-1.140	420.7	37.2	5
9	Spelling	2	-3.427	0.793	-0.348	450.9	30.2	5
9	Spelling	3	-2.897	0.699	0.238	473.2	26.7	5
9	Spelling	4	-2.464	0.640	0.716	491.5	24.4	6
9	Spelling	5	-2.092	0.599	1.128	507.2	22.8	6
9	Spelling	6	-1.759	0.570	1.496	521.2	21.7	6
9	Spelling	7	-1.454	0.549	1.834	534.0	20.9	7
9	Spelling	8	-1.168	0.533	2.150	546.1	20.3	7
9	Spelling	9	-0.897	0.521	2.450	557.5	19.9	7
9	Spelling	10	-0.635	0.513	2.740	568.6	19.5	7
9	Spelling	11	-0.380	0.507	3.022	579.3	19.3	7
9	Spelling	12	-0.129	0.504	3.299	589.9	19.2	8
9	Spelling	13	0.121	0.504	3.575	600.4	19.2	8
9	Spelling	14	0.370	0.505	3.851	610.9	19.3	8
9	Spelling	15	0.622	0.509	4.129	621.5	19.4	8
9	Spelling	16	0.879	0.517	4.413	632.3	19.7	8
9	Spelling	17	1.144	0.528	4.707	643.5	20.1	9
9	Spelling	18	1.422	0.544	5.015	655.3	20.7	9
9	Spelling	19	1.720	0.566	5.344	667.8	21.6	9
9	Spelling	20	2.048	0.599	5.706	681.6	22.8	9
9	Spelling	21	2.421	0.645	6.119	697.3	24.6	10
9	Spelling	22	2.867	0.714	6.613	716.2	27.2	10
9	Spelling	23	3.440	0.823	7.246	740.3	31.4	10
9	Spelling	24	4.249	1.027	8.140	774.4	39.1	10
9	Spelling	25	5.694	1.682	9.738	835.3	64.1	10

I.P.9. Year 3 Grammar and Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
3	GP	0	-4.953	1.572	-6.552	-73.7	115.5	1
3	GP	1	-3.674	0.954	-4.788	56.0	70.1	1
3	GP	2	-2.989	0.771	-3.842	125.5	56.7	1
3	GP	3	-2.490	0.674	-3.153	176.1	49.6	1
3	GP	4	-2.089	0.613	-2.600	216.8	45.1	1
3	GP	5	-1.749	0.570	-2.130	251.3	41.9	1
3	GP	6	-1.450	0.539	-1.717	281.7	39.6	2
3	GP	7	-1.179	0.515	-1.343	309.2	37.9	2
3	GP	8	-0.929	0.498	-0.998	334.5	36.6	3
3	GP	9	-0.694	0.484	-0.674	358.4	35.6	3
3	GP	10	-0.470	0.475	-0.365	381.1	34.9	4
3	GP	11	-0.254	0.468	-0.066	403.1	34.4	4
3	GP	12	-0.043	0.464	0.226	424.5	34.1	4
3	GP	13	0.166	0.462	0.514	445.7	34.0	5
3	GP	14	0.375	0.463	0.802	466.9	34.0	5
3	GP	15	0.585	0.467	1.092	488.2	34.3	6
3	GP	16	0.800	0.473	1.389	510.0	34.7	6
3	GP	17	1.021	0.482	1.694	532.4	35.4	6
3	GP	18	1.252	0.495	2.013	555.9	36.4	6
3	GP	19	1.498	0.514	2.353	580.8	37.8	6
3	GP	20	1.764	0.539	2.720	607.9	39.6	6
3	GP	21	2.062	0.576	3.131	638.0	42.3	6
3	GP	22	2.407	0.630	3.607	673.0	46.3	6
3	GP	23	2.834	0.720	4.197	716.4	52.9	6
3	GP	24	3.434	0.897	5.025	777.3	65.9	6
3	GP	25	4.619	1.500	6.661	897.5	110.2	6

I.P.10. Year 5 Grammar and Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
5	GP	0	-4.934	1.554	-5.660	-8.1	114.2	3
5	GP	1	-3.678	0.937	-3.942	118.1	68.9	3
5	GP	2	-3.021	0.755	-3.044	184.2	55.5	3
5	GP	3	-2.547	0.662	-2.396	231.8	48.6	3
5	GP	4	-2.163	0.605	-1.872	270.3	44.4	3
5	GP	5	-1.834	0.566	-1.421	303.5	41.6	3
5	GP	6	-1.539	0.539	-1.018	333.1	39.6	3
5	GP	7	-1.268	0.519	-0.647	360.4	38.1	3
5	GP	8	-1.013	0.504	-0.299	385.9	37.1	4
5	GP	9	-0.770	0.494	0.033	410.3	36.3	4
5	GP	10	-0.536	0.486	0.354	433.9	35.7	5
5	GP	11	-0.306	0.481	0.667	457.0	35.4	5
5	GP	12	-0.080	0.479	0.976	479.7	35.2	6
5	GP	13	0.144	0.478	1.284	502.3	35.1	6
5	GP	14	0.369	0.479	1.591	524.9	35.2	6
5	GP	15	0.596	0.483	1.901	547.6	35.5	7
5	GP	16	0.826	0.488	2.216	570.8	35.9	7
5	GP	17	1.063	0.496	2.539	594.5	36.5	8
5	GP	18	1.308	0.509	2.874	619.2	37.4	8
5	GP	19	1.566	0.526	3.227	645.1	38.6	8
5	GP	20	1.844	0.550	3.607	673.0	40.4	8
5	GP	21	2.151	0.585	4.027	703.9	43.0	8
5	GP	22	2.505	0.638	4.511	739.5	46.9	8
5	GP	23	2.941	0.727	5.107	783.3	53.4	8
5	GP	24	3.548	0.904	5.937	844.3	66.4	8
5	GP	25	4.740	1.506	7.567	964.1	110.7	8

I.P.11. Year 7 Grammar and Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
7	GP	0	-4.847	1.529	-3.771	130.7	112.4	4
7	GP	1	-3.625	0.920	-2.447	228.0	67.6	4
7	GP	2	-2.994	0.741	-1.763	278.3	54.5	4
7	GP	3	-2.539	0.651	-1.269	314.6	47.9	4
7	GP	4	-2.169	0.596	-0.869	344.1	43.8	4
7	GP	5	-1.848	0.559	-0.522	369.6	41.1	4
7	GP	6	-1.560	0.533	-0.210	392.5	39.2	4
7	GP	7	-1.294	0.515	0.079	413.7	37.9	4
7	GP	8	-1.043	0.502	0.351	433.7	36.9	5
7	GP	9	-0.802	0.492	0.612	452.9	36.2	5
7	GP	10	-0.569	0.485	0.865	471.5	35.7	5
7	GP	11	-0.340	0.481	1.113	489.7	35.4	6
7	GP	12	-0.114	0.480	1.358	507.7	35.2	6
7	GP	13	0.112	0.480	1.603	525.7	35.3	6
7	GP	14	0.339	0.482	1.849	543.8	35.4	7
7	GP	15	0.569	0.486	2.097	562.1	35.7	7
7	GP	16	0.803	0.493	2.352	580.8	36.2	7
7	GP	17	1.045	0.503	2.614	600.0	36.9	8
7	GP	18	1.298	0.516	2.888	620.2	37.9	8
7	GP	19	1.566	0.534	3.178	641.5	39.3	9
7	GP	20	1.854	0.559	3.490	664.5	41.1	9
7	GP	21	2.174	0.595	3.837	689.9	43.7	9
7	GP	22	2.542	0.649	4.235	719.2	47.7	9
7	GP	23	2.993	0.738	4.724	755.1	54.3	9
7	GP	24	3.616	0.915	5.400	804.8	67.3	9
7	GP	25	4.826	1.521	6.711	901.2	111.8	9

I.P.12. Year 9 Grammar and Punctuation Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
9	GP	0	-4.873	1.539	-3.110	179.3	113.1	5
9	GP	1	-3.638	0.927	-1.694	283.4	68.2	5
9	GP	2	-2.996	0.748	-0.957	337.5	55.0	5
9	GP	3	-2.531	0.657	-0.425	376.7	48.3	5
9	GP	4	-2.154	0.601	0.008	408.5	44.2	5
9	GP	5	-1.828	0.564	0.383	436.0	41.4	5
9	GP	6	-1.535	0.537	0.719	460.7	39.5	5
9	GP	7	-1.264	0.518	1.028	483.5	38.0	6
9	GP	8	-1.011	0.503	1.320	504.9	37.0	6
9	GP	9	-0.768	0.493	1.597	525.3	36.2	6
9	GP	10	-0.535	0.485	1.866	545.0	35.6	7
9	GP	11	-0.307	0.480	2.127	564.3	35.3	7
9	GP	12	-0.082	0.477	2.384	583.2	35.1	8
9	GP	13	0.140	0.476	2.640	601.9	35.0	8
9	GP	14	0.363	0.477	2.895	620.7	35.1	8
9	GP	15	0.587	0.480	3.152	639.6	35.3	9
9	GP	16	0.815	0.486	3.414	658.8	35.7	9
9	GP	17	1.050	0.495	3.683	678.6	36.4	9
9	GP	18	1.293	0.508	3.962	699.1	37.3	10
9	GP	19	1.551	0.525	4.258	720.9	38.6	10
9	GP	20	1.829	0.550	4.577	744.3	40.4	10
9	GP	21	2.137	0.585	4.930	770.3	43.0	10
9	GP	22	2.492	0.639	5.337	800.2	47.0	10
9	GP	23	2.930	0.728	5.839	837.1	53.5	10
9	GP	24	3.539	0.905	6.538	888.4	66.5	10
9	GP	25	4.733	1.508	7.907	989.1	110.8	10

I.P.13. Year 3 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
3	Numeracy	0	-5.421	1.531	-5.977	92.4	91.9	1
3	Numeracy	1	-4.194	0.918	-4.852	160.0	55.1	1
3	Numeracy	2	-3.562	0.735	-4.272	194.8	44.2	1
3	Numeracy	3	-3.111	0.641	-3.859	219.6	38.5	1
3	Numeracy	4	-2.751	0.581	-3.530	239.4	34.9	1
3	Numeracy	5	-2.447	0.539	-3.251	256.1	32.4	1
3	Numeracy	6	-2.179	0.508	-3.006	270.8	30.5	2
3	Numeracy	7	-1.939	0.484	-2.785	284.1	29.1	2
3	Numeracy	8	-1.718	0.465	-2.583	296.2	27.9	2
3	Numeracy	9	-1.513	0.450	-2.394	307.5	27.0	2
3	Numeracy	10	-1.319	0.438	-2.217	318.2	26.3	2
3	Numeracy	11	-1.135	0.428	-2.048	328.3	25.7	3
3	Numeracy	12	-0.958	0.420	-1.886	338.1	25.2	3
3	Numeracy	13	-0.787	0.414	-1.730	347.5	24.8	3
3	Numeracy	14	-0.621	0.409	-1.577	356.6	24.5	3
3	Numeracy	15	-0.458	0.405	-1.428	365.6	24.3	3
3	Numeracy	16	-0.298	0.402	-1.281	374.4	24.1	4
3	Numeracy	17	-0.139	0.400	-1.136	383.1	24.0	4
3	Numeracy	18	0.018	0.400	-0.992	391.8	24.0	4
3	Numeracy	19	0.176	0.400	-0.847	400.5	24.0	4
3	Numeracy	20	0.333	0.401	-0.703	409.1	24.1	4
3	Numeracy	21	0.492	0.403	-0.557	417.9	24.2	4
3	Numeracy	22	0.654	0.407	-0.409	426.8	24.4	5
3	Numeracy	23	0.818	0.411	-0.259	435.8	24.7	5
3	Numeracy	24	0.986	0.417	-0.104	445.1	25.0	5
3	Numeracy	25	1.160	0.424	0.055	454.6	25.5	5
3	Numeracy	26	1.340	0.434	0.220	464.6	26.0	5
3	Numeracy	27	1.529	0.445	0.393	475.0	26.7	5
3	Numeracy	28	1.729	0.459	0.577	486.0	27.6	6
3	Numeracy	29	1.944	0.477	0.773	497.8	28.7	6
3	Numeracy	30	2.176	0.500	0.986	510.6	30.0	6
3	Numeracy	31	2.434	0.529	1.222	524.8	31.8	6
3	Numeracy	32	2.726	0.570	1.490	540.8	34.2	6
3	Numeracy	33	3.070	0.628	1.806	559.8	37.7	6
3	Numeracy	34	3.501	0.720	2.200	583.5	43.3	6
3	Numeracy	35	4.106	0.900	2.755	616.8	54.0	6
3	Numeracy	36	5.300	1.505	3.849	682.5	90.4	6

I.P.14. Year 5 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
5	Numeracy	0	-5.570	1.507	-4.261	195.5	90.5	3
5	Numeracy	1	-4.370	0.898	-3.219	258.0	53.9	3
5	Numeracy	2	-3.764	0.716	-2.693	289.6	43.0	3
5	Numeracy	3	-3.338	0.621	-2.323	311.9	37.3	3
5	Numeracy	4	-3.001	0.561	-2.030	329.4	33.7	3
5	Numeracy	5	-2.718	0.520	-1.785	344.2	31.2	3
5	Numeracy	6	-2.471	0.489	-1.570	357.0	29.4	3
5	Numeracy	7	-2.249	0.465	-1.378	368.6	27.9	3
5	Numeracy	8	-2.046	0.447	-1.201	379.2	26.8	4
5	Numeracy	9	-1.858	0.432	-1.037	389.0	26.0	4
5	Numeracy	10	-1.680	0.420	-0.883	398.3	25.2	4
5	Numeracy	11	-1.511	0.411	-0.736	407.1	24.7	4
5	Numeracy	12	-1.348	0.403	-0.595	415.6	24.2	4
5	Numeracy	13	-1.191	0.396	-0.459	423.8	23.8	4
5	Numeracy	14	-1.039	0.391	-0.327	431.7	23.5	5
5	Numeracy	15	-0.890	0.387	-0.197	439.5	23.2	5
5	Numeracy	16	-0.743	0.384	-0.070	447.1	23.1	5
5	Numeracy	17	-0.599	0.382	0.055	454.7	22.9	5
5	Numeracy	18	-0.456	0.380	0.179	462.1	22.8	5
5	Numeracy	19	-0.314	0.379	0.303	469.5	22.8	5
5	Numeracy	20	-0.172	0.379	0.426	476.9	22.7	5
5	Numeracy	21	-0.030	0.379	0.549	484.3	22.8	6
5	Numeracy	22	0.112	0.380	0.673	491.7	22.8	6
5	Numeracy	23	0.256	0.382	0.797	499.2	22.9	6
5	Numeracy	24	0.400	0.384	0.923	506.8	23.1	6
5	Numeracy	25	0.547	0.387	1.050	514.4	23.2	6
5	Numeracy	26	0.697	0.390	1.180	522.2	23.4	6
5	Numeracy	27	0.849	0.395	1.312	530.2	23.7	7
5	Numeracy	28	1.005	0.400	1.448	538.3	24.0	7
5	Numeracy	29	1.166	0.406	1.587	546.7	24.4	7
5	Numeracy	30	1.332	0.413	1.731	555.3	24.8	7
5	Numeracy	31	1.504	0.422	1.881	564.3	25.3	7
5	Numeracy	32	1.684	0.432	2.037	573.7	25.9	7
5	Numeracy	33	1.873	0.444	2.201	583.5	26.7	8
5	Numeracy	34	2.073	0.458	2.375	594.0	27.5	8
5	Numeracy	35	2.287	0.476	2.561	605.1	28.6	8
5	Numeracy	36	2.519	0.498	2.762	617.2	29.9	8
5	Numeracy	37	2.774	0.527	2.984	630.5	31.6	8
5	Numeracy	38	3.062	0.566	3.234	645.6	34.0	8
5	Numeracy	39	3.400	0.623	3.527	663.2	37.4	8
5	Numeracy	40	3.822	0.714	3.894	685.2	42.9	8
5	Numeracy	41	4.417	0.892	4.410	716.2	53.6	8
5	Numeracy	42	5.598	1.495	5.436	777.8	89.8	8

I.P.15. Year 7 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
7	Numeracy	0	-5.718	1.525	-3.904	216.9	91.6	4
7	Numeracy	1	-4.493	0.909	-2.680	290.4	54.6	4
7	Numeracy	2	-3.870	0.723	-2.058	327.8	43.4	4
7	Numeracy	3	-3.433	0.625	-1.622	353.9	37.5	4
7	Numeracy	4	-3.091	0.562	-1.280	374.5	33.7	4
7	Numeracy	5	-2.807	0.517	-0.996	391.5	31.1	4
7	Numeracy	6	-2.561	0.484	-0.750	406.3	29.1	4
7	Numeracy	7	-2.343	0.458	-0.533	419.4	27.5	4
7	Numeracy	8	-2.146	0.437	-0.336	431.2	26.3	5
7	Numeracy	9	-1.965	0.420	-0.155	442.0	25.2	5
7	Numeracy	10	-1.797	0.406	0.012	452.1	24.4	5
7	Numeracy	11	-1.640	0.394	0.170	461.5	23.7	5
7	Numeracy	12	-1.491	0.384	0.318	470.5	23.0	5
7	Numeracy	13	-1.350	0.375	0.460	479.0	22.5	6
7	Numeracy	14	-1.214	0.368	0.595	487.1	22.1	6
7	Numeracy	15	-1.083	0.361	0.726	495.0	21.7	6
7	Numeracy	16	-0.956	0.356	0.853	502.6	21.4	6
7	Numeracy	17	-0.833	0.352	0.976	510.0	21.1	6
7	Numeracy	18	-0.712	0.348	1.096	517.2	20.9	6
7	Numeracy	19	-0.594	0.345	1.215	524.3	20.7	6
7	Numeracy	20	-0.477	0.343	1.331	531.3	20.6	7
7	Numeracy	21	-0.362	0.341	1.446	538.2	20.5	7
7	Numeracy	22	-0.248	0.340	1.561	545.1	20.4	7
7	Numeracy	23	-0.134	0.340	1.675	551.9	20.4	7
7	Numeracy	24	-0.020	0.340	1.788	558.7	20.4	7
7	Numeracy	25	0.095	0.341	1.903	565.6	20.5	7
7	Numeracy	26	0.210	0.342	2.017	572.5	20.5	7
7	Numeracy	27	0.326	0.344	2.133	579.4	20.6	7
7	Numeracy	28	0.443	0.346	2.251	586.5	20.8	8
7	Numeracy	29	0.562	0.349	2.370	593.7	21.0	8
7	Numeracy	30	0.684	0.353	2.491	600.9	21.2	8
7	Numeracy	31	0.808	0.357	2.615	608.4	21.4	8
7	Numeracy	32	0.936	0.362	2.743	616.1	21.7	8
7	Numeracy	33	1.067	0.368	2.874	623.9	22.1	8
7	Numeracy	34	1.203	0.374	3.010	632.1	22.5	8
7	Numeracy	35	1.344	0.382	3.151	640.6	22.9	9
7	Numeracy	36	1.491	0.390	3.298	649.4	23.4	9
7	Numeracy	37	1.646	0.401	3.452	658.7	24.1	9
7	Numeracy	38	1.809	0.413	3.615	668.4	24.8	9
7	Numeracy	39	1.983	0.427	3.789	678.9	25.6	9
7	Numeracy	40	2.169	0.443	3.975	690.0	26.6	9
7	Numeracy	41	2.371	0.464	4.176	702.2	27.8	9
7	Numeracy	42	2.593	0.489	4.399	715.5	29.4	9
7	Numeracy	43	2.843	0.521	4.648	730.4	31.3	9
7	Numeracy	44	3.129	0.564	4.934	747.7	33.9	9
7	Numeracy	45	3.472	0.625	5.276	768.2	37.5	9
7	Numeracy	46	3.906	0.722	5.710	794.2	43.3	9
7	Numeracy	47	4.522	0.906	6.326	831.2	54.4	9
7	Numeracy	48	5.738	1.519	7.540	904.1	91.2	9

I.P.16. Year 9 Numeracy Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Logit SE	Transformed Logit	NAPLAN Scale Score	Scale Score SE	Band
9	Numeracy	0	-5.759	1.498	-2.335	311.1	90.0	5
9	Numeracy	1	-4.569	0.888	-1.246	376.5	53.3	5
9	Numeracy	2	-3.975	0.705	-0.703	409.1	42.3	5
9	Numeracy	3	-3.563	0.609	-0.325	431.8	36.6	5
9	Numeracy	4	-3.239	0.549	-0.029	449.6	33.0	5
9	Numeracy	5	-2.969	0.507	0.218	464.4	30.5	5
9	Numeracy	6	-2.734	0.477	0.433	477.3	28.6	5
9	Numeracy	7	-2.524	0.453	0.625	488.9	27.2	6
9	Numeracy	8	-2.332	0.435	0.801	499.4	26.1	6
9	Numeracy	9	-2.154	0.420	0.964	509.2	25.2	6
9	Numeracy	10	-1.986	0.408	1.117	518.4	24.5	6
9	Numeracy	11	-1.827	0.398	1.263	527.2	23.9	6
9	Numeracy	12	-1.674	0.390	1.402	535.6	23.4	7
9	Numeracy	13	-1.527	0.384	1.537	543.6	23.1	7
9	Numeracy	14	-1.384	0.379	1.668	551.5	22.7	7
9	Numeracy	15	-1.244	0.375	1.796	559.2	22.5	7
9	Numeracy	16	-1.107	0.371	1.921	566.7	22.3	7
9	Numeracy	17	-0.972	0.369	2.045	574.1	22.1	7
9	Numeracy	18	-0.839	0.367	2.167	581.5	22.0	7
9	Numeracy	19	-0.706	0.365	2.288	588.7	21.9	8
9	Numeracy	20	-0.575	0.364	2.408	596.0	21.9	8
9	Numeracy	21	-0.443	0.364	2.529	603.2	21.9	8
9	Numeracy	22	-0.312	0.364	2.649	610.4	21.9	8
9	Numeracy	23	-0.180	0.364	2.769	617.6	21.9	8
9	Numeracy	24	-0.048	0.365	2.890	624.9	21.9	8
9	Numeracy	25	0.085	0.366	3.011	632.2	22.0	8
9	Numeracy	26	0.218	0.368	3.134	639.5	22.1	9
9	Numeracy	27	0.353	0.370	3.257	647.0	22.2	9
9	Numeracy	28	0.490	0.372	3.382	654.5	22.3	9
9	Numeracy	29	0.628	0.374	3.509	662.1	22.5	9
9	Numeracy	30	0.768	0.377	3.637	669.8	22.7	9
9	Numeracy	31	0.911	0.381	3.767	677.6	22.9	9
9	Numeracy	32	1.056	0.385	3.900	685.6	23.1	9
9	Numeracy	33	1.205	0.389	4.036	693.7	23.4	10
9	Numeracy	34	1.357	0.394	4.175	702.1	23.7	10
9	Numeracy	35	1.513	0.400	4.318	710.6	24.0	10
9	Numeracy	36	1.674	0.407	4.465	719.5	24.4	10
9	Numeracy	37	1.840	0.415	4.618	728.7	24.9	10
9	Numeracy	38	2.014	0.424	4.776	738.2	25.5	10
9	Numeracy	39	2.195	0.435	4.943	748.2	26.2	10
9	Numeracy	40	2.387	0.449	5.118	758.7	27.0	10
9	Numeracy	41	2.592	0.466	5.305	769.9	28.0	10
9	Numeracy	42	2.813	0.488	5.508	782.1	29.3	10
9	Numeracy	43	3.057	0.516	5.731	795.5	31.0	10
9	Numeracy	44	3.333	0.555	5.983	810.7	33.3	10
9	Numeracy	45	3.658	0.611	6.280	828.5	36.7	10
9	Numeracy	46	4.066	0.703	6.654	850.9	42.2	10
9	Numeracy	47	4.647	0.881	7.185	882.8	52.9	10
9	Numeracy	48	5.813	1.482	8.253	946.9	89.0	10

I.P.17. Year 3, 5, 7, and 9 Persuasive Writing Score Equivalence Table

Year	Domain	Raw Score	Delta-Centred Logit	Transformed Logit	Logit SE	NAPLAN Scale Score	Scale Score SE	Band
3579	Writing	0	-12.539	1.763	-12.540	94.5	52.3	1
3579	Writing	1	-10.960	1.078	-10.960	141.4	32.0	1
3579	Writing	2	-10.075	0.869	-10.070	167.9	25.8	1
3579	Writing	3	-9.450	0.770	-9.450	186.3	22.9	1
3579	Writing	4	-8.933	0.719	-8.933	201.6	21.3	1
3579	Writing	5	-8.463	0.694	-8.463	215.6	20.6	1
3579	Writing	6	-8.008	0.684	-8.008	229.1	20.3	1
3579	Writing	7	-7.551	0.685	-7.551	242.7	20.3	1
3579	Writing	8	-7.083	0.690	-7.083	256.6	20.5	1
3579	Writing	9	-6.600	0.695	-6.600	270.9	20.6	2
3579	Writing	10	-6.110	0.698	-6.110	285.4	20.7	2
3579	Writing	11	-5.622	0.698	-5.622	299.9	20.7	2
3579	Writing	12	-5.136	0.699	-5.136	314.4	20.8	2
3579	Writing	13	-4.647	0.702	-4.647	328.9	20.8	3
3579	Writing	14	-4.151	0.705	-4.151	343.6	20.9	3
3579	Writing	15	-3.649	0.705	-3.649	358.5	20.9	3
3579	Writing	16	-3.146	0.700	-3.146	373.5	20.8	3
3579	Writing	17	-2.655	0.690	-2.655	388.0	20.5	4
3579	Writing	18	-2.185	0.678	-2.185	402.0	20.1	4
3579	Writing	19	-1.735	0.666	-1.735	415.3	19.8	4
3579	Writing	20	-1.300	0.657	-1.300	428.3	19.5	5
3579	Writing	21	-0.875	0.650	-0.875	440.9	19.3	5
3579	Writing	22	-0.457	0.643	-0.457	453.3	19.1	5
3579	Writing	23	-0.047	0.637	-0.047	465.5	18.9	5
3579	Writing	24	0.354	0.631	0.354	477.4	18.7	5
3579	Writing	25	0.747	0.626	0.747	489.0	18.6	6
3579	Writing	26	1.134	0.622	1.134	500.5	18.5	6
3579	Writing	27	1.516	0.620	1.516	511.9	18.4	6
3579	Writing	28	1.897	0.621	1.897	523.2	18.4	6
3579	Writing	29	2.280	0.624	2.280	534.6	18.5	7
3579	Writing	30	2.671	0.629	2.671	546.2	18.7	7
3579	Writing	31	3.071	0.634	3.071	558.0	18.8	7
3579	Writing	32	3.482	0.637	3.482	570.3	18.9	7
3579	Writing	33	3.894	0.636	3.894	582.5	18.9	8
3579	Writing	34	4.300	0.631	4.300	594.5	18.7	8
3579	Writing	35	4.694	0.625	4.694	606.2	18.6	8
3579	Writing	36	5.078	0.621	5.078	617.6	18.4	8
3579	Writing	37	5.456	0.620	5.456	628.9	18.4	8
3579	Writing	38	5.835	0.623	5.835	640.1	18.5	9
3579	Writing	39	6.222	0.631	6.222	651.6	18.7	9
3579	Writing	40	6.623	0.641	6.623	663.5	19.0	9
3579	Writing	41	7.042	0.653	7.042	676.0	19.4	9
3579	Writing	42	7.475	0.665	7.475	688.8	19.7	10
3579	Writing	43	7.920	0.680	7.920	702.0	20.2	10
3579	Writing	44	8.381	0.702	8.381	715.7	20.9	10
3579	Writing	45	8.874	0.743	8.874	730.4	22.1	10
3579	Writing	46	9.436	0.820	9.436	747.0	24.3	10
3579	Writing	47	10.159	0.988	10.159	768.5	29.3	10
3579	Writing	48	11.461	1.599	11.461	807.2	47.5	10

APPENDIX J.P. VERTICAL LINK ITEMS STATISTICS (PAPER TEST[9])

J.P.1. Reading – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
27	x00083501	55	x00083501	-1.630	-1.282	-2.123	0.027	0.043	-0.348	-6.851	46.935	0.000	N
28	x00083503	56	x00083503	-0.447	-0.160	-1.001	0.025	0.039	-0.287	-6.188	38.289	0.000	N
29	x00083502	57	x00083502	-1.086	-0.581	-1.422	0.025	0.039	-0.505	-10.903	118.879	0.000	N
30	x00083507	58	x00083507	-0.460	-0.132	-0.973	0.025	0.039	-0.328	-7.083	50.172	0.000	N
31	x00083509	59	x00083509	-1.048	-0.758	-1.599	0.025	0.040	-0.290	-6.143	37.732	0.000	N
32	x00083510	60	x00083510	-0.990	-0.830	-1.671	0.025	0.040	-0.159	-3.379	11.416	0.001	Y
33	x00083511	61	x00083511	-1.374	-0.961	-1.802	0.026	0.041	-0.412	-8.497	72.192	0.000	N
34	x00095784	62	x00095784	0.122	0.119	-0.722	0.026	0.040	0.003	0.069	0.005	0.945	Y
35	x00095776	63	x00095776	0.609	0.812	-0.029	0.028	0.044	-0.203	-3.884	15.083	0.000	Y
36	x00095769	64	x00095769	-0.691	-0.615	-1.456	0.025	0.040	-0.076	-1.615	2.608	0.106	Y
37	x00095785	65	x00095785	-1.302	-0.834	-1.674	0.026	0.040	-0.468	-9.820	96.425	0.000	N
79	x00073762	21	x00073762	0.493	-0.097	-0.938	0.039	0.029	0.591	12.153	147.696	0.000	N
80	x00073742	22	x00073742	0.726	0.626	-0.215	0.039	0.027	0.100	2.115	4.474	0.034	Y
81	x00073738	23	x00073738	-1.038	-0.999	-1.840	0.050	0.036	-0.039	-0.632	0.400	0.527	Y
82	x00073743	24	x00073743	0.298	0.165	-0.676	0.040	0.028	0.133	2.727	7.435	0.006	Y
84	x00073799	26	x00073799	0.581	0.571	-0.269	0.039	0.027	0.009	0.195	0.038	0.845	Y
85	x00073750	25	x00073750	-0.656	-0.846	-1.686	0.046	0.034	0.189	3.308	10.944	0.001	Y
86	x00088286	46	x00088286	0.688	0.427	-0.414	0.039	0.050	0.262	4.127	17.034	0.000	Y
87	x00092888	47	x00092888	1.080	1.365	0.524	0.040	0.057	-0.285	-4.097	16.788	0.000	Y
88	x00088281	48	x00088281	0.045	0.200	-0.641	0.041	0.049	-0.155	-2.422	5.867	0.015	Y
89	x00088282	49	x00088282	0.861	0.806	-0.035	0.040	0.052	0.055	0.838	0.702	0.402	Y
90	x00088275	50	x00088275	1.629	1.633	0.792	0.043	0.061	-0.004	-0.051	0.003	0.960	Y
92	x00088578	2	x00088578	-0.419	-0.857	-1.698	0.023	0.025	0.438	12.891	166.183	0.000	N
93	x00088580	3	x00088580	1.090	1.063	0.222	0.025	0.019	0.027	0.859	0.738	0.390	Y
94	x00088582	4	x00088582	1.576	1.359	0.519	0.027	0.019	0.216	6.554	42.959	0.000	N
95	x00088583	5	x00088583	0.879	0.733	-0.108	0.024	0.019	0.146	4.766	22.715	0.000	Y
96	x00088585	6	x00088585	1.297	0.809	-0.031	0.026	0.019	0.487	15.131	228.933	0.000	N
97	x00088584	7	x00088584	0.803	1.682	0.841	0.024	0.019	-0.878	-28.696	823.444	0.000	N
98	x00093063	33	x00093063	0.647	0.583	-0.257	0.023	0.035	0.064	1.532	2.346	0.126	Y
99	x00093066	34	x00093066	0.277	0.209	-0.631	0.023	0.034	0.068	1.646	2.708	0.100	Y

[9] Vertical shift applied for Paper Tests are based on items from both of the paper and online test.

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
100	x00093067	35	x00093067	0.999	0.987	0.146	0.024	0.037	0.012	0.262	0.069	0.793	Y
101	x00093070	36	x00093070	1.505	1.314	0.473	0.027	0.039	0.191	4.030	16.243	0.000	Y
102	x00093071	37	x00093071	-0.430	-0.531	-1.372	0.024	0.036	0.101	2.332	5.436	0.020	Y
103	x00093065	38	x00093065	1.567	1.250	0.409	0.028	0.038	0.317	6.726	45.237	0.000	N
104	x00093072	39	x00093072	0.060	0.022	-0.819	0.023	0.034	0.039	0.939	0.882	0.348	Y
118	x00088059	99	x00088059	2.852	2.569	1.728	0.053	0.030	0.284	4.659	21.702	0.000	Y
119	x00092884	100	x00092884	2.980	2.540	1.699	0.055	0.030	0.440	7.027	49.377	0.000	N
120	x00088062	101	x00088062	1.429	1.320	0.479	0.046	0.024	0.109	2.096	4.395	0.036	Y
121	x00092885	102	x00092885	1.540	1.375	0.534	0.046	0.024	0.165	3.187	10.160	0.001	Y
122	x00088048	103	x00088048	0.858	0.867	0.026	0.048	0.024	-0.009	-0.162	0.026	0.871	Y

	Reading - Before Review			Reading - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.398	0.398	-0.443	0.576	0.576	-0.304
Std. Deviation	1.106	0.982	0.982	0.893	0.852	0.852
Equating Shift		0.841			0.880	

J.P.2. Reading – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
8	x00072763	5	x00072763	-1.457	-1.437	-2.404	0.023	0.028	-0.020	-0.550	0.303	0.582	Y
10	x00072750	6	x00072750	0.535	0.478	-0.488	0.019	0.019	0.057	2.117	4.483	0.034	Y
11	x00098703	7	x00098703	0.277	0.167	-0.799	0.019	0.019	0.109	4.068	16.550	0.000	Y
14	x00072759	17	x00072759	-0.093	0.101	-0.866	0.026	0.028	-0.194	-5.068	25.685	0.000	Y
15	x00072768	18	x00072768	-0.027	0.098	-0.869	0.026	0.028	-0.125	-3.264	10.656	0.001	Y
16	x00072771	19	x00072771	0.850	0.695	-0.272	0.027	0.026	0.155	4.126	17.023	0.000	Y
17	x00072775	20	x00072775	-0.986	-1.066	-2.033	0.029	0.035	0.080	1.764	3.112	0.078	Y
18	x00072779	22	x00072779	-0.882	-0.754	-1.720	0.029	0.032	-0.128	-2.958	8.749	0.003	Y
19	x00072782	23	x00072782	-1.029	-1.204	-2.171	0.030	0.037	0.175	3.681	13.550	0.000	Y
66	x00093013	9	x00093013	0.727	1.056	0.090	0.021	0.018	-0.329	-11.889	141.353	0.000	N
67	x00093014	10	x00093014	2.107	1.560	0.594	0.026	0.019	0.547	16.972	288.060	0.000	N
68	x00093020	11	x00093020	1.014	0.863	-0.104	0.022	0.018	0.152	5.334	28.448	0.000	Y
69	x00093021	12	x00093021	0.969	1.085	0.118	0.022	0.019	-0.116	-3.983	15.861	0.000	Y
70	x00093022	13	x00093022	1.599	1.489	0.522	0.023	0.019	0.110	3.699	13.682	0.000	Y
71	x00093019	14	x00093019	1.998	1.736	0.770	0.026	0.020	0.262	7.993	63.889	0.000	N
72	x00093018	15	x00093018	2.033	2.019	1.052	0.026	0.020	0.014	0.438	0.192	0.661	Y
73	x00093015	16	x00093015	2.222	2.213	1.246	0.027	0.021	0.009	0.263	0.069	0.793	Y
92	x00074098	42	x00074098	-0.651	-0.655	-1.621	0.025	0.030	0.004	0.104	0.011	0.917	Y
93	x00074099	43	x00074099	-0.538	-0.462	-1.429	0.025	0.029	-0.076	-1.976	3.903	0.048	Y
94	x00074094	44	x00074094	-0.705	-0.485	-1.451	0.025	0.029	-0.220	-5.740	32.946	0.000	Y
95	x00074095	45	x00074095	0.759	0.959	-0.007	0.025	0.028	-0.200	-5.323	28.335	0.000	Y
96	x00074102	46	x00074102	0.704	0.776	-0.190	0.024	0.028	-0.072	-1.960	3.842	0.050	Y
97	x00074101	47	x00074101	0.855	0.810	-0.156	0.025	0.028	0.044	1.179	1.391	0.238	Y
98	x00074100	48	x00074100	0.627	0.553	-0.414	0.024	0.027	0.074	2.044	4.178	0.041	Y
105	x00099102	28	x00099102	0.027	-0.027	-0.993	0.033	0.028	0.054	1.252	1.568	0.211	Y
107	x00060757	29	x00060757	1.774	1.979	1.013	0.042	0.029	-0.206	-4.029	16.232	0.000	Y
108	x00099103	30	x00099103	0.363	0.799	-0.167	0.033	0.026	-0.437	-10.391	107.979	0.000	N
110	x00051807	32	x00051807	0.769	0.638	-0.329	0.034	0.026	0.132	3.076	9.461	0.002	Y
111	x00099099	31	x00099099	0.384	0.242	-0.724	0.033	0.027	0.142	3.328	11.073	0.001	Y

	Reading - Before Review			Reading - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.491	0.491	-0.476	0.361	0.361	-0.604
Std. Deviation	1.018	0.983	0.983	0.993	0.990	0.990
Equating Shift		0.966			0.965	

J.P.3. Reading – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 9 Label	Year 7 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
53	x00093943	17	x00093943	-0.919	-1.400	-1.766	0.039	0.036	0.481	9.063	82.141	0.000	N
56	x00093955	19	x00093955	-0.578	-1.303	-1.669	0.039	0.035	0.724	13.819	190.956	0.000	N
57	x00093960	20	x00093960	0.548	0.551	0.185	0.044	0.027	-0.003	-0.058	0.003	0.954	Y
58	x00074403	55	x00074403	-1.439	-1.368	-1.734	0.041	0.051	-0.071	-1.079	1.164	0.281	Y
59	x00074402	56	x00074402	-0.288	-0.154	-0.520	0.039	0.046	-0.135	-2.230	4.975	0.026	Y
61	x00074412	57	x00074412	-0.517	-0.453	-0.819	0.039	0.046	-0.064	-1.065	1.134	0.287	Y
62	x00074413	58	x00074413	-0.561	-0.639	-1.005	0.039	0.047	0.078	1.285	1.651	0.199	Y
63	x00074406	59	x00074406	0.084	0.125	-0.241	0.041	0.047	-0.041	-0.655	0.429	0.512	Y
96	x00094665	96	x00094665	2.723	2.560	2.194	0.038	0.029	0.163	3.401	11.569	0.001	Y
113	x00093483	113	x00093483	-1.606	-1.324	-1.690	0.026	0.032	-0.282	-6.839	46.765	0.000	N
114	x00093485	114	x00093485	0.647	0.990	0.624	0.023	0.025	-0.343	-10.091	101.829	0.000	N
115	x00093484	115	x00093484	0.364	0.405	0.039	0.022	0.024	-0.041	-1.258	1.582	0.208	Y
116	x00093490	116	x00093490	-0.861	-0.446	-0.812	0.022	0.026	-0.415	-12.183	148.433	0.000	N
117	x00093489	117	x00093489	0.178	0.306	-0.060	0.021	0.024	-0.128	-4.016	16.130	0.000	Y
118	x00093482	118	x00093482	2.113	2.105	1.739	0.033	0.032	0.008	0.182	0.033	0.855	Y
119	x00088251	119	x00088251	1.737	1.690	1.324	0.029	0.028	0.047	1.161	1.348	0.246	Y
120	x00088250	120	x00088250	1.000	1.109	0.743	0.024	0.025	-0.109	-3.149	9.918	0.002	Y
121	x00088237	121	x00088237	-0.711	-0.624	-0.990	0.022	0.027	-0.087	-2.499	6.244	0.012	Y
122	x00088242	122	x00088242	1.176	1.459	1.093	0.025	0.027	-0.283	-7.700	59.287	0.000	N
123	x00088246	123	x00088246	2.678	3.166	2.800	0.042	0.047	-0.487	-7.728	59.715	0.000	N
124	x00088240	124	x00088240	1.757	1.706	1.340	0.030	0.029	0.051	1.219	1.486	0.223	Y
125	x00094499	125	x00094499	0.472	1.030	0.664	0.022	0.025	-0.558	-16.765	281.052	0.000	N
126	x00094503	126	x00094503	1.191	1.234	0.868	0.025	0.026	-0.043	-1.191	1.418	0.234	Y
127	x00094504	127	x00094504	0.133	0.590	0.224	0.021	0.024	-0.457	-14.330	205.348	0.000	N
128	x00094507	128	x00094507	0.792	0.994	0.628	0.023	0.025	-0.202	-5.955	35.463	0.000	Y
129	x00076037	21	x00076037	-0.477	-0.689	-1.055	0.031	0.030	0.212	4.909	24.096	0.000	Y
130	x00076034	22	x00076034	-0.881	-1.050	-1.416	0.032	0.033	0.169	3.667	13.447	0.000	Y
131	x00076159	23	x00076159	-1.061	-1.515	-1.881	0.033	0.037	0.454	9.159	83.896	0.000	N
132	x00076035	24	x00076035	-0.441	-0.468	-0.834	0.030	0.029	0.027	0.638	0.406	0.524	Y
133	x00076036	25	x00076036	-1.657	-1.960	-2.326	0.038	0.042	0.303	5.352	28.640	0.000	Y
134	x00076156	26	x00076156	0.271	0.001	-0.365	0.031	0.028	0.270	6.456	41.681	0.000	N
157	x00092703	149	x00092703	2.353	1.931	1.565	0.041	0.029	0.422	8.393	70.449	0.000	N
158	x00092702	150	x00092702	3.218	3.224	2.858	0.054	0.038	-0.005	-0.082	0.007	0.935	Y
159	x00092704	151	x00092704	1.954	1.911	1.545	0.038	0.029	0.042	0.889	0.790	0.374	Y

Year 7 Item No.	Year 9 Label	Year 7 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
160	x00092696	152	x00092696	4.371	4.066	3.700	0.086	0.051	0.304	3.044	9.263	0.002	Y

	Reading - Before Review			Reading - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.507	0.507	0.142	0.655	0.655	0.268
Std. Deviation	1.469	1.508	1.508	1.539	1.522	1.522
Equating Shift		0.366			0.387	

J.P.4. Spelling – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
7	x00091041	4	x00091041	0.405	0.535	-1.194	0.037	0.041	-0.130	-2.358	5.562	0.018	Y
8	x00070480	6	x00070480	1.351	1.278	-0.451	0.047	0.043	0.073	1.144	1.308	0.253	Y
9	x00091103	8	x00091103	2.277	2.440	0.711	0.064	0.055	-0.162	-1.923	3.698	0.054	Y
11	x00076738	11	x00076738	-3.302	-3.361	-5.091	0.041	0.079	0.059	0.667	0.445	0.505	Y
18	x00091025	16	x00091025	1.051	1.554	-0.175	0.044	0.045	-0.504	-8.004	64.058	0.000	N
19	x00091080	17	x00091080	2.346	2.160	0.431	0.068	0.051	0.186	2.185	4.773	0.029	Y
22	x00090964	21	x00090964	0.888	1.226	-0.503	0.037	0.036	-0.338	-6.544	42.828	0.000	N
23	x00091081	22	x00091081	1.925	1.730	0.001	0.035	0.032	0.195	4.117	16.949	0.000	Y
25	x00046148	24	x00046148	2.792	3.094	1.365	0.037	0.028	-0.302	-6.509	42.365	0.000	N
28	x00046140	29	x00046140	0.397	0.551	-1.179	0.040	0.043	-0.154	-2.622	6.877	0.009	Y
29	x00046157	31	x00046157	1.330	1.675	-0.054	0.035	0.032	-0.345	-7.278	52.973	0.000	N
31	x00023797	32	x00023797	2.322	2.288	0.559	0.035	0.030	0.033	0.719	0.517	0.472	Y
38	x00085976	37	x00085976	-0.460	-0.229	-1.959	0.033	0.040	-0.230	-4.442	19.733	0.000	Y
39	x00086004	38	x00086004	-0.015	0.354	-1.375	0.033	0.037	-0.369	-7.450	55.498	0.000	N
44	x00016990	44	x00016990	-0.059	-0.181	-1.910	0.033	0.040	0.122	2.345	5.498	0.019	Y
51	x00085999	50	x00085999	0.112	-0.311	-2.041	0.033	0.041	0.424	8.049	64.787	0.000	N
52	x00085939	52	x00085939	0.876	0.935	-0.794	0.033	0.034	-0.059	-1.238	1.534	0.216	Y
59	x00018474	56	x00018474	-1.468	-1.434	-3.163	0.038	0.048	-0.034	-0.553	0.306	0.580	Y
60	x00085920	57	x00085920	-0.966	-1.087	-2.816	0.027	0.031	0.121	2.946	8.677	0.003	Y
61	x00018484	59	x00018484	-1.278	-0.697	-2.427	0.038	0.042	-0.581	-10.250	105.066	0.000	N
68	x00016924	66	x00016924	-0.174	-0.845	-2.574	0.042	0.043	0.671	11.161	124.564	0.000	N
69	x00008447	68	x00008447	-0.493	-0.630	-2.359	0.040	0.041	0.137	2.395	5.738	0.017	Y
75	x00016974	72	x00016974	2.104	1.764	0.034	0.032	0.034	0.341	7.301	53.302	0.000	N
77	x00085990	76	x00085990	3.552	3.152	1.422	0.040	0.029	0.401	8.107	65.717	0.000	N
79	x00070148	49	x00070148	-0.338	-0.382	-2.111	0.036	0.042	0.045	0.808	0.654	0.419	Y
85	x00018416	81	x00018416	2.063	1.815	0.086	0.033	0.034	0.249	5.248	27.542	0.000	N
86	x00086002	83	x00086002	2.789	2.385	0.655	0.035	0.031	0.404	8.652	74.849	0.000	N
87	x00085972	84	x00085972	2.940	2.850	1.121	0.036	0.030	0.091	1.932	3.734	0.053	Y
46	x00070379	45	x00070379	0.217	0.559	-1.170	0.033	0.036	-0.342	-7.013	49.183	0.000	N

	Spelling - Before Review			Spelling - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.799	0.799	-0.930	0.485	0.485	-1.263
Std. Deviation	1.577	1.544	1.544	1.676	1.668	1.668
Equating Shift		1.729			1.747	

J.P.5. Spelling – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
2	x00090999	1	x00090999	-2.249	-2.144	-3.470	0.042	0.059	-0.105	-1.454	2.113	0.146	Y
3	x00091085	2	x00091085	-1.411	-1.557	-2.883	0.040	0.052	0.145	2.217	4.914	0.027	Y
7	x00046188	5	x00046188	0.325	0.369	-0.957	0.050	0.047	-0.044	-0.647	0.419	0.518	Y
12	x00011202	11	x00011202	-2.086	-1.679	-3.005	0.042	0.053	-0.407	-6.019	36.225	0.000	N
15	x00091086	16	x00091086	-0.125	0.574	-0.752	0.045	0.048	-0.699	-10.626	112.922	0.000	N
18	x00012230	13	x00012230	0.896	0.410	-0.916	0.059	0.047	0.486	6.444	41.528	0.000	N
23	x00046208	21	x00046208	1.257	1.011	-0.316	0.028	0.030	0.246	6.000	36.003	0.000	N
25	x00070468	22	x00070468	1.784	1.801	0.474	0.029	0.027	-0.017	-0.427	0.182	0.670	Y
26	x00091108	24	x00091108	2.274	2.483	1.156	0.029	0.027	-0.209	-5.274	27.817	0.000	Y
30	x00046180	29	x00046180	0.052	0.052	-1.274	0.032	0.038	-0.001	-0.018	0.000	0.985	Y
33	x00091005	31	x00091005	2.105	1.663	0.337	0.029	0.028	0.442	10.964	120.213	0.000	N
34	x00046177	32	x00046177	2.101	1.904	0.578	0.029	0.027	0.197	4.984	24.837	0.000	Y
40	x00086032	37	x00086032	0.142	0.344	-0.982	0.032	0.035	-0.202	-4.254	18.095	0.000	Y
41	x00018446	38	x00018446	0.079	0.304	-1.022	0.032	0.035	-0.225	-4.734	22.410	0.000	Y
42	x00086052	69	x00086052	0.853	1.036	-0.290	0.032	0.039	-0.183	-3.625	13.137	0.000	Y
43	x00018478	43	x00018478	-2.056	-2.060	-3.387	0.042	0.059	0.004	0.055	0.003	0.956	Y
47	x00008068	44	x00008068	0.509	0.629	-0.697	0.032	0.033	-0.121	-2.622	6.873	0.009	Y
48	x00086028	39	x00086028	1.491	0.910	-0.416	0.032	0.032	0.581	12.844	164.961	0.000	N
51	x00008483	50	x00008483	-1.176	-0.887	-2.214	0.036	0.043	-0.289	-5.151	26.533	0.000	Y
54	x00086039	53	x00086039	1.126	1.124	-0.202	0.032	0.032	0.002	0.047	0.002	0.962	Y
60	x00017000	55	x00017000	-2.167	-1.844	-3.170	0.041	0.050	-0.323	-4.991	24.911	0.000	Y
61	x00086015	57	x00086015	-0.482	-0.769	-2.096	0.039	0.041	0.287	5.071	25.713	0.000	Y
62	x00086038	63	x00086038	-0.765	-0.689	-2.015	0.038	0.041	-0.077	-1.376	1.894	0.169	Y
63	x00016970	60	x00016970	-0.784	-0.650	-1.977	0.038	0.040	-0.133	-2.416	5.838	0.016	Y
67	x00008076	65	x00008076	-2.062	-1.620	-2.947	0.040	0.048	-0.442	-7.068	49.961	0.000	N
70	x00086025	66	x00086025	-0.827	-1.076	-2.402	0.039	0.043	0.249	4.284	18.351	0.000	Y
71	x00086023	67	x00086023	-1.071	-1.065	-2.391	0.038	0.043	-0.006	-0.109	0.012	0.913	Y
78	x00086050	71	x00086050	2.505	2.417	1.091	0.022	0.021	0.088	2.909	8.460	0.004	Y
80	x00085992	75	x00085992	3.689	3.220	1.894	0.037	0.029	0.469	9.986	99.729	0.000	N
82	x00086024	79	x00086024	0.932	0.542	-0.784	0.030	0.040	0.390	7.794	60.743	0.000	N
88	x00086046	86	x00086046	4.503	4.609	3.283	0.044	0.036	-0.106	-1.862	3.467	0.063	Y

	Spelling - Before Review			Spelling - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.302	0.302	-1.024	0.148	0.148	-1.129
Std. Deviation	1.748	1.641	1.641	1.716	1.712	1.712
Equating Shift		1.326			1.278	

J.P.6. Spelling – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
7	x00070408	6	x00070408	1.111	1.484	0.600	0.076	0.050	-0.373	-4.103	16.836	0.000	Y
8	x00091007	7	x00091007	1.543	1.567	0.683	0.090	0.051	-0.024	-0.235	0.055	0.814	Y
10	x00069590	9	x00069590	2.783	3.433	2.549	0.154	0.098	-0.650	-3.559	12.666	0.000	N
15	x00070485	13	x00070485	-0.175	-0.568	-1.453	0.053	0.043	0.393	5.766	33.241	0.000	Y
17	x00023806	15	x00023806	1.316	1.452	0.568	0.083	0.051	-0.136	-1.400	1.959	0.162	Y
18	x00091033	16	x00091033	2.131	1.719	0.834	0.116	0.055	0.413	3.216	10.340	0.001	Y
23	x00046235	22	x00046235	0.535	0.711	-0.174	0.027	0.033	-0.176	-4.132	17.070	0.000	Y
26	x00011206	23	x00011206	1.658	1.341	0.457	0.027	0.030	0.317	7.854	61.682	0.000	N
27	x00091011	25	x00091011	2.518	2.685	1.801	0.030	0.028	-0.167	-4.076	16.612	0.000	Y
30	x00091010	29	x00091010	-0.745	-0.711	-1.595	0.033	0.050	-0.034	-0.573	0.329	0.566	Y
33	x00091006	31	x00091006	1.188	1.225	0.341	0.027	0.030	-0.037	-0.926	0.858	0.354	Y
35	x00091112	32	x00091112	2.264	1.877	0.993	0.029	0.029	0.387	9.425	88.838	0.000	N
40	x00086062	39	x00086062	-0.304	0.116	-0.768	0.032	0.035	-0.421	-8.871	78.695	0.000	N
41	x00008072	40	x00008072	-0.095	0.199	-0.686	0.031	0.035	-0.293	-6.267	39.279	0.000	N
46	x00018514	44	x00018514	0.363	0.081	-0.803	0.031	0.035	0.282	6.027	36.323	0.000	N
47	x00008102	38	x00008102	0.253	-0.437	-1.322	0.031	0.038	0.690	14.064	197.788	0.000	N
48	x00017042	46	x00017042	0.545	0.347	-0.538	0.031	0.034	0.198	4.305	18.537	0.000	Y
49	x00008511	49	x00008511	-2.544	-2.162	-3.046	0.046	0.059	-0.383	-5.114	26.150	0.000	Y
54	x00086021	52	x00086021	0.460	0.445	-0.439	0.031	0.033	0.015	0.321	0.103	0.749	Y
59	x00069749	57	x00069749	-1.375	-1.027	-1.912	0.027	0.040	-0.348	-7.207	51.943	0.000	N
61	x00086029	58	x00086029	-1.305	-1.194	-2.079	0.027	0.040	-0.110	-2.289	5.238	0.022	Y
62	x00086055	59	x00086055	-1.344	-0.969	-1.853	0.027	0.040	-0.376	-7.784	60.594	0.000	N
72	x00086071	71	x00086071	0.836	1.225	0.340	0.030	0.027	-0.388	-9.621	92.570	0.000	N
76	x00008088	73	x00008088	1.975	1.834	0.949	0.029	0.027	0.141	3.555	12.637	0.000	Y
77	x00086040	74	x00086040	1.956	1.524	0.640	0.029	0.027	0.431	10.884	118.470	0.000	N
82	x00086084	81	x00086084	2.245	1.913	1.028	0.030	0.027	0.332	8.225	67.645	0.000	N
83	x00086060	83	x00086060	1.788	1.313	0.429	0.029	0.027	0.474	11.968	143.236	0.000	N
85	x00086057	84	x00086057	2.518	2.673	1.788	0.031	0.027	-0.155	-3.770	14.213	0.000	Y

	Spelling - Before Review			Spelling - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.789	0.789	-0.095	0.738	0.738	-0.117

Std. Deviation	1.393	1.331	1.331	1.446	1.411	1.411
Equating Shift		0.884			0.855	

J.P.7. Grammar and Punctuation – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
3	x00023613	2	x00023613	-2.432	-2.920	-3.539	0.034	0.059	0.489	7.178	51.528	0.000	N
4	x00023567	3	x00023567	-2.434	-2.758	-3.377	0.034	0.056	0.324	4.952	24.524	0.000	Y
7	x00023566	6	x00023566	-2.058	-2.515	-3.133	0.033	0.052	0.457	7.413	54.956	0.000	N
12	x00090568	8	x00090568	-1.026	-1.114	-1.732	0.032	0.041	0.087	1.675	2.805	0.094	Y
17	x00090223	12	x00090223	-1.641	-1.912	-2.531	0.045	0.065	0.271	3.423	11.715	0.001	Y
36	x00090193	31	x00090193	0.008	0.542	-0.077	0.022	0.019	-0.535	-18.392	338.258	0.000	N
37	x00093357	32	x00093357	-0.191	-0.161	-0.780	0.023	0.026	-0.030	-0.863	0.745	0.388	Y
39	x00090180	34	x00090180	-0.300	-0.255	-0.874	0.023	0.026	-0.045	-1.285	1.651	0.199	Y
40	x00090578	36	x00090578	0.074	0.510	-0.108	0.022	0.024	-0.436	-13.396	179.450	0.000	N
41	x00074774	37	x00074774	-1.013	-0.334	-0.953	0.025	0.027	-0.679	-18.455	340.602	0.000	N
50	x00098858	42	x00098858	0.597	0.513	-0.106	0.018	0.024	0.085	2.820	7.955	0.005	Y
55	x00093353	35	x00093353	-0.222	-0.336	-0.955	0.032	0.027	0.114	2.729	7.445	0.006	Y
59	x00090219	52	x00090219	-0.325	-0.899	-1.518	0.032	0.043	0.573	10.699	114.469	0.000	N
65	x00093366	54	x00093366	0.948	0.705	0.086	0.034	0.034	0.244	5.071	25.720	0.000	N
66	x00090173	55	x00090173	0.734	0.574	-0.045	0.033	0.034	0.160	3.376	11.396	0.001	Y
67	x00074677	60	x00074677	1.549	2.292	1.673	0.038	0.040	-0.744	-13.478	181.644	0.000	N
71	x00074695	56	x00074695	1.086	1.269	0.650	0.066	0.022	-0.183	-2.624	6.884	0.009	Y
72	x00090588	44	x00090588	1.271	1.224	0.605	0.047	0.016	0.047	0.951	0.904	0.342	Y
74	x00090542	62	x00090542	1.595	1.714	1.095	0.066	0.040	-0.119	-1.538	2.366	0.124	Y
79	x00074691	63	x00074691	1.232	1.539	0.921	0.065	0.040	-0.307	-4.023	16.183	0.000	Y
81	x00074668	58	x00074668	1.947	1.590	0.972	0.049	0.026	0.357	6.431	41.362	0.000	N
82	x00098871	64	x00098871	1.464	1.556	0.937	0.066	0.040	-0.091	-1.181	1.394	0.238	Y
85	x00009887	68	x00009887	2.522	2.733	2.114	0.054	0.030	-0.210	-3.401	11.565	0.001	Y
89	x00090275	80	x00090275	2.257	2.466	1.847	0.072	0.041	-0.209	-2.525	6.378	0.012	Y
90	x00093365	83	x00093365	2.847	2.638	2.019	0.083	0.042	0.210	2.254	5.082	0.024	Y
91	x00074794	75	x00074794	4.066	3.897	3.278	0.125	0.040	0.169	1.291	1.667	0.197	Y

	Grammar and Punctuation - Before Review			Grammar and Punctuation - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.483	0.483	-0.136	0.815	0.815	0.180
Std. Deviation	1.651	1.770	1.770	1.669	1.749	1.749
Equating Shift		0.619			0.635	

J.P.8. Grammar and Punctuation – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
5	x00023602	2	x00023602	-2.423	-1.979	-3.010	0.045	0.056	-0.443	-6.173	38.101	0.000	N
10	x00075674	8	x00075674	-2.151	-1.486	-2.516	0.043	0.050	-0.665	-10.079	101.593	0.000	N
20	x00090863	9	x00090863	-0.857	-0.875	-1.905	0.042	0.064	0.018	0.230	0.053	0.818	Y
21	x00009980	21	x00009980	-1.710	-1.336	-2.366	0.041	0.048	-0.374	-5.932	35.193	0.000	N
30	x00075681	27	x00075681	-0.417	-0.102	-1.132	0.063	0.061	-0.316	-3.598	12.946	0.000	Y
33	x00075720	32	x00075720	-0.352	-0.478	-1.509	0.024	0.027	0.126	3.497	12.231	0.000	Y
39	x00090991	33	x00090991	-0.032	-0.332	-1.363	0.019	0.022	0.301	10.349	107.106	0.000	N
40	x00075653	34	x00075653	-1.054	-0.965	-1.995	0.027	0.032	-0.090	-2.140	4.580	0.032	Y
41	x00090852	25	x00090852	-0.427	-0.049	-1.079	0.025	0.062	-0.379	-5.663	32.069	0.000	N
43	x00075649	37	x00075649	0.223	-0.060	-1.090	0.024	0.025	0.283	8.155	66.506	0.000	N
49	x00075728	47	x00075728	1.603	1.678	0.648	0.023	0.021	-0.075	-2.422	5.864	0.015	Y
57	x00093413	56	x00093413	1.237	0.998	-0.032	0.037	0.031	0.239	4.947	24.474	0.000	Y
59	x00075691	57	x00075691	1.285	1.258	0.228	0.027	0.031	0.027	0.657	0.431	0.511	Y
61	x00093414	39	x00093414	0.850	1.041	0.011	0.041	0.022	-0.191	-4.109	16.888	0.000	Y
65	x00077610	64	x00077610	1.723	1.321	0.291	0.029	0.037	0.401	8.538	72.895	0.000	N
69	x00090856	68	x00090856	2.658	2.607	1.576	0.048	0.055	0.052	0.709	0.503	0.478	Y
72	x00091120	72	x00091120	2.856	2.592	1.562	0.050	0.039	0.264	4.159	17.300	0.000	Y
73	x00093266	85	x00093266	2.866	2.817	1.787	0.035	0.057	0.049	0.731	0.534	0.465	Y
74	x00098853	74	x00098853	3.330	3.037	2.007	0.041	0.059	0.293	4.084	16.677	0.000	Y
76	x00093423	73	x00093423	3.009	2.701	1.671	0.037	0.039	0.308	5.729	32.827	0.000	N
78	x00098854	90	x00098854	3.452	2.903	1.873	0.042	0.058	0.548	7.659	58.653	0.000	N
86	x00081228	86	x00081228	3.180	3.556	2.526	0.055	0.069	-0.376	-4.260	18.144	0.000	Y

	Grammar and Punctuation - Before Review			Grammar and Punctuation - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.857	0.857	-0.173	1.322	1.322	0.290
Std. Deviation	1.886	1.706	1.706	1.595	1.556	1.556
Equating Shift		1.030			1.032	

J.P.9. Grammar and Punctuation – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
1	00023679	1	00023679	-3.653	-3.770	-4.177	0.069	0.082	0.117	1.090	1.189	0.276	Y
4	00093150	2	00093150	-2.562	-2.639	-3.046	0.050	0.056	0.078	1.034	1.070	0.301	Y
16	00093379	12	00093379	-0.436	-0.316	-0.723	0.046	0.044	-0.120	-1.883	3.546	0.060	Y
18	00076680	17	00076680	-0.581	-0.930	-1.337	0.064	0.061	0.349	3.943	15.550	0.000	Y
19	00093149	18	00093149	-1.548	-1.040	-1.447	0.044	0.043	-0.508	-8.257	68.174	0.000	N
30	00023645	14	00023645	-1.847	-1.926	-2.333	0.063	0.067	0.079	0.863	0.744	0.388	Y
31	00093074	10	00093074	-1.179	-0.929	-1.336	0.031	0.061	-0.249	-3.644	13.279	0.000	Y
35	00093139	32	00093139	-1.262	-1.669	-2.076	0.026	0.036	0.407	9.164	83.977	0.000	N
38	00093391	35	00093391	0.165	0.207	-0.200	0.018	0.020	-0.042	-1.544	2.383	0.123	Y
40	00093148	36	00093148	-0.392	-0.403	-0.810	0.018	0.021	0.011	0.395	0.156	0.693	Y
41	00093034	37	00093034	0.335	0.128	-0.278	0.022	0.024	0.207	6.358	40.425	0.000	N
43	00093398	38	00093398	0.047	-0.012	-0.418	0.022	0.025	0.059	1.760	3.097	0.078	Y
44	00093388	39	00093388	-0.066	-0.313	-0.720	0.022	0.026	0.248	7.267	52.809	0.000	N
45	00093293	45	00093293	0.654	0.925	0.518	0.021	0.021	-0.271	-9.122	83.209	0.000	N
50	00093294	57	00093294	0.485	0.668	0.261	0.020	0.035	-0.183	-4.528	20.502	0.000	Y
58	00093380	59	00093380	1.559	0.948	0.542	0.037	0.036	0.611	11.840	140.190	0.000	N
61	00093137	48	00093137	2.030	1.962	1.556	0.035	0.025	0.068	1.575	2.481	0.115	Y
62	00093374	65	00093374	0.234	-0.137	-0.544	0.027	0.035	0.371	8.384	70.287	0.000	N
67	00093298	67	00093298	1.477	1.433	1.026	0.054	0.042	0.044	0.639	0.408	0.523	Y
76	00093401	73	00093401	1.967	2.156	1.749	0.042	0.033	-0.189	-3.532	12.474	0.000	Y
79	00075740	71	00075740	1.795	2.001	1.595	0.057	0.044	-0.206	-2.860	8.181	0.004	Y
80	00093314	79	00093314	2.768	3.171	2.764	0.052	0.042	-0.402	-6.016	36.192	0.000	N
82	00098766	89	00098766	1.133	1.611	1.204	0.052	0.043	-0.478	-7.082	50.153	0.000	N

	Grammar and Punctuation - Before Review			Grammar and Punctuation - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.049	0.049	-0.358	-0.192	-0.192	-0.585
Std. Deviation	1.581	1.655	1.655	1.722	1.786	1.786
Equating Shift		0.407			0.394	

J.P.10. Numeracy – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
2	x00085137	58	x00085137	-2.050	-1.415	-2.732	0.026	0.042	-0.635	-12.850	165.133	0.000	N
4	x00087887	62	x00087887	-0.706	-0.857	-2.174	0.020	0.038	0.151	3.512	12.332	0.000	Y
7	x00087960	31	x00087960	-0.734	-0.975	-2.292	0.020	0.030	0.241	6.686	44.698	0.000	Y
8	x00087943	35	x00087943	0.436	0.610	-0.707	0.019	0.024	-0.174	-5.675	32.202	0.000	Y
10	x00103189	32	x00103189	-0.049	0.098	-1.219	0.019	0.025	-0.147	-4.682	21.917	0.000	Y
20	x00018868	44	x00018868	-1.835	-1.910	-3.227	0.035	0.058	0.075	1.111	1.235	0.266	Y
21	x00062161	49	x00062161	-0.565	-0.525	-1.843	0.028	0.039	-0.040	-0.832	0.693	0.405	Y
22	x00016163	113	x00016163	0.079	-0.179	-1.496	0.027	0.039	0.258	5.442	29.620	0.000	Y
25	x00085054	57	x00085054	-2.414	-2.381	-3.698	0.035	0.055	-0.033	-0.500	0.250	0.617	Y
32	x00027513	29	x00027513	-0.585	-0.934	-2.252	0.028	0.030	0.349	8.508	72.385	0.000	Y
34	x00027208	67	x00027208	0.167	-0.185	-1.502	0.030	0.036	0.351	7.492	56.124	0.000	Y
39	x00038695	45	x00038695	-1.915	-1.693	-3.010	0.045	0.053	-0.223	-3.200	10.243	0.001	Y
41	x00035698	19	x00035698	-1.913	-1.511	-2.828	0.045	0.046	-0.402	-6.244	38.993	0.000	Y
47	x00086613	18	x00086613	0.653	-0.101	-1.418	0.047	0.031	0.753	13.381	179.055	0.000	N
56	x00075132	64	x00075132	-1.135	-1.091	-2.409	0.030	0.039	-0.043	-0.878	0.771	0.380	Y
58	x00087637	30	x00087637	-1.002	-1.237	-2.554	0.030	0.033	0.235	5.265	27.722	0.000	Y
66	x00027511	37	x00027511	0.971	1.004	-0.313	0.024	0.024	-0.033	-0.974	0.949	0.330	Y
68	x00027534	40	x00027534	1.626	1.589	0.272	0.026	0.025	0.037	1.025	1.050	0.306	N
70	x00027522	71	x00027522	1.478	1.228	-0.089	0.025	0.032	0.249	6.135	37.640	0.000	Y
77	x00018870	116	x00018870	0.285	0.963	-0.354	0.035	0.032	-0.678	-14.300	204.488	0.000	N
79	x00019485	23	x00019485	1.447	0.963	-0.354	0.036	0.027	0.483	10.738	115.303	0.000	Y
83	x00002831	87	x00002831	1.072	0.931	-0.386	0.034	0.047	0.141	2.434	5.925	0.015	Y
88	x00068716	69	x00068716	-0.169	0.257	-1.060	0.024	0.037	-0.426	-9.653	93.174	0.000	Y
93	x00027813	104	x00027813	0.648	0.829	-0.488	0.024	0.023	-0.181	-5.437	29.558	0.000	Y
100	x00027811	20	x00027811	0.017	0.067	-1.250	0.033	0.030	-0.050	-1.122	1.259	0.262	Y
105	x00003052	117	x00003052	0.375	0.480	-0.838	0.034	0.034	-0.105	-2.183	4.766	0.029	Y
106	x00002789	85	x00002789	0.418	0.514	-0.803	0.034	0.052	-0.096	-1.544	2.384	0.123	Y
112	x00100202	42	x00100202	2.263	2.636	1.319	0.037	0.031	-0.373	-7.718	59.573	0.000	Y
113	x00086122	41	x00086122	2.147	1.979	0.662	0.036	0.026	0.168	3.778	14.274	0.000	Y
115	x00086064	127	x00086064	3.069	3.348	2.031	0.043	0.035	-0.280	-5.043	25.434	0.000	Y
60	x00028201	1	x00028201	-0.298	-0.778	-2.095	0.032	0.026	0.480	11.640	135.499	0.000	Y
89	x00027524	6	x00027524	-0.195	-0.082	-1.399	0.024	0.022	-0.113	-3.459	11.962	0.001	Y
63	x00084847	7	x00084847	0.919	0.584	-0.734	0.024	0.020	0.335	10.738	115.312	0.000	Y
86	x00092714	2	x00092714	-0.661	-0.383	-1.700	0.025	0.023	-0.278	-8.198	67.199	0.000	Y

	Numeracy - Before Review			Numeracy - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.054	0.054	-1.263	0.044	0.044	-1.290
Std. Deviation	1.299	1.286	1.286	1.291	1.302	1.302
Equating Shift		1.317			1.335	

J.P.11. Numeracy – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
3	x00086808	9	x00086808	-1.491	-1.371	-2.792	0.022	0.028	-0.119	-3.351	11.232	0.001	Y
4	x00087781	69	x00087781	-1.159	-0.714	-2.134	0.021	0.026	-0.445	-13.317	177.339	0.000	N
9	x00085987	10	x00085987	-0.076	-0.213	-1.633	0.019	0.021	0.136	4.819	23.222	0.000	Y
10	x00026973	12	x00026973	0.586	0.524	-0.896	0.019	0.019	0.062	2.291	5.247	0.022	Y
13	x00092939	6	x00092939	0.858	1.035	-0.385	0.020	0.019	-0.177	-6.425	41.276	0.000	Y
26	x00068921	25	x00068921	0.482	0.574	-0.846	0.027	0.027	-0.091	-2.396	5.740	0.017	Y
33	x00087784	33	x00087784	-1.740	-1.107	-2.527	0.027	0.028	-0.633	-16.284	265.183	0.000	N
34	x00027737	34	x00027737	-1.014	-0.812	-2.233	0.024	0.026	-0.202	-5.707	32.566	0.000	Y
36	x00027217	68	x00027217	-0.389	-0.136	-1.557	0.024	0.025	-0.252	-7.285	53.074	0.000	Y
39	x00087819	41	x00087819	0.545	0.883	-0.537	0.026	0.023	-0.338	-9.740	94.876	0.000	Y
51	x00035425	18	x00035425	-0.913	-1.098	-2.518	0.034	0.036	0.184	3.724	13.870	0.000	Y
55	x00087911	52	x00087911	0.678	0.296	-1.124	0.037	0.033	0.382	7.702	59.326	0.000	Y
79	x00027212	29	x00027212	1.230	1.028	-0.393	0.029	0.027	0.203	5.116	26.178	0.000	Y
81	x00092124	7	x00092124	1.639	1.256	-0.164	0.030	0.019	0.383	10.789	116.412	0.000	Y
82	x00087876	126	x00087876	2.344	2.894	1.474	0.033	0.034	-0.550	-11.614	134.877	0.000	N
84	x00093437	95	x00093437	2.207	2.582	1.162	0.033	0.031	-0.375	-8.284	68.624	0.000	Y
86	x00027205	55	x00027205	0.735	0.638	-0.783	0.040	0.033	0.097	1.871	3.500	0.061	Y
90	x00014787	62	x00014787	0.203	0.345	-1.075	0.042	0.033	-0.142	-2.660	7.074	0.008	Y
96	x00086314	100	x00086314	1.832	1.405	-0.015	0.043	0.042	0.426	7.094	50.318	0.000	Y
99	x00087640	35	x00087640	-0.250	-0.427	-1.847	0.022	0.025	0.177	5.308	28.173	0.000	Y
106	x00069371	38	x00069371	0.298	0.499	-0.921	0.023	0.023	-0.202	-6.205	38.503	0.000	Y
107	x00093767	11	x00093767	0.667	0.451	-0.969	0.023	0.019	0.215	7.219	52.117	0.000	Y
108	x00093467	113	x00093467	0.428	0.404	-1.016	0.023	0.027	0.024	0.690	0.476	0.490	Y
109	x00027739	5	x00027739	0.595	0.690	-0.731	0.023	0.019	-0.095	-3.169	10.043	0.002	Y
110	x00027483	115	x00027483	0.978	1.016	-0.405	0.025	0.025	-0.038	-1.061	1.126	0.289	Y
111	x00027195	13	x00027195	1.255	0.564	-0.856	0.026	0.019	0.691	21.454	460.257	0.000	N
114	x00093468	129	x00093468	-0.277	-0.546	-1.967	0.032	0.049	0.269	4.594	21.108	0.000	Y
115	x00087710	17	x00087710	-0.155	-0.103	-1.524	0.031	0.029	-0.051	-1.213	1.471	0.225	Y
118	x00085985	26	x00085985	0.517	0.208	-1.212	0.032	0.028	0.309	7.256	52.649	0.000	Y
119	x00088330	54	x00088330	0.281	0.459	-0.962	0.032	0.033	-0.178	-3.870	14.978	0.000	Y
121	x00068143	27	x00068143	1.073	0.650	-0.770	0.035	0.027	0.423	9.559	91.367	0.000	Y
122	x00027385	22	x00027385	1.215	1.226	-0.194	0.036	0.027	-0.011	-0.251	0.063	0.802	Y
125	x00028044	98	x00028044	1.297	1.505	0.084	0.037	0.042	-0.207	-3.704	13.719	0.000	Y
126	x00084864	30	x00084864	1.859	1.264	-0.157	0.043	0.027	0.595	11.727	137.524	0.000	N

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
134	x00093496	15	x00093496	2.539	2.443	1.022	0.037	0.022	0.096	2.231	4.979	0.026	Y
136	x00068562	127	x00068562	2.293	2.624	1.204	0.036	0.032	-0.331	-6.869	47.182	0.000	Y
137	x00087931	91	x00087931	2.724	2.505	1.084	0.039	0.031	0.219	4.394	19.304	0.000	Y
138	x00092564	157	x00092564	3.485	3.882	2.462	0.047	0.046	-0.397	-6.039	36.473	0.000	Y
139	x00092557	96	x00092557	3.461	3.516	2.096	0.048	0.037	-0.055	-0.906	0.821	0.365	Y

	Numeracy - Before Review			Numeracy - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.054	0.054	-1.263	0.044	0.044	-1.290
Std. Deviation	1.299	1.286	1.286	1.291	1.302	1.302
Equating Shift		1.317			1.335	

J.P.12. Numeracy – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
1	x00027251	70	x00027251	-1.253	-0.970	-1.818	0.020	0.026	-0.283	-8.635	74.572	0.000	Y
3	x00092579	37	x00092579	-0.707	-0.743	-1.591	0.019	0.025	0.036	1.146	1.313	0.252	Y
4	x00092626	5	x00092626	-0.195	-0.114	-0.962	0.019	0.020	-0.081	-2.951	8.708	0.003	Y
14	x00092244	12	x00092244	0.434	0.951	0.103	0.020	0.021	-0.517	-17.821	317.583	0.000	N
16	x00092532	14	x00092532	1.893	1.763	0.915	0.028	0.024	0.131	3.540	12.533	0.000	Y
28	x00095113	26	x00095113	-0.130	0.030	-0.818	0.027	0.028	-0.160	-4.112	16.906	0.000	Y
37	x00027299	36	x00027299	-1.515	-1.365	-2.213	0.024	0.026	-0.150	-4.251	18.071	0.000	Y
39	x00027280	2	x00027280	-1.116	-0.962	-1.810	0.023	0.021	-0.154	-4.937	24.378	0.000	Y
40	x00092374	67	x00092374	-1.487	-1.034	-1.882	0.024	0.025	-0.452	-13.051	170.326	0.000	Y
42	x00027172	1	x00027172	-0.250	-1.119	-1.968	0.024	0.022	0.870	26.711	713.491	0.000	N
45	x00027301	42	x00027301	-0.175	-0.016	-0.864	0.024	0.025	-0.159	-4.590	21.067	0.000	Y
47	x00092177	73	x00092177	-0.164	-0.122	-0.970	0.024	0.027	-0.043	-1.185	1.403	0.236	Y
61	x00027312	128	x00027312	-0.120	0.423	-0.425	0.035	0.036	-0.543	-10.821	117.097	0.000	Y
64	x00014989	22	x00014989	0.469	0.128	-0.720	0.040	0.028	0.341	6.975	48.646	0.000	Y
67	x00026946	66	x00026946	-2.888	-2.785	-3.634	0.030	0.035	-0.103	-2.224	4.945	0.026	Y
74	x00085989	34	x00085989	-1.099	-1.131	-1.979	0.025	0.025	0.032	0.913	0.833	0.361	Y
77	x00092096	68	x00092096	-0.231	-0.533	-1.381	0.029	0.026	0.302	7.753	60.111	0.000	Y
78	x00027304	38	x00027304	-1.185	-0.484	-1.332	0.025	0.024	-0.702	-20.243	409.773	0.000	N
80	x00094838	69	x00094838	-0.992	-0.885	-1.733	0.026	0.026	-0.106	-2.885	8.321	0.004	Y
83	x00092511	46	x00092511	0.462	0.993	0.145	0.030	0.029	-0.532	-12.739	162.292	0.000	Y
85	x00092100	119	x00092100	0.351	1.544	0.696	0.030	0.028	-1.193	-29.075	845.379	0.000	N
92	x00092301	127	x00092301	2.022	2.602	1.754	0.036	0.040	-0.581	-10.788	116.387	0.000	Y
93	x00092383	121	x00092383	1.393	1.857	1.009	0.032	0.031	-0.464	-10.412	108.408	0.000	Y
94	x00092104	124	x00092104	1.965	2.370	1.522	0.036	0.036	-0.405	-7.961	63.377	0.000	Y
104	x00043943	141	x00043943	0.252	0.939	0.091	0.042	0.038	-0.687	-12.135	147.266	0.000	Y
105	x00092568	20	x00092568	0.780	0.395	-0.453	0.042	0.028	0.384	7.616	57.996	0.000	Y
106	x00038938	139	x00038938	1.039	1.064	0.216	0.043	0.038	-0.025	-0.438	0.192	0.661	Y
117	x00092519	113	x00092519	0.577	0.829	-0.019	0.027	0.025	-0.253	-6.863	47.100	0.000	Y
119	x00094733	45	x00094733	0.095	-0.792	-1.640	0.026	0.025	0.887	24.589	604.599	0.000	N
120	x00092390	77	x00092390	-0.022	0.058	-0.790	0.026	0.019	-0.081	-2.507	6.286	0.012	Y
122	x00092237	117	x00092237	1.232	1.385	0.537	0.031	0.027	-0.154	-3.742	14.005	0.000	Y
128	x00092632	144	x00092632	2.596	1.669	0.821	0.052	0.051	0.927	12.722	161.857	0.000	N
130	x00035668	50	x00035668	-0.726	-0.892	-1.740	0.037	0.035	0.166	3.253	10.579	0.001	Y
131	x00057860	18	x00057860	-1.100	-1.655	-2.503	0.039	0.035	0.556	10.601	112.381	0.000	Y

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
132	x00014955	19	x00014955	-0.807	-1.416	-2.264	0.038	0.033	0.609	12.097	146.345	0.000	Y
134	x00092577	51	x00092577	-0.892	-1.100	-1.948	0.038	0.036	0.208	3.976	15.809	0.000	Y
135	x00092191	54	x00092191	0.192	-0.190	-1.038	0.037	0.035	0.382	7.492	56.126	0.000	N
138	x00092637	135	x00092637	0.240	0.734	-0.114	0.037	0.036	-0.493	-9.557	91.343	0.000	Y
140	x00095678	58	x00095678	0.427	0.787	-0.061	0.038	0.039	-0.360	-6.615	43.765	0.000	Y
142	x00003146	137	x00003146	-0.675	-1.115	-1.963	0.038	0.047	0.440	7.284	53.057	0.000	Y
143	x00027322	53	x00027322	0.959	-0.169	-1.017	0.043	0.035	1.128	20.351	414.171	0.000	N
144	x00092565	138	x00092565	1.835	2.172	1.324	0.056	0.047	-0.337	-4.615	21.298	0.000	Y
146	x00027177	39	x00027177	1.115	1.471	0.623	0.036	0.033	-0.356	-7.297	53.242	0.000	Y
148	x00092591	83	x00092591	1.353	0.848	0.000	0.036	0.030	0.505	10.783	116.281	0.000	Y
150	x00027308	87	x00027308	1.783	1.377	0.529	0.038	0.030	0.406	8.385	70.300	0.000	Y
154	x00092524	89	x00092524	2.219	1.169	0.321	0.043	0.030	1.050	20.017	400.677	0.000	N
157	x00092564	125	x00092564	2.462	2.446	1.597	0.046	0.037	0.017	0.281	0.079	0.779	Y

	Numeracy - Before Review			Numeracy - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.222	0.222	-0.626	0.132	0.132	-0.642
Std. Deviation	1.213	1.254	1.254	1.219	1.309	1.309
Equating Shift		0.848			0.774	

APPENDIX J.O. VERTICAL LINK ITEMS STATISTICS (ONLINE TEST)

J.O.1. Reading – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
27	x00083501	55	x00083501	-1.630	-1.282	-2.123	0.027	0.043	-0.348	-6.851	46.935	0.000	N
28	x00083503	56	x00083503	-0.447	-0.160	-1.001	0.025	0.039	-0.287	-6.188	38.289	0.000	N
29	x00083502	57	x00083502	-1.086	-0.581	-1.422	0.025	0.039	-0.505	-10.903	118.879	0.000	N
30	x00083507	58	x00083507	-0.460	-0.132	-0.973	0.025	0.039	-0.328	-7.083	50.172	0.000	N
31	x00083509	59	x00083509	-1.048	-0.758	-1.599	0.025	0.040	-0.290	-6.143	37.732	0.000	N
32	x00083510	60	x00083510	-0.990	-0.830	-1.671	0.025	0.040	-0.159	-3.379	11.416	0.001	Y
33	x00083511	61	x00083511	-1.374	-0.961	-1.802	0.026	0.041	-0.412	-8.497	72.192	0.000	N
34	x00095784	62	x00095784	0.122	0.119	-0.722	0.026	0.040	0.003	0.069	0.005	0.945	Y
35	x00095776	63	x00095776	0.609	0.812	-0.029	0.028	0.044	-0.203	-3.884	15.083	0.000	Y
36	x00095769	64	x00095769	-0.691	-0.615	-1.456	0.025	0.040	-0.076	-1.615	2.608	0.106	Y
37	x00095785	65	x00095785	-1.302	-0.834	-1.674	0.026	0.040	-0.468	-9.820	96.425	0.000	N
79	x00073762	21	x00073762	0.493	-0.097	-0.938	0.039	0.029	0.591	12.153	147.696	0.000	N
80	x00073742	22	x00073742	0.726	0.626	-0.215	0.039	0.027	0.100	2.115	4.474	0.034	Y
81	x00073738	23	x00073738	-1.038	-0.999	-1.840	0.050	0.036	-0.039	-0.632	0.400	0.527	Y
82	x00073743	24	x00073743	0.298	0.165	-0.676	0.040	0.028	0.133	2.727	7.435	0.006	Y
84	x00073799	26	x00073799	0.581	0.571	-0.269	0.039	0.027	0.009	0.195	0.038	0.845	Y
85	x00073750	25	x00073750	-0.656	-0.846	-1.686	0.046	0.034	0.189	3.308	10.944	0.001	Y
86	x00088286	46	x00088286	0.688	0.427	-0.414	0.039	0.050	0.262	4.127	17.034	0.000	Y
87	x00092888	47	x00092888	1.080	1.365	0.524	0.040	0.057	-0.285	-4.097	16.788	0.000	Y
88	x00088281	48	x00088281	0.045	0.200	-0.641	0.041	0.049	-0.155	-2.422	5.867	0.015	Y
89	x00088282	49	x00088282	0.861	0.806	-0.035	0.040	0.052	0.055	0.838	0.702	0.402	Y
90	x00088275	50	x00088275	1.629	1.633	0.792	0.043	0.061	-0.004	-0.051	0.003	0.960	Y
92	x00088578	2	x00088578	-0.419	-0.857	-1.698	0.023	0.025	0.438	12.891	166.183	0.000	N
93	x00088580	3	x00088580	1.090	1.063	0.222	0.025	0.019	0.027	0.859	0.738	0.390	Y
94	x00088582	4	x00088582	1.576	1.359	0.519	0.027	0.019	0.216	6.554	42.959	0.000	N
95	x00088583	5	x00088583	0.879	0.733	-0.108	0.024	0.019	0.146	4.766	22.715	0.000	Y
96	x00088585	6	x00088585	1.297	0.809	-0.031	0.026	0.019	0.487	15.131	228.933	0.000	N
97	x00088584	7	x00088584	0.803	1.682	0.841	0.024	0.019	-0.878	-28.696	823.444	0.000	N
98	x00093063	33	x00093063	0.647	0.583	-0.257	0.023	0.035	0.064	1.532	2.346	0.126	Y
99	x00093066	34	x00093066	0.277	0.209	-0.631	0.023	0.034	0.068	1.646	2.708	0.100	Y
100	x00093067	35	x00093067	0.999	0.987	0.146	0.024	0.037	0.012	0.262	0.069	0.793	Y

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
101	x00093070	36	x00093070	1.505	1.314	0.473	0.027	0.039	0.191	4.030	16.243	0.000	Y
102	x00093071	37	x00093071	-0.430	-0.531	-1.372	0.024	0.036	0.101	2.332	5.436	0.020	Y
103	x00093065	38	x00093065	1.567	1.250	0.409	0.028	0.038	0.317	6.726	45.237	0.000	N
104	x00093072	39	x00093072	0.060	0.022	-0.819	0.023	0.034	0.039	0.939	0.882	0.348	Y
118	x00088059	99	x00088059	2.852	2.569	1.728	0.053	0.030	0.284	4.659	21.702	0.000	Y
119	x00092884	100	x00092884	2.980	2.540	1.699	0.055	0.030	0.440	7.027	49.377	0.000	N
120	x00088062	101	x00088062	1.429	1.320	0.479	0.046	0.024	0.109	2.096	4.395	0.036	Y
121	x00092885	102	x00092885	1.540	1.375	0.534	0.046	0.024	0.165	3.187	10.160	0.001	Y
122	x00088048	103	x00088048	0.858	0.867	0.026	0.048	0.024	-0.009	-0.162	0.026	0.871	Y

	Reading - Before Review			Reading - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.398	0.398	-0.443	0.576	0.576	-0.304
Std. Deviation	1.106	0.982	0.982	0.893	0.852	0.852
Equating Shift		0.841			0.880	

J.O.2. Reading – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
8	x00072763	5	x00072763	-1.457	-1.437	-2.404	0.023	0.028	-0.020	-0.550	0.303	0.582	Y
10	x00072750	6	x00072750	0.535	0.478	-0.488	0.019	0.019	0.057	2.117	4.483	0.034	Y
11	x00098703	7	x00098703	0.277	0.167	-0.799	0.019	0.019	0.109	4.068	16.550	0.000	Y
14	x00072759	17	x00072759	-0.093	0.101	-0.866	0.026	0.028	-0.194	-5.068	25.685	0.000	Y
15	x00072768	18	x00072768	-0.027	0.098	-0.869	0.026	0.028	-0.125	-3.264	10.656	0.001	Y
16	x00072771	19	x00072771	0.850	0.695	-0.272	0.027	0.026	0.155	4.126	17.023	0.000	Y
17	x00072775	20	x00072775	-0.986	-1.066	-2.033	0.029	0.035	0.080	1.764	3.112	0.078	Y
18	x00072779	22	x00072779	-0.882	-0.754	-1.720	0.029	0.032	-0.128	-2.958	8.749	0.003	Y
19	x00072782	23	x00072782	-1.029	-1.204	-2.171	0.030	0.037	0.175	3.681	13.550	0.000	Y
66	x00093013	9	x00093013	0.727	1.056	0.090	0.021	0.018	-0.329	-11.889	141.353	0.000	NN*
67	x00093014	10	x00093014	2.107	1.560	0.594	0.026	0.019	0.547	16.972	288.060	0.000	N
68	x00093020	11	x00093020	1.014	0.863	-0.104	0.022	0.018	0.152	5.334	28.448	0.000	Y
69	x00093021	12	x00093021	0.969	1.085	0.118	0.022	0.019	-0.116	-3.983	15.861	0.000	Y
70	x00093022	13	x00093022	1.599	1.489	0.522	0.023	0.019	0.110	3.699	13.682	0.000	Y
71	x00093019	14	x00093019	1.998	1.736	0.770	0.026	0.020	0.262	7.993	63.889	0.000	N
72	x00093018	15	x00093018	2.033	2.019	1.052	0.026	0.020	0.014	0.438	0.192	0.661	Y
73	x00093015	16	x00093015	2.222	2.213	1.246	0.027	0.021	0.009	0.263	0.069	0.793	Y
92	x00074098	42	x00074098	-0.651	-0.655	-1.621	0.025	0.030	0.004	0.104	0.011	0.917	Y
93	x00074099	43	x00074099	-0.538	-0.462	-1.429	0.025	0.029	-0.076	-1.976	3.903	0.048	Y
94	x00074094	44	x00074094	-0.705	-0.485	-1.451	0.025	0.029	-0.220	-5.740	32.946	0.000	Y
95	x00074095	45	x00074095	0.759	0.959	-0.007	0.025	0.028	-0.200	-5.323	28.335	0.000	Y
96	x00074102	46	x00074102	0.704	0.776	-0.190	0.024	0.028	-0.072	-1.960	3.842	0.050	Y
97	x00074101	47	x00074101	0.855	0.810	-0.156	0.025	0.028	0.044	1.179	1.391	0.238	Y
98	x00074100	48	x00074100	0.627	0.553	-0.414	0.024	0.027	0.074	2.044	4.178	0.041	Y
105	x00099102	28	x00099102	0.027	-0.027	-0.993	0.033	0.028	0.054	1.252	1.568	0.211	Y
107	x00060757	29	x00060757	1.774	1.979	1.013	0.042	0.029	-0.206	-4.029	16.232	0.000	Y
108	x00099103	30	x00099103	0.363	0.799	-0.167	0.033	0.026	-0.437	-10.391	107.979	0.000	N
110	x00051807	32	x00051807	0.769	0.638	-0.329	0.034	0.026	0.132	3.076	9.461	0.002	Y
111	x00099099	31	x00099099	0.384	0.242	-0.724	0.033	0.027	0.142	3.328	11.073	0.001	Y

* NN: Link item was removed due to misfit.

	Reading - Before Review			Reading - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.491	0.491	-0.476	0.361	0.361	-0.604
Std. Deviation	1.018	0.983	0.983	0.993	0.990	0.990
Equating Shift		0.966			0.965	

J.O.3. Reading – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
53	x00093943	17	x00093943	-0.919	-1.400	-1.766	0.039	0.036	0.481	9.063	82.141	0.000	N
56	x00093955	19	x00093955	-0.578	-1.303	-1.669	0.039	0.035	0.724	13.819	190.956	0.000	N
57	x00093960	20	x00093960	0.548	0.551	0.185	0.044	0.027	-0.003	-0.058	0.003	0.954	Y
58	x00074403	55	x00074403	-1.439	-1.368	-1.734	0.041	0.051	-0.071	-1.079	1.164	0.281	Y
59	x00074402	56	x00074402	-0.288	-0.154	-0.520	0.039	0.046	-0.135	-2.230	4.975	0.026	Y
61	x00074412	57	x00074412	-0.517	-0.453	-0.819	0.039	0.046	-0.064	-1.065	1.134	0.287	Y
62	x00074413	58	x00074413	-0.561	-0.639	-1.005	0.039	0.047	0.078	1.285	1.651	0.199	Y
63	x00074406	59	x00074406	0.084	0.125	-0.241	0.041	0.047	-0.041	-0.655	0.429	0.512	Y
96	x00094665	96	x00094665	2.723	2.560	2.194	0.038	0.029	0.163	3.401	11.569	0.001	Y
113	x00093483	113	x00093483	-1.606	-1.324	-1.690	0.026	0.032	-0.282	-6.839	46.765	0.000	N
114	x00093485	114	x00093485	0.647	0.990	0.624	0.023	0.025	-0.343	-10.091	101.829	0.000	N
115	x00093484	115	x00093484	0.364	0.405	0.039	0.022	0.024	-0.041	-1.258	1.582	0.208	Y
116	x00093490	116	x00093490	-0.861	-0.446	-0.812	0.022	0.026	-0.415	-12.183	148.433	0.000	N
117	x00093489	117	x00093489	0.178	0.306	-0.060	0.021	0.024	-0.128	-4.016	16.130	0.000	Y
118	x00093482	118	x00093482	2.113	2.105	1.739	0.033	0.032	0.008	0.182	0.033	0.855	Y
119	x00088251	119	x00088251	1.737	1.690	1.324	0.029	0.028	0.047	1.161	1.348	0.246	Y
120	x00088250	120	x00088250	1.000	1.109	0.743	0.024	0.025	-0.109	-3.149	9.918	0.002	Y
121	x00088237	121	x00088237	-0.711	-0.624	-0.990	0.022	0.027	-0.087	-2.499	6.244	0.012	Y
122	x00088242	122	x00088242	1.176	1.459	1.093	0.025	0.027	-0.283	-7.700	59.287	0.000	N
123	x00088246	123	x00088246	2.678	3.166	2.800	0.042	0.047	-0.487	-7.728	59.715	0.000	N
124	x00088240	124	x00088240	1.757	1.706	1.340	0.030	0.029	0.051	1.219	1.486	0.223	Y
125	x00094499	125	x00094499	0.472	1.030	0.664	0.022	0.025	-0.558	-16.765	281.052	0.000	N
126	x00094503	126	x00094503	1.191	1.234	0.868	0.025	0.026	-0.043	-1.191	1.418	0.234	Y
127	x00094504	127	x00094504	0.133	0.590	0.224	0.021	0.024	-0.457	-14.330	205.348	0.000	N
128	x00094507	128	x00094507	0.792	0.994	0.628	0.023	0.025	-0.202	-5.955	35.463	0.000	Y
129	x00076037	21	x00076037	-0.477	-0.689	-1.055	0.031	0.030	0.212	4.909	24.096	0.000	Y
130	x00076034	22	x00076034	-0.881	-1.050	-1.416	0.032	0.033	0.169	3.667	13.447	0.000	Y
131	x00076159	23	x00076159	-1.061	-1.515	-1.881	0.033	0.037	0.454	9.159	83.896	0.000	N
132	x00076035	24	x00076035	-0.441	-0.468	-0.834	0.030	0.029	0.027	0.638	0.406	0.524	Y
133	x00076036	25	x00076036	-1.657	-1.960	-2.326	0.038	0.042	0.303	5.352	28.640	0.000	Y
134	x00076156	26	x00076156	0.271	0.001	-0.365	0.031	0.028	0.270	6.456	41.681	0.000	N
157	x00092703	149	x00092703	2.353	1.931	1.565	0.041	0.029	0.422	8.393	70.449	0.000	N
158	x00092702	150	x00092702	3.218	3.224	2.858	0.054	0.038	-0.005	-0.082	0.007	0.935	Y
159	x00092704	151	x00092704	1.954	1.911	1.545	0.038	0.029	0.042	0.889	0.790	0.374	Y

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
160	x00092696	152	x00092696	4.371	4.066	3.700	0.086	0.051	0.304	3.044	9.263	0.002	Y

	Reading - Before Review			Reading - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.507	0.507	0.142	0.655	0.655	0.268
Std. Deviation	1.469	1.508	1.508	1.539	1.522	1.522
Equating Shift		0.366			0.387	

J.O.4. Spelling – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
7	x00091041	4	x00091041	0.405	0.547	-1.194	0.037	0.041	-0.142	-2.580	6.656	0.010	Y
8	x00070480	6	x00070480	1.351	1.290	-0.451	0.047	0.043	0.061	0.952	0.906	0.341	Y
9	x00091103	8	x00091103	2.277	2.452	0.711	0.064	0.055	-0.175	-2.068	4.277	0.039	Y
11	x00076738	11	x00076738	-3.302	-3.349	-5.091	0.041	0.079	0.047	0.530	0.281	0.596	Y
18	x00091025	16	x00091025	1.051	1.567	-0.175	0.044	0.045	-0.516	-8.198	67.207	0.000	N
19	x00091080	17	x00091080	2.346	2.173	0.431	0.068	0.051	0.173	2.041	4.165	0.041	Y
22	x00090964	21	x00090964	0.888	1.238	-0.503	0.037	0.036	-0.350	-6.781	45.986	0.000	N
23	x00091081	22	x00091081	1.925	1.742	0.001	0.035	0.032	0.183	3.859	14.892	0.000	Y
25	x00046148	24	x00046148	2.792	3.106	1.365	0.037	0.028	-0.314	-6.772	45.866	0.000	N
28	x00046140	29	x00046140	0.397	0.563	-1.179	0.040	0.043	-0.166	-2.831	8.013	0.005	Y
29	x00046157	31	x00046157	1.330	1.687	-0.054	0.035	0.032	-0.357	-7.536	56.794	0.000	N
31	x00023797	32	x00023797	2.322	2.301	0.559	0.035	0.030	0.021	0.454	0.206	0.650	Y
38	x00085976	37	x00085976	-0.460	-0.217	-1.959	0.033	0.040	-0.243	-4.678	21.884	0.000	Y
39	x00086004	38	x00086004	-0.015	0.366	-1.375	0.033	0.037	-0.382	-7.696	59.234	0.000	N
44	x00016990	44	x00016990	-0.059	-0.169	-1.910	0.033	0.040	0.109	2.109	4.447	0.035	Y
51	x00085999	50	x00085999	0.112	-0.299	-2.041	0.033	0.041	0.411	7.817	61.100	0.000	N
52	x00085939	52	x00085939	0.876	0.947	-0.794	0.033	0.034	-0.071	-1.497	2.240	0.134	Y
59	x00018474	56	x00018474	-1.468	-1.422	-3.163	0.038	0.048	-0.046	-0.753	0.566	0.452	Y
60	x00085920	57	x00085920	-0.966	-1.075	-2.816	0.027	0.031	0.109	2.648	7.013	0.008	Y
61	x00018484	59	x00018484	-1.278	-0.685	-2.427	0.038	0.042	-0.593	-10.466	109.540	0.000	N
68	x00016924	66	x00016924	-0.174	-0.833	-2.574	0.042	0.043	0.659	10.957	120.063	0.000	N
69	x00008447	68	x00008447	-0.493	-0.618	-2.359	0.040	0.041	0.125	2.182	4.760	0.029	Y
75	x00016974	72	x00016974	2.104	1.776	0.034	0.032	0.034	0.329	7.039	49.545	0.000	N
77	x00085990	76	x00085990	3.552	3.164	1.422	0.040	0.029	0.388	7.859	61.764	0.000	N
79	x00070148	49	x00070148	-0.338	-0.370	-2.111	0.036	0.042	0.032	0.587	0.345	0.557	Y
85	x00018416	81	x00018416	2.063	1.827	0.086	0.033	0.034	0.236	4.990	24.899	0.000	Y
86	x00086002	83	x00086002	2.789	2.397	0.655	0.035	0.031	0.392	8.390	70.390	0.000	N
87	x00085972	84	x00085972	2.940	2.862	1.121	0.036	0.030	0.078	1.671	2.793	0.095	Y

	Spelling - Before Review			Spelling - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.820	0.820	-0.921	0.577	0.577	-1.184
Std. Deviation	1.602	1.572	1.572	1.668	1.648	1.648
Equating Shift		1.741			1.761	

J.O.5. Spelling – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
2	x00090999	1	x00090999	-2.249	-2.144	-3.470	0.042	0.059	-0.105	-1.454	2.113	0.146	Y
3	x00091085	2	x00091085	-1.411	-1.557	-2.883	0.040	0.052	0.145	2.217	4.914	0.027	Y
7	x00046188	5	x00046188	0.325	0.369	-0.957	0.050	0.047	-0.044	-0.647	0.419	0.518	Y
12	x00011202	11	x00011202	-2.086	-1.679	-3.005	0.042	0.053	-0.407	-6.019	36.225	0.000	N
15	x00091086	16	x00091086	-0.125	0.574	-0.752	0.045	0.048	-0.699	-10.626	112.922	0.000	N
18	x00012230	13	x00012230	0.896	0.410	-0.916	0.059	0.047	0.486	6.444	41.528	0.000	N
23	x00046208	21	x00046208	1.257	1.011	-0.316	0.028	0.030	0.246	6.000	36.003	0.000	N
25	x00070468	22	x00070468	1.784	1.801	0.474	0.029	0.027	-0.017	-0.427	0.182	0.670	Y
26	x00091108	24	x00091108	2.274	2.483	1.156	0.029	0.027	-0.209	-5.274	27.817	0.000	Y
30	x00046180	29	x00046180	0.052	0.052	-1.274	0.032	0.038	-0.001	-0.018	0.000	0.985	Y
33	x00091005	31	x00091005	2.105	1.663	0.337	0.029	0.028	0.442	10.964	120.213	0.000	N
34	x00046177	32	x00046177	2.101	1.904	0.578	0.029	0.027	0.197	4.984	24.837	0.000	Y
40	x00086032	37	x00086032	0.142	0.344	-0.982	0.032	0.035	-0.202	-4.254	18.095	0.000	Y
41	x00018446	38	x00018446	0.079	0.304	-1.022	0.032	0.035	-0.225	-4.734	22.410	0.000	Y
42	x00086052	69	x00086052	0.853	1.036	-0.290	0.032	0.039	-0.183	-3.625	13.137	0.000	Y
43	x00018478	43	x00018478	-2.056	-2.060	-3.387	0.042	0.059	0.004	0.055	0.003	0.956	Y
47	x00008068	44	x00008068	0.509	0.629	-0.697	0.032	0.033	-0.121	-2.622	6.873	0.009	Y
48	x00086028	39	x00086028	1.491	0.910	-0.416	0.032	0.032	0.581	12.844	164.961	0.000	N
51	x00008483	50	x00008483	-1.176	-0.887	-2.214	0.036	0.043	-0.289	-5.151	26.533	0.000	Y
54	x00086039	53	x00086039	1.126	1.124	-0.202	0.032	0.032	0.002	0.047	0.002	0.962	Y
60	x00017000	55	x00017000	-2.167	-1.844	-3.170	0.041	0.050	-0.323	-4.991	24.911	0.000	Y
61	x00086015	57	x00086015	-0.482	-0.769	-2.096	0.039	0.041	0.287	5.071	25.713	0.000	Y
62	x00086038	63	x00086038	-0.765	-0.689	-2.015	0.038	0.041	-0.077	-1.376	1.894	0.169	Y
63	x00016970	60	x00016970	-0.784	-0.650	-1.977	0.038	0.040	-0.133	-2.416	5.838	0.016	Y
67	x00008076	65	x00008076	-2.062	-1.620	-2.947	0.040	0.048	-0.442	-7.068	49.961	0.000	N
70	x00086025	66	x00086025	-0.827	-1.076	-2.402	0.039	0.043	0.249	4.284	18.351	0.000	Y
71	x00086023	67	x00086023	-1.071	-1.065	-2.391	0.038	0.043	-0.006	-0.109	0.012	0.913	Y
78	x00086050	71	x00086050	2.505	2.417	1.091	0.022	0.021	0.088	2.909	8.460	0.004	Y
80	x00085992	75	x00085992	3.689	3.220	1.894	0.037	0.029	0.469	9.986	99.729	0.000	N
82	x00086024	79	x00086024	0.932	0.542	-0.784	0.030	0.040	0.390	7.794	60.743	0.000	N
88	x00086046	86	x00086046	4.503	4.609	3.283	0.044	0.036	-0.106	-1.862	3.467	0.063	Y

	Spelling - Before Review			Spelling - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.302	0.302	-1.024	0.148	0.148	-1.129
Std. Deviation	1.748	1.641	1.641	1.716	1.712	1.712
Equating Shift		1.326			1.278	

J.O.6. Spelling – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
7	x00070408	6	x00070408	1.111	1.484	0.600	0.076	0.050	-0.373	-4.103	16.836	0.000	Y
8	x00091007	7	x00091007	1.543	1.567	0.683	0.090	0.051	-0.024	-0.235	0.055	0.814	Y
10	x00069590	9	x00069590	2.783	3.433	2.549	0.154	0.098	-0.650	-3.559	12.666	0.000	N
15	x00070485	13	x00070485	-0.175	-0.568	-1.453	0.053	0.043	0.393	5.766	33.241	0.000	Y
17	x00023806	15	x00023806	1.316	1.452	0.568	0.083	0.051	-0.136	-1.400	1.959	0.162	Y
18	x00091033	16	x00091033	2.131	1.719	0.834	0.116	0.055	0.413	3.216	10.340	0.001	Y
23	x00046235	22	x00046235	0.535	0.711	-0.174	0.027	0.033	-0.176	-4.132	17.070	0.000	Y
26	x00011206	23	x00011206	1.658	1.341	0.457	0.027	0.030	0.317	7.854	61.682	0.000	N
27	x00091011	25	x00091011	2.518	2.685	1.801	0.030	0.028	-0.167	-4.076	16.612	0.000	Y
30	x00091010	29	x00091010	-0.745	-0.711	-1.595	0.033	0.050	-0.034	-0.573	0.329	0.566	Y
33	x00091006	31	x00091006	1.188	1.225	0.341	0.027	0.030	-0.037	-0.926	0.858	0.354	Y
35	x00091112	32	x00091112	2.264	1.877	0.993	0.029	0.029	0.387	9.425	88.838	0.000	N
40	x00086062	39	x00086062	-0.304	0.116	-0.768	0.032	0.035	-0.421	-8.871	78.695	0.000	N
41	x00008072	40	x00008072	-0.095	0.199	-0.686	0.031	0.035	-0.293	-6.267	39.279	0.000	N
46	x00018514	44	x00018514	0.363	0.081	-0.803	0.031	0.035	0.282	6.027	36.323	0.000	N
47	x00008102	38	x00008102	0.253	-0.437	-1.322	0.031	0.038	0.690	14.064	197.788	0.000	N
48	x00017042	46	x00017042	0.545	0.347	-0.538	0.031	0.034	0.198	4.305	18.537	0.000	Y
49	x00008511	49	x00008511	-2.544	-2.162	-3.046	0.046	0.059	-0.383	-5.114	26.150	0.000	Y
54	x00086021	52	x00086021	0.460	0.445	-0.439	0.031	0.033	0.015	0.321	0.103	0.749	Y
59	x00069749	57	x00069749	-1.375	-1.027	-1.912	0.027	0.040	-0.348	-7.207	51.943	0.000	N
61	x00086029	58	x00086029	-1.305	-1.194	-2.079	0.027	0.040	-0.110	-2.289	5.238	0.022	Y
62	x00086055	59	x00086055	-1.344	-0.969	-1.853	0.027	0.040	-0.376	-7.784	60.594	0.000	N
72	x00086071	71	x00086071	0.836	1.225	0.340	0.030	0.027	-0.388	-9.621	92.570	0.000	N
76	x00008088	73	x00008088	1.975	1.834	0.949	0.029	0.027	0.141	3.555	12.637	0.000	Y
77	x00086040	74	x00086040	1.956	1.524	0.640	0.029	0.027	0.431	10.884	118.470	0.000	N
82	x00086084	81	x00086084	2.245	1.913	1.028	0.030	0.027	0.332	8.225	67.645	0.000	N
83	x00086060	83	x00086060	1.788	1.313	0.429	0.029	0.027	0.474	11.968	143.236	0.000	N
85	x00086057	84	x00086057	2.518	2.673	1.788	0.031	0.027	-0.155	-3.770	14.213	0.000	Y

	Spelling - Before Review			Spelling - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.789	0.789	-0.095	0.738	0.738	-0.117
Std. Deviation	1.393	1.331	1.331	1.446	1.411	1.411
Equating Shift		0.884			0.855	

J.O.7. Grammar and Punctuation – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
3	x00023613	2	x00023613	-2.432	-2.920	-3.539	0.034	0.059	0.489	7.178	51.528	0.000	N
4	x00023567	3	x00023567	-2.434	-2.758	-3.377	0.034	0.056	0.324	4.952	24.524	0.000	Y
7	x00023566	6	x00023566	-2.058	-2.515	-3.133	0.033	0.052	0.457	7.413	54.956	0.000	N
12	x00090568	8	x00090568	-1.026	-1.114	-1.732	0.032	0.041	0.087	1.675	2.805	0.094	Y
17	x00090223	12	x00090223	-1.641	-1.912	-2.531	0.045	0.065	0.271	3.423	11.715	0.001	Y
36	x00090193	31	x00090193	0.008	0.542	-0.077	0.022	0.019	-0.535	-18.392	338.258	0.000	N
37	x00093357	32	x00093357	-0.191	-0.161	-0.780	0.023	0.026	-0.030	-0.863	0.745	0.388	Y
39	x00090180	34	x00090180	-0.300	-0.255	-0.874	0.023	0.026	-0.045	-1.285	1.651	0.199	Y
40	x00090578	36	x00090578	0.074	0.510	-0.108	0.022	0.024	-0.436	-13.396	179.450	0.000	N
41	x00074774	37	x00074774	-1.013	-0.334	-0.953	0.025	0.027	-0.679	-18.455	340.602	0.000	N
50	x00098858	42	x00098858	0.597	0.513	-0.106	0.018	0.024	0.085	2.820	7.955	0.005	Y
55	x00093353	35	x00093353	-0.222	-0.336	-0.955	0.032	0.027	0.114	2.729	7.445	0.006	Y
59	x00090219	52	x00090219	-0.325	-0.899	-1.518	0.032	0.043	0.573	10.699	114.469	0.000	N
65	x00093366	54	x00093366	0.948	0.705	0.086	0.034	0.034	0.244	5.071	25.720	0.000	N
66	x00090173	55	x00090173	0.734	0.574	-0.045	0.033	0.034	0.160	3.376	11.396	0.001	Y
67	x00074677	60	x00074677	1.549	2.292	1.673	0.038	0.040	-0.744	-13.478	181.644	0.000	N
71	x00074695	56	x00074695	1.086	1.269	0.650	0.066	0.022	-0.183	-2.624	6.884	0.009	Y
72	x00090588	44	x00090588	1.271	1.224	0.605	0.047	0.016	0.047	0.951	0.904	0.342	Y
74	x00090542	62	x00090542	1.595	1.714	1.095	0.066	0.040	-0.119	-1.538	2.366	0.124	Y
79	x00074691	63	x00074691	1.232	1.539	0.921	0.065	0.040	-0.307	-4.023	16.183	0.000	Y
81	x00074668	58	x00074668	1.947	1.590	0.972	0.049	0.026	0.357	6.431	41.362	0.000	N
82	x00098871	64	x00098871	1.464	1.556	0.937	0.066	0.040	-0.091	-1.181	1.394	0.238	Y
85	x00009887	68	x00009887	2.522	2.733	2.114	0.054	0.030	-0.210	-3.401	11.565	0.001	Y
89	x00090275	80	x00090275	2.257	2.466	1.847	0.072	0.041	-0.209	-2.525	6.378	0.012	Y
90	x00093365	83	x00093365	2.847	2.638	2.019	0.083	0.042	0.210	2.254	5.082	0.024	Y
91	x00074794	75	x00074794	4.066	3.897	3.278	0.125	0.040	0.169	1.291	1.667	0.197	Y

	Grammar & Punctuation - Before Review			Grammar & Punctuation - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.483	0.483	-0.136	0.815	0.815	0.180
Std. Deviation	1.651	1.770	1.770	1.669	1.749	1.749
Equating Shift		0.619			0.635	

J.O.8. Grammar and Punctuation – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
5	x00023602	2	x00023602	-2.423	-1.979	-3.010	0.045	0.056	-0.443	-6.173	38.101	0.000	N
10	x00075674	8	x00075674	-2.151	-1.486	-2.516	0.043	0.050	-0.665	-10.079	101.593	0.000	N
20	x00090863	9	x00090863	-0.857	-0.875	-1.905	0.042	0.064	0.018	0.230	0.053	0.818	Y
21	x00009980	21	x00009980	-1.710	-1.336	-2.366	0.041	0.048	-0.374	-5.932	35.193	0.000	N
30	x00075681	27	x00075681	-0.417	-0.102	-1.132	0.063	0.061	-0.316	-3.598	12.946	0.000	Y
33	x00075720	32	x00075720	-0.352	-0.478	-1.509	0.024	0.027	0.126	3.497	12.231	0.000	Y
39	x00090991	33	x00090991	-0.032	-0.332	-1.363	0.019	0.022	0.301	10.349	107.106	0.000	N
40	x00075653	34	x00075653	-1.054	-0.965	-1.995	0.027	0.032	-0.090	-2.140	4.580	0.032	Y
41	x00090852	25	x00090852	-0.427	-0.049	-1.079	0.025	0.062	-0.379	-5.663	32.069	0.000	N
43	x00075649	37	x00075649	0.223	-0.060	-1.090	0.024	0.025	0.283	8.155	66.506	0.000	N
49	x00075728	47	x00075728	1.603	1.678	0.648	0.023	0.021	-0.075	-2.422	5.864	0.015	Y
57	x00093413	56	x00093413	1.237	0.998	-0.032	0.037	0.031	0.239	4.947	24.474	0.000	Y
59	x00075691	57	x00075691	1.285	1.258	0.228	0.027	0.031	0.027	0.657	0.431	0.511	Y
61	x00093414	39	x00093414	0.850	1.041	0.011	0.041	0.022	-0.191	-4.109	16.888	0.000	Y
65	x00077610	64	x00077610	1.723	1.321	0.291	0.029	0.037	0.401	8.538	72.895	0.000	N
69	x00090856	68	x00090856	2.658	2.607	1.576	0.048	0.055	0.052	0.709	0.503	0.478	Y
72	x00091120	72	x00091120	2.856	2.592	1.562	0.050	0.039	0.264	4.159	17.300	0.000	Y
73	x00093266	85	x00093266	2.866	2.817	1.787	0.035	0.057	0.049	0.731	0.534	0.465	Y
74	x00098853	74	x00098853	3.330	3.037	2.007	0.041	0.059	0.293	4.084	16.677	0.000	Y
76	x00093423	73	x00093423	3.009	2.701	1.671	0.037	0.039	0.308	5.729	32.827	0.000	N
78	x00098854	90	x00098854	3.452	2.903	1.873	0.042	0.058	0.548	7.659	58.653	0.000	N
86	x00081228	86	x00081228	3.180	3.556	2.526	0.055	0.069	-0.376	-4.260	18.144	0.000	Y

	Grammar & Punctuation - Before Review			Grammar & Punctuation - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.857	0.857	-0.173	1.322	1.322	0.290
Std. Deviation	1.886	1.706	1.706	1.595	1.556	1.556
Equating Shift		1.030			1.032	

J.O.9. Grammar and Punctuation – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
1	x00023679	1	x00023679	-3.653	-3.770	-4.177	0.069	0.082	0.117	1.090	1.189	0.276	Y
4	x00093150	2	x00093150	-2.562	-2.639	-3.046	0.050	0.056	0.078	1.034	1.070	0.301	Y
16	x00093379	12	x00093379	-0.436	-0.316	-0.723	0.046	0.044	-0.120	-1.883	3.546	0.060	Y
18	x00076680	17	x00076680	-0.581	-0.930	-1.337	0.064	0.061	0.349	3.943	15.550	0.000	Y
19	x00093149	18	x00093149	-1.548	-1.040	-1.447	0.044	0.043	-0.508	-8.257	68.174	0.000	N
30	x00023645	14	x00023645	-1.847	-1.926	-2.333	0.063	0.067	0.079	0.863	0.744	0.388	Y
31	x00093074	10	x00093074	-1.179	-0.929	-1.336	0.031	0.061	-0.249	-3.644	13.279	0.000	Y
35	x00093139	32	x00093139	-1.262	-1.669	-2.076	0.026	0.036	0.407	9.164	83.977	0.000	N
38	x00093391	35	x00093391	0.165	0.207	-0.200	0.018	0.020	-0.042	-1.544	2.383	0.123	Y
40	x00093148	36	x00093148	-0.392	-0.403	-0.810	0.018	0.021	0.011	0.395	0.156	0.693	Y
41	x00093034	37	x00093034	0.335	0.128	-0.278	0.022	0.024	0.207	6.358	40.425	0.000	N
43	x00093398	38	x00093398	0.047	-0.012	-0.418	0.022	0.025	0.059	1.760	3.097	0.078	Y
44	x00093388	39	x00093388	-0.066	-0.313	-0.720	0.022	0.026	0.248	7.267	52.809	0.000	N
45	x00093293	45	x00093293	0.654	0.925	0.518	0.021	0.021	-0.271	-9.122	83.209	0.000	N
50	x00093294	57	x00093294	0.485	0.668	0.261	0.020	0.035	-0.183	-4.528	20.502	0.000	Y
58	x00093380	59	x00093380	1.559	0.948	0.542	0.037	0.036	0.611	11.840	140.190	0.000	N
61	x00093137	48	x00093137	2.030	1.962	1.556	0.035	0.025	0.068	1.575	2.481	0.115	Y
62	x00093374	65	x00093374	0.234	-0.137	-0.544	0.027	0.035	0.371	8.384	70.287	0.000	N
67	x00093298	67	x00093298	1.477	1.433	1.026	0.054	0.042	0.044	0.639	0.408	0.523	Y
76	x00093401	73	x00093401	1.967	2.156	1.749	0.042	0.033	-0.189	-3.532	12.474	0.000	Y
79	x00075740	71	x00075740	1.795	2.001	1.595	0.057	0.044	-0.206	-2.860	8.181	0.004	Y
80	x00093314	79	x00093314	2.768	3.171	2.764	0.052	0.042	-0.402	-6.016	36.192	0.000	N
82	x00098766	89	x00098766	1.133	1.611	1.204	0.052	0.043	-0.478	-7.082	50.153	0.000	N

	Grammar & Punctuation - Before Review			Grammar & Punctuation - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.049	0.049	-0.358	-0.192	-0.192	-0.585
Std. Deviation	1.581	1.655	1.655	1.722	1.786	1.786
Equating Shift		0.407			0.394	

J.O.10. Numeracy – Year 3/Year 5: Adjusted Deltas, Equating Parameters and Statistics

Year 3 Item No.	Year 3 Label	Year 5 Item No.	Year 5 Label	Year 3 Deltas	Year 5 Adjusted Deltas	Year 5 Deltas	Year 3 Error	Year 5 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
2	x00085137	58	x00085137	-2.050	-1.429	-2.732	0.026	0.042	-0.621	-12.564	157.856	0.000	N
4	x00087887	62	x00087887	-0.706	-0.871	-2.174	0.020	0.038	0.165	3.841	14.753	0.000	Y
7	x00087960	31	x00087960	-0.734	-0.989	-2.292	0.020	0.030	0.255	7.078	50.098	0.000	Y
8	x00087943	35	x00087943	0.436	0.596	-0.707	0.019	0.024	-0.160	-5.213	27.171	0.000	Y
10	x00103189	32	x00103189	-0.049	0.084	-1.219	0.019	0.025	-0.133	-4.231	17.902	0.000	Y
20	x00018868	44	x00018868	-1.835	-1.924	-3.227	0.035	0.058	0.089	1.320	1.742	0.187	Y
21	x00062161	49	x00062161	-0.565	-0.539	-1.843	0.028	0.039	-0.026	-0.538	0.289	0.591	Y
22	x00016163	113	x00016163	0.079	-0.193	-1.496	0.027	0.039	0.272	5.741	32.955	0.000	Y
25	x00085054	57	x00085054	-2.414	-2.395	-3.698	0.035	0.055	-0.018	-0.283	0.080	0.777	Y
32	x00027513	29	x00027513	-0.585	-0.949	-2.252	0.028	0.030	0.363	8.853	78.369	0.000	Y
34	x00027208	67	x00027208	0.167	-0.199	-1.502	0.030	0.036	0.365	7.793	60.737	0.000	Y
39	x00038695	45	x00038695	-1.915	-1.707	-3.010	0.045	0.053	-0.208	-2.997	8.982	0.003	Y
41	x00035698	19	x00035698	-1.913	-1.525	-2.828	0.045	0.046	-0.388	-6.025	36.296	0.000	Y
47	x00086613	18	x00086613	0.653	-0.115	-1.418	0.047	0.031	0.768	13.632	185.842	0.000	N
56	x00075132	64	x00075132	-1.135	-1.106	-2.409	0.030	0.039	-0.029	-0.590	0.349	0.555	Y
58	x00087637	30	x00087637	-1.002	-1.251	-2.554	0.030	0.033	0.249	5.582	31.162	0.000	Y
66	x00027511	37	x00027511	0.971	0.990	-0.313	0.024	0.024	-0.019	-0.557	0.311	0.577	Y
68	x00027534	40	x00027534	1.626	1.575	0.272	0.026	0.025	0.051	1.417	2.007	0.157	NN*
70	x00027522	71	x00027522	1.478	1.214	-0.089	0.025	0.032	0.263	6.483	42.036	0.000	Y
77	x00018870	116	x00018870	0.285	0.949	-0.354	0.035	0.032	-0.664	-14.002	196.046	0.000	N
79	x00019485	23	x00019485	1.447	0.949	-0.354	0.036	0.027	0.497	11.052	122.152	0.000	Y
83	x00002831	87	x00002831	1.072	0.917	-0.386	0.034	0.047	0.155	2.678	7.172	0.007	Y
88	x00068716	69	x00068716	-0.169	0.243	-1.060	0.024	0.037	-0.412	-9.332	87.085	0.000	Y
93	x00027813	104	x00027813	0.648	0.815	-0.488	0.024	0.023	-0.167	-5.011	25.112	0.000	Y
100	x00027811	20	x00027811	0.017	0.053	-1.250	0.033	0.030	-0.036	-0.805	0.648	0.421	Y
105	x00003052	117	x00003052	0.375	0.466	-0.838	0.034	0.034	-0.091	-1.889	3.568	0.059	Y
106	x00002789	85	x00002789	0.418	0.500	-0.803	0.034	0.052	-0.082	-1.316	1.733	0.188	Y
112	x00100202	42	x00100202	2.263	2.622	1.319	0.037	0.031	-0.358	-7.425	55.135	0.000	Y
113	x00086122	41	x00086122	2.147	1.965	0.662	0.036	0.026	0.182	4.097	16.783	0.000	Y
115	x00086064	127	x00086064	3.069	3.334	2.031	0.043	0.035	-0.265	-4.788	22.926	0.000	Y

* NN: Link item was removed due to misfit.

	Numeracy - Before Review			Numeracy - After Review		
	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas	Year 3 Deltas	Year 5 Adj. Deltas	Year 5 Deltas
Mean	0.069	0.069	-1.234	0.060	0.060	-1.261
Std. Deviation	1.367	1.357	1.357	1.370	1.386	1.386
Equating Shift		1.303			1.321	

J.O.11. Numeracy – Year 5/Year 7: Adjusted Deltas, Equating Parameters and Statistics

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
3	x00086808	9	x00086808	-1.491	-1.371	-2.792	0.022	0.028	-0.119	-3.351	11.232	0.001	Y
4	x00087781	69	x00087781	-1.159	-0.714	-2.134	0.021	0.026	-0.445	-13.317	177.339	0.000	N
9	x00085987	10	x00085987	-0.076	-0.213	-1.633	0.019	0.021	0.136	4.819	23.222	0.000	Y
10	x00026973	12	x00026973	0.586	0.524	-0.896	0.019	0.019	0.062	2.291	5.247	0.022	Y
13	x00092939	6	x00092939	0.858	1.035	-0.385	0.020	0.019	-0.177	-6.425	41.276	0.000	Y
26	x00068921	25	x00068921	0.482	0.574	-0.846	0.027	0.027	-0.091	-2.396	5.740	0.017	Y
33	x00087784	33	x00087784	-1.740	-1.107	-2.527	0.027	0.028	-0.633	-16.284	265.183	0.000	N
34	x00027737	34	x00027737	-1.014	-0.812	-2.233	0.024	0.026	-0.202	-5.707	32.566	0.000	Y
36	x00027217	68	x00027217	-0.389	-0.136	-1.557	0.024	0.025	-0.252	-7.285	53.074	0.000	Y
39	x00087819	41	x00087819	0.545	0.883	-0.537	0.026	0.023	-0.338	-9.740	94.876	0.000	Y
51	x00035425	18	x00035425	-0.913	-1.098	-2.518	0.034	0.036	0.184	3.724	13.870	0.000	Y
55	x00087911	52	x00087911	0.678	0.296	-1.124	0.037	0.033	0.382	7.702	59.326	0.000	Y
79	x00027212	29	x00027212	1.230	1.028	-0.393	0.029	0.027	0.203	5.116	26.178	0.000	Y
81	x00092124	7	x00092124	1.639	1.256	-0.164	0.030	0.019	0.383	10.789	116.412	0.000	Y
82	x00087876	126	x00087876	2.344	2.894	1.474	0.033	0.034	-0.550	-11.614	134.877	0.000	N
84	x00093437	95	x00093437	2.207	2.582	1.162	0.033	0.031	-0.375	-8.284	68.624	0.000	Y
86	x00027205	55	x00027205	0.735	0.638	-0.783	0.040	0.033	0.097	1.871	3.500	0.061	Y
90	x00014787	62	x00014787	0.203	0.345	-1.075	0.042	0.033	-0.142	-2.660	7.074	0.008	Y
96	x00086314	100	x00086314	1.832	1.405	-0.015	0.043	0.042	0.426	7.094	50.318	0.000	Y
99	x00087640	35	x00087640	-0.250	-0.427	-1.847	0.022	0.025	0.177	5.308	28.173	0.000	Y
106	x00069371	38	x00069371	0.298	0.499	-0.921	0.023	0.023	-0.202	-6.205	38.503	0.000	Y
107	x00093767	11	x00093767	0.667	0.451	-0.969	0.023	0.019	0.215	7.219	52.117	0.000	Y
108	x00093467	113	x00093467	0.428	0.404	-1.016	0.023	0.027	0.024	0.690	0.476	0.490	Y
109	x00027739	5	x00027739	0.595	0.690	-0.731	0.023	0.019	-0.095	-3.169	10.043	0.002	Y
110	x00027483	115	x00027483	0.978	1.016	-0.405	0.025	0.025	-0.038	-1.061	1.126	0.289	Y
111	x00027195	13	x00027195	1.255	0.564	-0.856	0.026	0.019	0.691	21.454	460.257	0.000	N
114	x00093468	129	x00093468	-0.277	-0.546	-1.967	0.032	0.049	0.269	4.594	21.108	0.000	Y
115	x00087710	17	x00087710	-0.155	-0.103	-1.524	0.031	0.029	-0.051	-1.213	1.471	0.225	Y
118	x00085985	26	x00085985	0.517	0.208	-1.212	0.032	0.028	0.309	7.256	52.649	0.000	Y
119	x00088330	54	x00088330	0.281	0.459	-0.962	0.032	0.033	-0.178	-3.870	14.978	0.000	Y
121	x00068143	27	x00068143	1.073	0.650	-0.770	0.035	0.027	0.423	9.559	91.367	0.000	Y
122	x00027385	22	x00027385	1.215	1.226	-0.194	0.036	0.027	-0.011	-0.251	0.063	0.802	Y
125	x00028044	98	x00028044	1.297	1.505	0.084	0.037	0.042	-0.207	-3.704	13.719	0.000	Y
126	x00084864	30	x00084864	1.859	1.264	-0.157	0.043	0.027	0.595	11.727	137.524	0.000	N

Year 5 Item No.	Year 5 Label	Year 7 Item No.	Year 7 Label	Year 5 Deltas	Year 7 Adjusted Deltas	Year 7 Deltas	Year 5 Error	Year 7 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
134	x00093496	15	x00093496	2.539	2.443	1.022	0.037	0.022	0.096	2.231	4.979	0.026	Y
136	x00068562	127	x00068562	2.293	2.624	1.204	0.036	0.032	-0.331	-6.869	47.182	0.000	Y
137	x00087931	91	x00087931	2.724	2.505	1.084	0.039	0.031	0.219	4.394	19.304	0.000	Y
138	x00092564	157	x00092564	3.485	3.882	2.462	0.047	0.046	-0.397	-6.039	36.473	0.000	Y
139	x00092557	96	x00092557	3.461	3.516	2.096	0.048	0.037	-0.055	-0.906	0.821	0.365	Y

	Numeracy - Before Review			Numeracy - After Review		
	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas	Year 5 Deltas	Year 7 Adj. Deltas	Year 7 Deltas
Mean	0.791	0.791	-0.629	0.832	0.832	-0.599
Std. Deviation	1.256	1.250	1.250	1.179	1.216	1.216
Equating Shift		1.420			1.430	

J.O.12. Numeracy – Year 7/Year 9: Adjusted Deltas, Equating Parameters and Statistics

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
1	x00027251	70	x00027251	-1.253	-0.970	-1.818	0.020	0.026	-0.283	-8.635	74.572	0.000	Y
3	x00092579	37	x00092579	-0.707	-0.743	-1.591	0.019	0.025	0.036	1.146	1.313	0.252	Y
4	x00092626	5	x00092626	-0.195	-0.114	-0.962	0.019	0.020	-0.081	-2.951	8.708	0.003	Y
14	x00092244	12	x00092244	0.434	0.951	0.103	0.020	0.021	-0.517	-17.821	317.583	0.000	NN*
16	x00092532	14	x00092532	1.893	1.763	0.915	0.028	0.024	0.131	3.540	12.533	0.000	Y
28	x00095113	26	x00095113	-0.130	0.030	-0.818	0.027	0.028	-0.160	-4.112	16.906	0.000	Y
37	x00027299	36	x00027299	-1.515	-1.365	-2.213	0.024	0.026	-0.150	-4.251	18.071	0.000	Y
39	x00027280	2	x00027280	-1.116	-0.962	-1.810	0.023	0.021	-0.154	-4.937	24.378	0.000	Y
40	x00092374	67	x00092374	-1.487	-1.034	-1.882	0.024	0.025	-0.452	-13.051	170.326	0.000	Y
42	x00027172	1	x00027172	-0.250	-1.119	-1.968	0.024	0.022	0.870	26.711	713.491	0.000	N
45	x00027301	42	x00027301	-0.175	-0.016	-0.864	0.024	0.025	-0.159	-4.590	21.067	0.000	Y
47	x00092177	73	x00092177	-0.164	-0.122	-0.970	0.024	0.027	-0.043	-1.185	1.403	0.236	Y
61	x00027312	128	x00027312	-0.120	0.423	-0.425	0.035	0.036	-0.543	-10.821	117.097	0.000	Y
64	x00014989	22	x00014989	0.469	0.128	-0.720	0.040	0.028	0.341	6.975	48.646	0.000	Y
67	x00026946	66	x00026946	-2.888	-2.785	-3.634	0.030	0.035	-0.103	-2.224	4.945	0.026	Y
74	x00085989	34	x00085989	-1.099	-1.131	-1.979	0.025	0.025	0.032	0.913	0.833	0.361	Y
77	x00092096	68	x00092096	-0.231	-0.533	-1.381	0.029	0.026	0.302	7.753	60.111	0.000	Y
78	x00027304	38	x00027304	-1.185	-0.484	-1.332	0.025	0.024	-0.702	-20.243	409.773	0.000	N
80	x00094838	69	x00094838	-0.992	-0.885	-1.733	0.026	0.026	-0.106	-2.885	8.321	0.004	Y
83	x00092511	46	x00092511	0.462	0.993	0.145	0.030	0.029	-0.532	-12.739	162.292	0.000	Y
85	x00092100	119	x00092100	0.351	1.544	0.696	0.030	0.028	-1.193	-29.075	845.379	0.000	N
92	x00092301	127	x00092301	2.022	2.602	1.754	0.036	0.040	-0.581	-10.788	116.387	0.000	Y
93	x00092383	121	x00092383	1.393	1.857	1.009	0.032	0.031	-0.464	-10.412	108.408	0.000	Y
94	x00092104	124	x00092104	1.965	2.370	1.522	0.036	0.036	-0.405	-7.961	63.377	0.000	Y
104	x00043943	141	x00043943	0.252	0.939	0.091	0.042	0.038	-0.687	-12.135	147.266	0.000	Y
105	x00092568	20	x00092568	0.780	0.395	-0.453	0.042	0.028	0.384	7.616	57.996	0.000	Y
106	x00038938	139	x00038938	1.039	1.064	0.216	0.043	0.038	-0.025	-0.438	0.192	0.661	Y
117	x00092519	113	x00092519	0.577	0.829	-0.019	0.027	0.025	-0.253	-6.863	47.100	0.000	Y
119	x00094733	45	x00094733	0.095	-0.792	-1.640	0.026	0.025	0.887	24.589	604.599	0.000	N
120	x00092390	77	x00092390	-0.022	0.058	-0.790	0.026	0.019	-0.081	-2.507	6.286	0.012	Y
122	x00092237	117	x00092237	1.232	1.385	0.537	0.031	0.027	-0.154	-3.742	14.005	0.000	Y
128	x00092632	144	x00092632	2.596	1.669	0.821	0.052	0.051	0.927	12.722	161.857	0.000	N
130	x00035668	50	x00035668	-0.726	-0.892	-1.740	0.037	0.035	0.166	3.253	10.579	0.001	Y
131	x00057860	18	x00057860	-1.100	-1.655	-2.503	0.039	0.035	0.556	10.601	112.381	0.000	Y

Year 7 Item No.	Year 7 Label	Year 9 Item No.	Year 9 Label	Year 7 Deltas	Year 9 Adjusted Deltas	Year 9 Deltas	Year 7 Error	Year 9 Error	Difference	Standardized Difference	Chi-Square	Significance Level	Link Used
132	x00014955	19	x00014955	-0.807	-1.416	-2.264	0.038	0.033	0.609	12.097	146.345	0.000	Y
134	x00092577	51	x00092577	-0.892	-1.100	-1.948	0.038	0.036	0.208	3.976	15.809	0.000	Y
135	x00092191	54	x00092191	0.192	-0.190	-1.038	0.037	0.035	0.382	7.492	56.126	0.000	NN*
138	x00092637	135	x00092637	0.240	0.734	-0.114	0.037	0.036	-0.493	-9.557	91.343	0.000	Y
140	x00095678	58	x00095678	0.427	0.787	-0.061	0.038	0.039	-0.360	-6.615	43.765	0.000	Y
142	x00003146	137	x00003146	-0.675	-1.115	-1.963	0.038	0.047	0.440	7.284	53.057	0.000	Y
143	x00027322	53	x00027322	0.959	-0.169	-1.017	0.043	0.035	1.128	20.351	414.171	0.000	N
144	x00092565	138	x00092565	1.835	2.172	1.324	0.056	0.047	-0.337	-4.615	21.298	0.000	Y
146	x00027177	39	x00027177	1.115	1.471	0.623	0.036	0.033	-0.356	-7.297	53.242	0.000	Y
148	x00092591	83	x00092591	1.353	0.848	0.000	0.036	0.030	0.505	10.783	116.281	0.000	Y
150	x00027308	87	x00027308	1.783	1.377	0.529	0.038	0.030	0.406	8.385	70.300	0.000	Y
154	x00092524	89	x00092524	2.219	1.169	0.321	0.043	0.030	1.050	20.017	400.677	0.000	N
157	x00092564	125	x00092564	2.462	2.446	1.597	0.046	0.037	0.017	0.281	0.079	0.779	Y

* NN: Link item was removed due to misfit.

	Numeracy - Before Review			Numeracy - After Review		
	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas	Year 7 Deltas	Year 9 Adj. Deltas	Year 9 Deltas
Mean	0.222	0.222	-0.626	0.132	0.132	-0.642
Std. Deviation	1.213	1.254	1.254	1.219	1.309	1.309
Equating Shift		0.848			0.774	

APPENDIX K. NAPLAN 2018 WRITING PAIRWISE EQUATING SUMMARY

Pairwise Equating Verification

As background and context to the pairwise equating verification study, the following variations of tasks have been used in previous years.

- From 2008 to 2010, narrative writing tasks, single prompt
- From 2011 to 2014, persuasive tasks, single prompt
- In 2015, separate persuasive tasks for years 3 and 5 versus years 7 and 9
- In 2016, separate narrative tasks for years 3 and 5 versus years 7 and 9
- In 2017 and 2018, separate persuasive tasks for years 3 and 5 versus years 7 and 9
- In 2018, a portion of assessments were administered online

Thus, in 2018 Persuasive prompts were administered to participating students with different prompts for lower year levels and higher year levels. In 2018 there were two *pairs* of tasks, which are referred to here as T1 and T2, which were first administered on day 1 and day 2 in the testing period. In each pair, T1 and T2, there is a Year 3/5 and Year 7/9 task.

T1 is paper and online, whereas T2 is online only.

The equating verification study comprised of the following key components:

- Pairwise comparisons of 2015 and 2018 scripts to obtain, if possible, a common scale based on the comparisons
- Cross-referencing pairwise locations for 2015 and 2018 paper with rubric-based locations for the same scripts
- Cross-referencing pairwise locations for 2018 online with rubric-based locations for the same scripts

A decision has been made to form a single Writing scale. Nevertheless, as context for interpreting the information, it is useful to observe similarities and differences between genres. The Narrative and Persuasive marking guides contain overlapping criteria but also have differences which are summarised below:

- The first three criteria differ in being genre-specific (Audience, Text Structure, Ideas)
- The fourth Narrative criterion is Character and Setting whereas the fourth Persuasive criterion is Persuasive Devices (they have an equal number of categories)
- Paragraphing has a different number of categories
- Other criteria are the same – these include Cohesion and all conventions apart from Paragraphing

In previous years, identity equating had been employed. In 2018, there was again a high correlation between threshold locations for 2015 and 2018 calibrations and the decision made to treat the scale as the same.

The pairwise study design for Writing in the NAPLAN 2018 assessment was essentially the same as that used in 2017, although it included an additional component focusing on the assessments administered online.

With respect to the paper component, a group of 40 judges compared (i) 2015 scripts with other 2015 scripts, (ii) 2018 paper scripts with other 2018 paper scripts, and (iii) 2015 scripts with 2018 paper scripts. The 2015 and 2018 scripts represented performances on two different tasks designed for Year 3/5 and Year 7/9 students.

In addition, the same judges compared 2018 scripts administered online with 2018 paper-based scripts.

The purpose of the pairwise study was to cross-check other sources of information in the equating of Writing. The design allows evaluation of whether, for a given scale location based on pairwise comparisons, a similar rubric score was predicted for 2015 and 2018 scripts.

Pairwise Study

The purpose of the pairwise study is to obtain a common frame of reference by which to compare marking in 2015 with marking in 2018. The key focus is whether there is indication of a change in marker behaviour and trends, including but not limited to changes in harshness. It is noted that in the procedure, prompts are selected in an attempt to minimise task effects to the extent possible. It is also noted that exemplars are used in the Writing marking guide to help anchor score points over time.

There were a total of 466 scripts of which 234 were from 2015 and 232 were from 2018. For all scripts a rubric score was available from marking conducted in the relevant calendar year. Scripts were drawn by jurisdictions so that there was approximately a uniform distribution across most of the range of raw scores, with equal numbers for Year 3/5 and Year 7/9 tasks in the sample. A total of 40 judges from around Australia made a total of 17,603 comparisons between paper scripts and an additional 10,623 comparisons between paper and online administered performances.

The online performances were compared with a selected set of paper performances. Only paper-online comparisons were made (not online-online comparisons).

All but two judges had good Outfit indices (less than 1.2), the others being between 1.3 and 1.4. Person Characteristic Curves were checked for each and every performance, showing acceptable fit across the range. Only one performance had an Outfit value exceeding 1.3.

Figure X1 shows the plot of pairwise scale locations (x-axis) against locations based on the rubrics (y-axis) for 2015 and 2018 separately. The linear correlation overall is approximately $r = 0.943$ for 2015 scripts and $r = 0.942$ for 2018 scripts. As can be seen, however, the curves are somewhat curvilinear as in previous years of the programme.

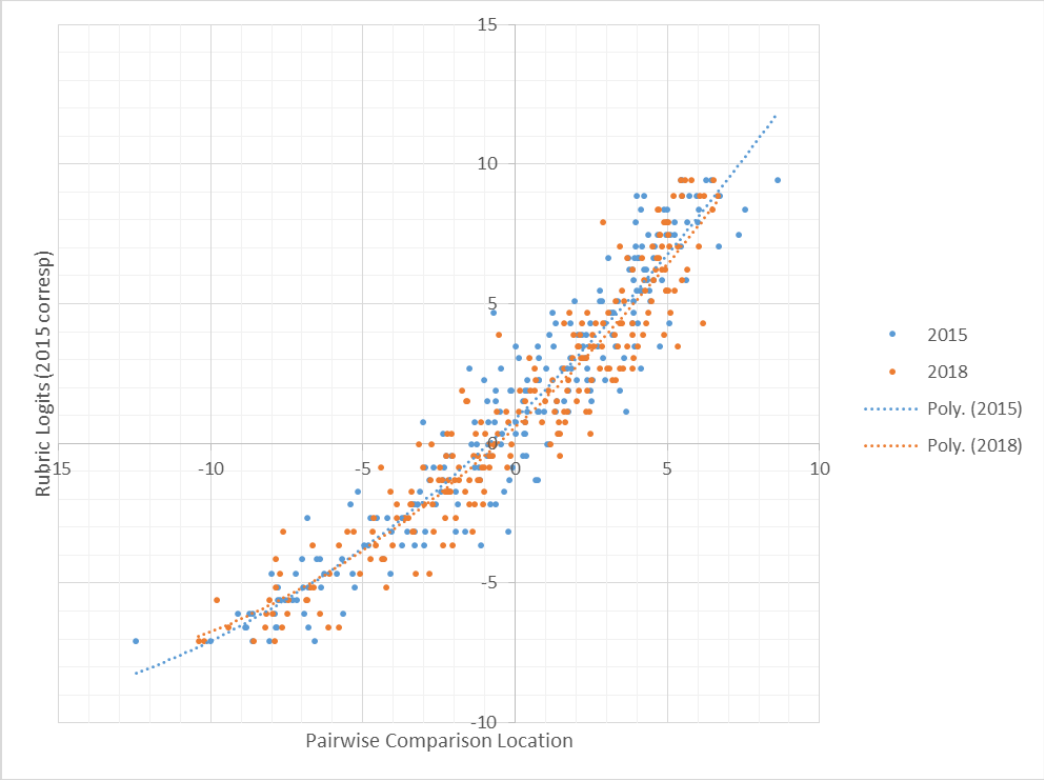


Figure X1. Scatterplot of the NAPLAN and pairwise scale locations.

The pairwise scale locations show the ordering of the scripts based on direct comparisons whereas the NAPLAN scale locations are based on rubric marking. In the plot, Persuasive writing 2015 and Persuasive writing 2018 are highlighted separately. The rubric locations for 2015 are based on the 2011 calibration, which continued to be used until 2015. The rubric locations (logits) for 2018 are based on the same correspondence table. Regression lines are shown separately for each of these years. It can be seen that there is a very similar correspondence between the pairwise and NAPLAN scale locations for 2015 and 2018 scripts. The correlation and nature of the relationship are relatively similar for both of these calendar years to the relationship in previous calendar years.

Figure X2 shows the same plot with the addition of the online performances. Again, the pairwise scale locations of the performances are shown on the *x*-axis and the rubric locations for the same performances are shown on the *y*-axis. The legend shows Online T1T2 as there were two online tasks that are combined for the purpose of this display.

Cross-referencing the pairwise locations with rubric locations indicates quite a high level of consistency in marking between 2015 and 2018. This evidence can be interpreted in combination with the high level of correspondence between threshold locations in 2015 and 2018. However, some differences were observed in relation to the marking of performances administered online.

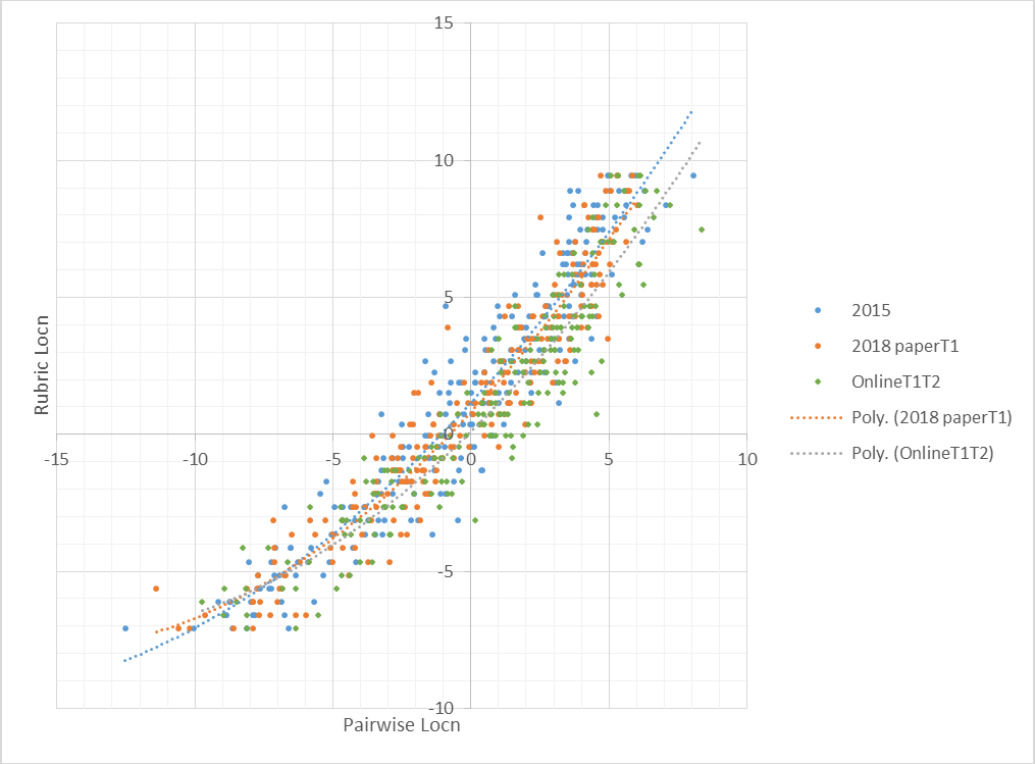


Figure X2. Scatterplot of the NAPLAN and pairwise scale locations with online performances included.

Figures X3 and X4 show the scatterplot of pairwise scale locations against NAPLAN rubric locations for the online tasks T1 and T2 separately. There were 100 online T1 performances and 100 online T2 performances.

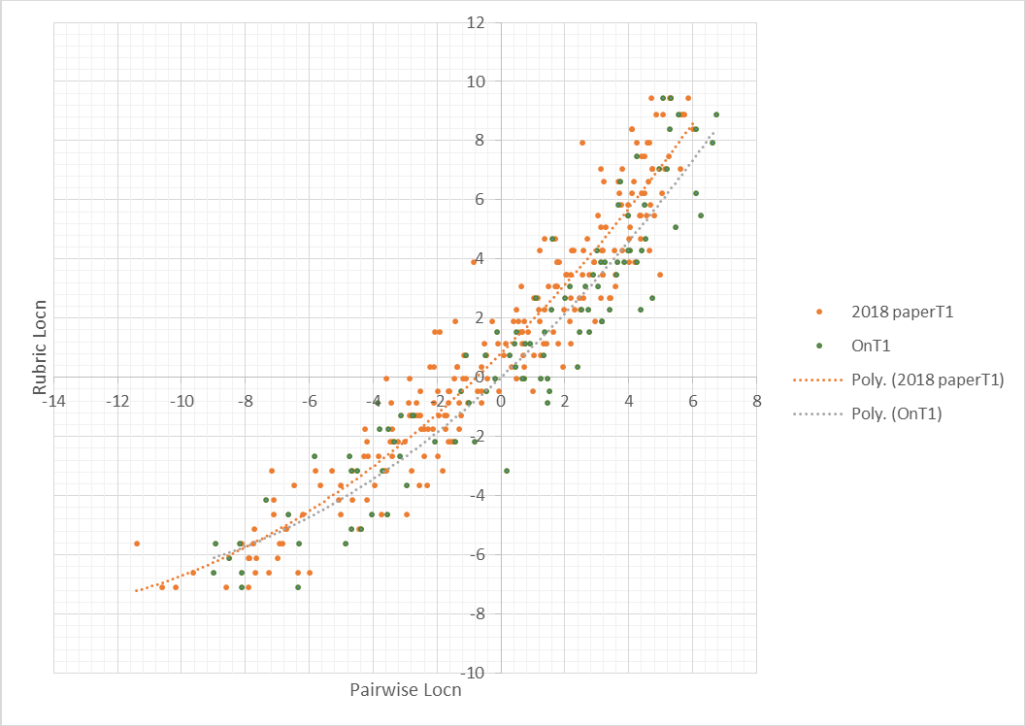


Figure X3. Scatterplot of the NAPLAN and pairwise scale locations with online T1 performances included

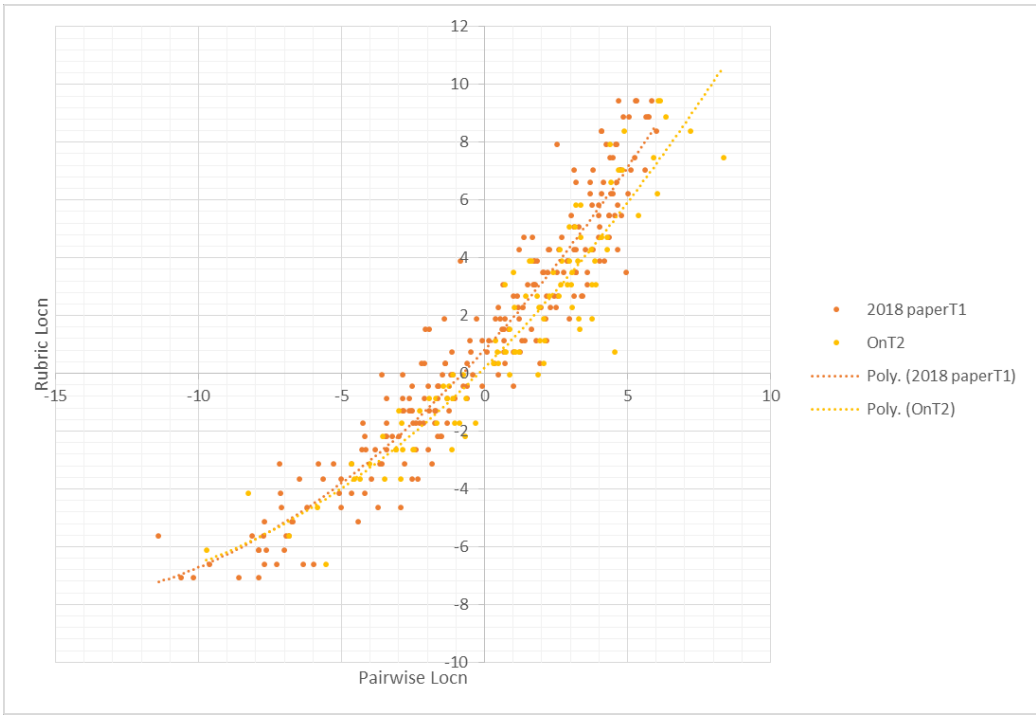


Figure X4. Scatterplot of the NAPLAN and pairwise scale locations with online T2 performances included

Relative to the pairwise comparison scale locations, raters appear to have assessed somewhat more harshly at the upper end of the range. It is noted that there is a reasonably modest number of performances from which to infer harshness and particularly interactions between scale locations and harshness across the range. Also, the design is not sufficient to ascertain

whether task difficulties and/or the testing mode impacted on the performances. For this purpose common performances are needed across the modes, which was not feasible in 2018.